



European Union Agency for the Cooperation  
of Energy Regulators

# **ACER**

# **Monitoring of the Implementation of the Grid Connection Network Codes**

**An updated analysis  
following the publication  
of the Implementation  
Monitoring Reports**

11 November 2021



# ACER

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# 1. Introduction

## 1.1 Background

- 1 Article 32(1) of Regulation (EU) 2019/943<sup>1</sup> requires the Agency for the Cooperation of Energy Regulators ('ACER') to monitor and analyse the implementation of the Network Codes ('NCs') and the Guidelines adopted by the European Commission ('EC'). Furthermore, ACER shall monitor their effect on the harmonisation of applicable rules aimed at facilitating market integration, as well as on non-discrimination, effective competition and the effective functioning of the market, and report to the EC.
- 2 As a contribution to this monitoring obligation, ACER develops and publishes Implementation Monitoring Reports ('IMRs'), which provide the most up-to-date picture on the status of the implementation of the NCs they refer to.
- 3 This Report focuses on the implementation monitoring activities carried out by ACER regarding the three Grid Connection ('GC') NCs:
  - NC RfG - *Commission Regulation (EU) 2016/631 of 14 April 2016, establishing a network code on requirements for grid connection of generators,*
  - NC DC - *Commission Regulation (EU) 2016/1388 of 17 August 2016, establishing a network code on demand connection, and*
  - NC HVDC - *Commission Regulation (EU) 2016/1447 of 26 August 2016, establishing a network code on requirements for grid connection of high voltage direct current systems and direct current-connected power park modules.*
- 4 The latest editions of the IMRs concerning the GC NCs were published by ACER in December 2020 and are mentioned below:
  - The 3<sup>rd</sup> edition of the IMR on the NC RfG,<sup>2</sup> and
  - The 2<sup>nd</sup> edition of the IMR on the NC DC and NC HVDC.<sup>3</sup>
- 5 Previous editions of the IMRs concerning the GC NCs are available on ACER's website.<sup>4</sup> In the remainder of this Report, all the references to the IMR on the NC RfG refer to its most recent edition (3<sup>rd</sup>), unless specified otherwise. Similarly, all the references to the IMR on the NC DC and NC HVDC refer to its latest edition (2<sup>nd</sup>), unless specified otherwise.
- 6 The outcomes of the recent implementation monitoring activities concerning the GC NCs and presented in the IMRs published in 2020 revealed a satisfactory level of implementation of the relevant European regulations in most of the Member States.

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<sup>1</sup> Regulation (EU) 2019/943 of the European Parliament and the Council of Europe of 5 June 2019 on the internal market for electricity. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R0943>.

<sup>2</sup> Available at: [https://documents.acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Publication/3rd%20edition%20NC%20RfG%20implementation%20monitoring%20report%202020.pdf](https://documents.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/3rd%20edition%20NC%20RfG%20implementation%20monitoring%20report%202020.pdf).

<sup>3</sup> Available at: [https://documents.acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Publication/2nd%20edition%20Monitoring\\_Report\\_NC\\_DC\\_and\\_NC\\_HVDC%20Implementation%202020.pdf](https://documents.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/2nd%20edition%20Monitoring_Report_NC_DC_and_NC_HVDC%20Implementation%202020.pdf).

<sup>4</sup> <https://www.acer.europa.eu/documents/publications>.

- 7 However, in both the above-mentioned IMRs, ACER highlighted that a complete EU-wide implementation of the GC NCs has not been achieved yet. In fact, the IMRs identified some implementation issues (e.g., late or still pending establishment of the requirements of general application of the GC NCs)<sup>5</sup> in certain Member States.
- 8 With regard to the NC RfG, most of the identified issues were related to the requirements of general application of the NC RfG that has been implemented differently from the provisions included in the corresponding NC. In other words, the national implementation of particular provisions was deemed to not fully comply with the requirements established in the EU regulation. In addition, the latest IMR on the NC RfG also outlined the presence in the national grid codes of requirements that go beyond those laid down in the NC RfG.
- 9 Cases similar to those described above concerning the NC RfG were highlighted also in the IMR on the NC DC and NC HVDC. In addition, the relevant IMR underlined that in a few Member States the process towards the implementation of the NC HVDC had not started yet, and no timeline nor work plan were provided.

## 1.2 Data and scope

- 10 Following the IMRs' publication, during meetings<sup>6</sup> with the National Regulatory Authorities ('NRAs'), ACER has encouraged the NRAs to exercise their competences and ensure the compliance of system operators with the GC NCs. Although NRAs might not always represent the entities designated by the Member States to approve and implement the provisions in the GC NCs, it is still the NRAs' duty to ensure that relevant system operators comply with the applicable EU laws.<sup>7</sup>
- 11 In reference to the IMRs, ACER has circulated<sup>8</sup> with the System Operation and Grid Connection Task Force ('SOGC TF') a summary of all the provisions referred to national level implementations that were not compliant with the GC NCs.
- 12 In particular, the compliance issues have been clustered in seven topics concerning the NC RfG and seven topics concerning the NC DC and NC HVDC. Further details on these topics<sup>9</sup> are provided in Section 3.3.1 (NC RfG) and 4.3.1 (NC DC and NC HVDC). References to the relevant sections in the corresponding IMRs (where the status of the implementation concerning these topics is assessed) are also provided.
- 13 Circulating the summary of the compliance issues, ACER requested NRAs to report back about:
- any mistake compared to the information included in the IMRs,
  - any situations that have been already resolved (e.g., the approval of the requirements of general application of one (or more) GC NC(s) may have been reached after the publication date of the relevant IMR(s)), and/or
  - any action plans to solve the identified compliance issues.
- 14 This Report collects and analyses the replies communicated by the NRAs pursuant to ACER's request referred to in paragraph (13). In doing so, it takes into account the information already

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<sup>5</sup> Pursuant to Article 7 of the NC RfG, pursuant to Article 6 of the NC DC, as well as pursuant to Article 5 of the NC HVDC.

<sup>6</sup> E.g., meetings of the System Operation of Grid Connection Task Force and the Electricity Working Group (<https://acer.europa.eu/the-agency/organisation-and-bodies/acer-working-corner>).

<sup>7</sup> Directive (EU) 2019/944 of the European Parliament and of The Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (<https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32019L0944>).

<sup>8</sup> On 26 January 2021 via email exchange.

<sup>9</sup> E.g., the approval of the requirements of general application, the presence of parameters' variation (at national level) compared to the values in the corresponding NCs, etc.

presented by the relevant NRAs in the IMRs on GC NCs. Therefore, this Report offers an up to date picture of the status of the implementation of the GC NCs among the Member States, focusing on the provisions and requirements whose implementation at national level does not comply with the relevant EU Regulation.

- 15 The implementation monitoring activities carried out by ACER and reported in the IMRs addressed 28 NRAs. Among these, 25 respondents were from Member States<sup>10</sup> and three (Ofgem (GB), UR (UK-NIR) and NVE-RME (NO)) from non-EU countries. Although non-compliances have been reported by NRAs of non-EU countries,<sup>11</sup> this Report focuses on the Member States only.
- 16 Furthermore, not all the 25 NRAs were requested to report back to ACER. Table 1 (Section 3.1) and Table 17 (Section 4.1), concerning the NC RfG and the NC DC – NC HVDC, respectively, divide the NRAs into two main groups with respect to each IMR. The first includes the NRAs that were not requested to provide follow-up information since the relevant national regulation complies with the provisions and requirements of the GC NCs. The second consists of the NRAs that reported in one or both IMR(s) at least one non-compliance with the GC NCs.

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<sup>10</sup> E-Control (AT), CREG (BE), EWRC (BG), ERO (CZ), BNetzA (DE), DUR (DK), ECA (EE), CNMC (ES), EV (FI), CRE (FR), RAE (GR), HERA (HR), HEA (HU), CRU (IE), ARERA (IT), NERC (LT), ILR (LU), PUC (LV), ACM (NL), URE (PL), ERSE (PT), ANRE (RO), Ei (SE), AGEN-RS (SI) and RONI (SK).

<sup>11</sup> UR (UK-NIR) reported non-compliances in both the IMRs; the implementation of the GC NCs in NO is still overall outstanding.

## 2. Summary and recommendations

### 2.1 High-level summary

- 17 In the light of the NRAs' replies and analysis performed for the Report, ACER has come to the following conclusions.
- 18 ACER confirms the outcomes arising from the IMRs on GC NCs which demonstrated an overall satisfactory status of the implementation of the GC NCs among the Member States.
- 19 However, ACER acknowledges that only a few of the identified non-compliances have been actually addressed by the relevant NRAs.
- 20 The IMR on the NC RfG revealed 38 compliance issues in 16 Member States.<sup>12</sup> Based on the communications from the NRAs, pursuant to ACER's request in paragraph (13), ACER deemed that only 13 issues have been addressed.<sup>13</sup> Furthermore, two additional compliance issues have been reported by CNMC (ES) and HERA (HR). A more detailed summary of the non-compliances in Section 3.2 outlines 27 remaining issues in 15 Member States.<sup>14</sup>
- 21 The IMR on the NC DC and NC HVDC revealed 40 compliance issues in 17 Member States.<sup>15</sup> Based on the communications from the NRAs, pursuant to ACER's request in paragraph (13), ACER deemed that only 11 issues have been addressed.<sup>16</sup> Furthermore, an additional compliance issue has been reported by CNMC (ES). The detailed summary of the non-compliances in Section 4.2 outlines 30 remaining issues in 13 Member States.<sup>17</sup>
- 22 As a consequence, ACER highlights that the compliance issues reported in the previous IMRs on GC NCs have largely not been resolved yet. Moreover, most of the contacted NRAs were not able to demonstrate the application of appropriate measures to ensure full compliance of the national legislation with the rules set out in relevant EU regulations.

### 2.2 Policy recommendations

- 23 Based on the abovementioned conclusions, ACER supports the following policy recommendations:
- In general, ACER urges the designated entities of the Member States to conclude the implementation and/or ensure the compliance with the corresponding provisions of the GC NCs. Therefore, ACER recommends NRAs to facilitate the necessary actions via detailed implementation plans and/or take expeditious actions to ensure fully-compliant implementation of the GC NCs in their Member States.
  - In particular, ACER:
    - reports that ILR (LU) and ERSE (PT) have not yet ensured<sup>18</sup> the compliance of the relevant system operators in their Member States concerning the connection rules prescribed in the NC HVDC regarding the relevant system users. In the

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<sup>12</sup> BE, BG, CZ, DE, EE, ES, FI, FR, GR, HR, IE, IT, NL, PT, SE and SI.

<sup>13</sup> Two in DE, one in ES, one in FI, four in GR, one in IE, two in NL, one in PT and one in SE.

<sup>14</sup> BE, BG, CZ, DE, EE, ES, FI, FR, GR, HR, IE, IT, PT, SE and SI.

<sup>15</sup> AT, BG, CZ, DE, EE, ES, FR, HR, HU, IE, LU, NL, PL, PT, SE, SI, and SK.

<sup>16</sup> One in AT, two in DE, one in EE, two in ES, two in FR, two in NL and one in PT.

<sup>17</sup> AT, BG, CZ, ES, HR, HU, IE, LU, PL, PT, SE, SI, and SK

<sup>18</sup> In accordance with Article 59(1)(b) of Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast).



communications with ACER, these NRAs did not bring forward a detailed plan towards the implementation of the NC HVDC.<sup>19</sup> On the other hand, E-Control (AT) and Ei (SE) detailed implementation roadmaps to bring the connection rules to the full compliance with the NC HVDC,

- highlights that it cannot ascertain the status of the implementation of the three GC NCs in BG due to the lack of response from the relevant NRA (EWRC), and,
- invites EWRC (BG), HERA (HR) and HEA (HU) to provide ACER with relevant information, as requested in paragraph (13), concerning any compliance issues identified in their Member States relevant to the NC DC and/or the NC HVDC.

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<sup>19</sup> For instance, it remains unclear when the relevant TSOs in LU and PT are expected to submit to the competent authorities (e.g., the NRAs) the proposals for the requirements of general application of the NC HVDC.

### 3. Status of the implementation of the NC RfG

#### 3.1 Overall picture

- 24 The overall status of the implementation of the NC RfG as per the previous editions of the IMRs is shown in Figure 1.
- 25 The areas in green refer to Member States (36% of the monitored Member States) where the NC RfG was deemed to be fully implemented.<sup>20</sup> Hence, the NRAs corresponding to these Member States had not been requested by ACER to provide additional information concerning the status of the implementation of the NC RfG. On the other hand, the remaining Member States coloured in blue (64% of the monitored Member States) had not duly implemented all the provisions of the NC RfG. Concerning the NC RfG and for the purpose of the Report, ACER contacted the relevant NRAs of only the latter Member States, assuming that the full compliance with the NC RfG has not been lost in the rest of the Member States.

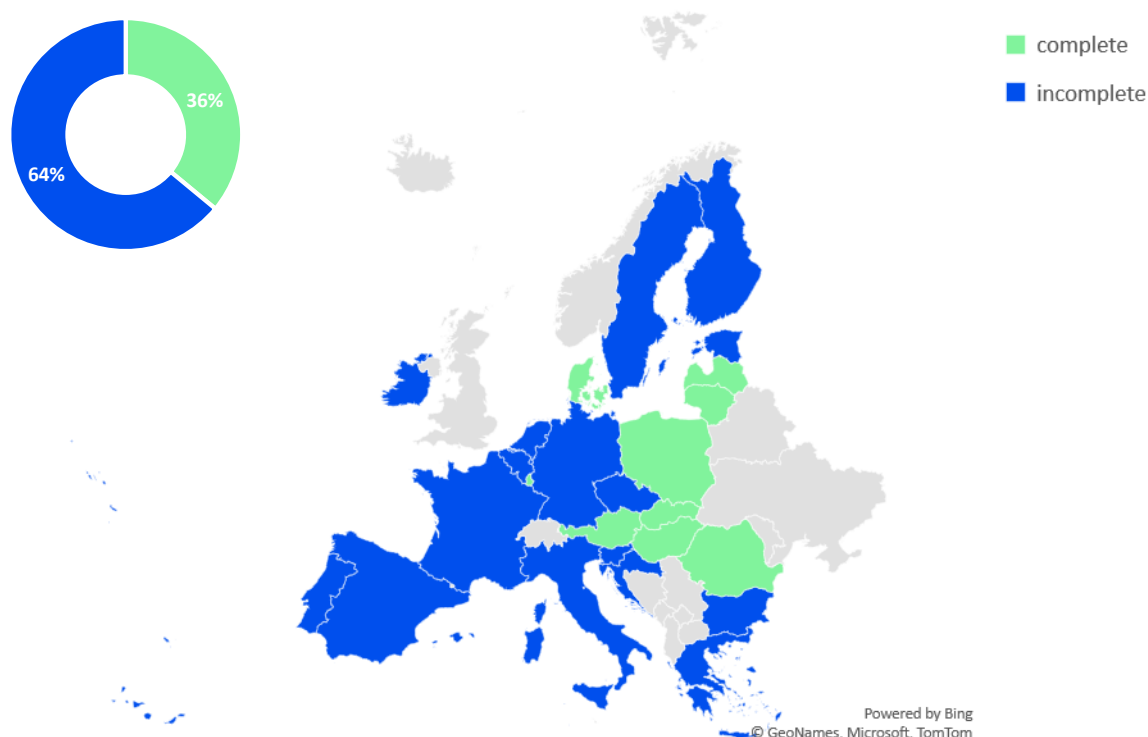


Figure 1. Overall status of the implementation of the NC RfG by Member State as presented in IMRs

- 26 The NRAs' responses in full are included in Section A of Annex I.
- 27 Among the contacted NRAs concerning the NC RfG, one NRA did not provide answers.<sup>21</sup> ACER may conclude that the situation concerning the implementation of the NC RfG in BG and included in the previous IMRs has not changed.

<sup>20</sup> AT, DK, HU, LT, LU, LV, PL, RO and SK.

<sup>21</sup> EWRC (BG).

28 Table 1 contains an overview of NRAs participation in the follow-up implementation monitoring activities presented in this Report. The leftmost column lists the NRAs that were not requested by ACER to provide additional information. The NRAs included in the central and the rightmost columns were requested to clarify the issues concerning the implementation of certain provisions of the NC RfG. The NRAs in the central column reported relevant information to ACER. The received information is presented and analysed in the Section 3.3, for each NRA. Finally, the NRA in the rightmost column did not provide any feedback.

Table 1. NRAs' participation in the follow-up implementation monitoring activities concerning the NC RfG

NRAs that were not requested to provide clarifications (9)	Contacted NRAs concerning the NC RfG	
	NRAs that replied (15)	NRAs that did not reply (1)
E-Control (AT), DUR (DK), HEA (HU), NERC (LT), ILR (LU), PUC (LV), URE (PL), ANRE (RO), RONI (SK)	CREG (BE), ERO (CZ), BNetzA (DE), ECA (EE), CNMC (ES), EV (FI), CRE (FR), RAE (GR), HERA (HR), CRU (IE), ARERA (IT), ACM (NL), ERSE (PT), Ei (SE), AGEN-RS (SI)	EWRC (BG)

### 3.2 Summary of the compliance issues concerning the NC RfG

29 The IMR on NC RfG revealed that, in certain Member States, some of the provisions of the NC RfG have not been implemented at national level in full compliance with the NC RfG. Pursuant to ACER's request to NRAs to provide clarifications<sup>22</sup> on the identified compliance issues,<sup>23</sup> Figure 2 represents a high-level summary of the analysis in Section 3.1 and 3.3 with regard to the compliance issues concerning the NC RfG.

<sup>22</sup> See paragraph (13).

<sup>23</sup> With respect to the topics identified in Section 3.3.1.

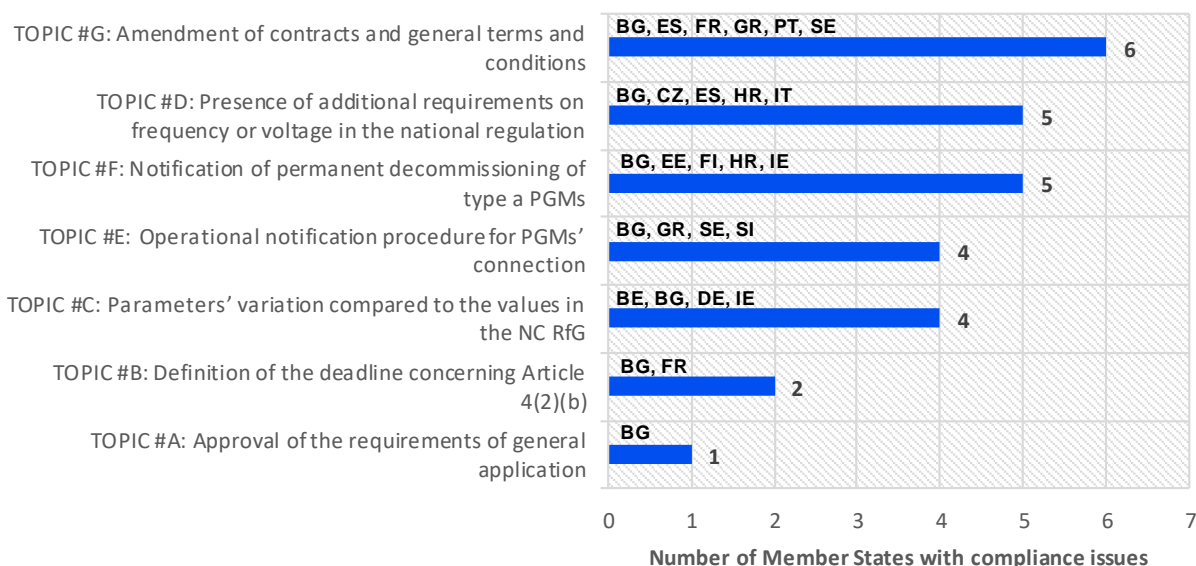


Figure 2. Number of Member States by issues remaining for implementation

- 30 The most recurrent issues that are shown in Figure 2 refer to TOPIC #G, i.e., the amendment of contracts and general terms and conditions relating to the grid connection of new Power Generating Modules (PGMs). Non-compliances referring to TOPIC #G have been identified in six Member States. On the other hand, Figure 2 also shows that the formal approval of (some of) the requirements of general application of the NC RfG (TOPIC #A) has been reached in all the Member States but BG. Similarly, the deadline referring to Article 4(2)(b) (TOPIC #B) has been defined and respected in almost the totality of the Member States, with two exceptions (BG and FR).
- 31 ACER considers that most of the responding NRAs did not propose concrete actions or roadmaps enabling the full compliance of national regulation with the NC RfG. In fact, the last edition of the relevant IMR highlighted the presence of 38 non-compliances from 16 NRAs. Section 3.3 reveals that only 13 such issues were remedied.<sup>24</sup> Nevertheless, additional<sup>25</sup> non-compliances have been reported by CNMC (ES) and HERA (HR) concerning TOPIC #D (see Section 3.3.6 and Section 3.3.10, respectively).
- 32 In summary, this Report suggests the presence of 27 non-compliances concerning the NC RfG that correspond to the 15 Member States highlighted in Figure 3. Figure 3 indicates the number of issues analysed; the bars in green refer to remedied compliance issues, whereas the areas in blue refer to the remaining non-compliances. As an outcome of this assessment, NL no longer demonstrates compliance issues concerning the NC RfG.
- 33 The above assessments are based on the detailed evaluation of responses provided by NRAs presented in the following section.

<sup>24</sup> Recognising exhaustive clarifications provided by BNetzA (DE), CNMC (ES), EV (FI), RAE (GR), CRU (IE) ACM (NL), ERSE (PT) and Ei (SE).

<sup>25</sup> With respect to the information provided in the IMR on the NC RfG by the relevant NRA.

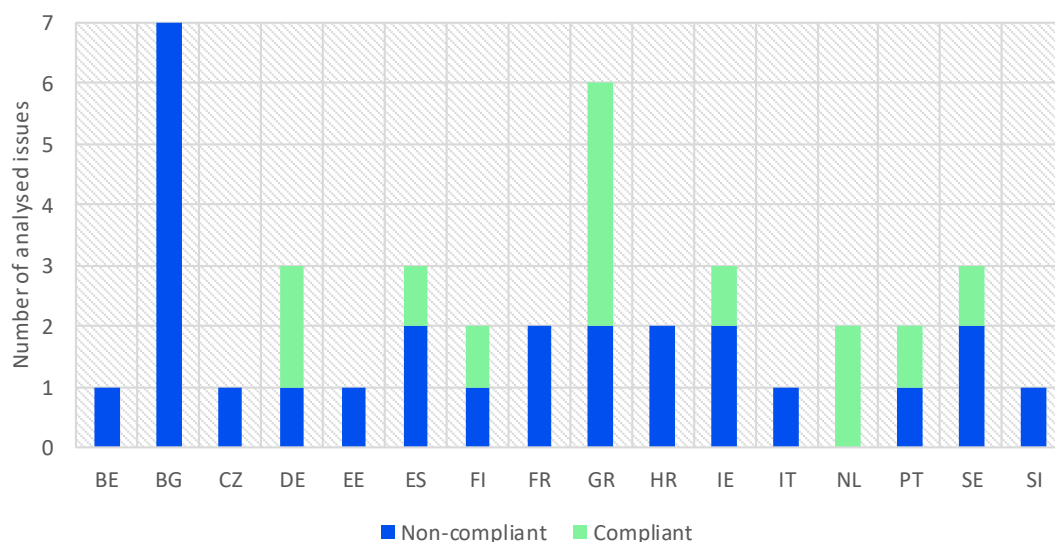


Figure 3. Number of remaining and remedied compliance issues by Member State

### 3.3 Assessment of the NRAs’ clarifications concerning the NC RfG

34 The analysis and the outcomes published in the previous IMRs on the NC RfG identified seven topics (listed from #A to #G), referring to corresponding provisions of the NC RfG, whose implementation was reported as still pending. A comprehensive list of these topics along with any missing reply from the NRAs is presented in Section 3.3.1.

35 Pursuant to the identification of an outstanding implementation of certain provisions of the NC RfG, ACER requested the concerned NRAs to provide an update in accordance with paragraph (13). The analyses of the information received from each individual NRA are presented in Sections 3.3.2-3.3.16.

36 Each section consists of a table that includes:

- the monitoring topic(s) as listed in Section 3.3.1,
- the information provided by the concerned NRA in the IMR on the NC RfG with the reference to the relevant section in the IMR,
- the feedback provided by the NRA, and
- ACER's views with respect to the information received.

#### 3.3.1 Outstanding implementation concerning the NC RfG

- **TOPIC #A: Approval of the requirements of general application**

37 Article 7(1) of the NC RfG establishes that the requirements of general application shall be set by relevant system operators or TSOs, while the entity designated by the Member State (e.g., the NRA) is responsible for their approval. The 2<sup>nd</sup> and 3<sup>rd</sup> IMRs on the NC RfG revealed that three

NRAs did not formally approve<sup>26</sup> or only partially approved<sup>27</sup> the requirements of general applications. Therefore, ACER asked the relevant NRAs to report any update concerning the approval. However, one NRA (i.e., EWRC (BG)) did not provide a relevant update.

- **TOPIC #B: Definition of the deadline concerning Article 4(2)(b)**

38 Article 4(2) of the NC RfG establishes whether a PGM has to be considered existing or new.<sup>28</sup> In particular, ACER monitored the status of the implementation of a deadline set in Article 4(2)(b). In fact, a PGM, whose owner has concluded a final and binding contract for the purchase of the main generating plant by two years after the entry into force of the NC RfG, shall be considered as *existing*, thus not subject to the provisions of the NC RfG.

39 In accordance with the information presented in Section 3 of the 3<sup>rd</sup> IMR on the NC RfG, relevant clarifications were requested from EWRC (BG), BNetzA (DE), CRE (FR) and RAE (GR). Only BNetzA (DE) and RAE (GR) clarified their positions to ACER.

- **TOPIC #C: Parameters' variation compared to the values in the NC RfG**

40 In Section 4.2.1 of the 3<sup>rd</sup> IMR on the NC RfG, three NRAs<sup>29</sup> reported the approval of certain requirements of general application, whose value/condition happens to be stricter or looser than the most or least onerous related threshold. Relevant information concerning the implemented parameters of the requirements of general application were not made available to ACER by EWRC (BG) and RAE (GR). Although all the five NRAs were requested to provide relevant updates, ACER did not receive answer from one of them (EWRC (BG)).

- **TOPIC #D: Presence of additional requirements on frequency or voltage in the national regulation**

41 In accordance with the outcomes presented in Sections 4.2.2 and 4.7 of the 3<sup>rd</sup> IMR on the NC RfG, six NRAs<sup>30</sup> confirmed the approval in the corresponding national regulations of requirements concerning voltage and frequency which are additional to those exhaustively defined in the NC RfG.<sup>31</sup> These NRAs were requested to provide an update in accordance with paragraph (13). Moreover, due to the lack of information concerning the requirements of general application in GR and in BG, the corresponding NRAs were also requested to provide ACER with an update on TOPIC #D.

42 ACER did not receive answer from EWRC (BG).

- **TOPIC #E: Operational notification procedure for PGMs' connection**

43 In the 3<sup>rd</sup> IMR on the NC RfG, NRAs were asked to provide the publicly available reference of the details of the operational notification procedure, pursuant to Article 29(2).<sup>32</sup> The information provided by CRU (IE), Ei (SE) and AGEN-RS (SI) and presented in Section 5.2 of the 3<sup>rd</sup> IMR on the NC RfG revealed that the operational notification procedure in the corresponding Member

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<sup>26</sup> EWRC (BG) and CNMC (ES).

<sup>27</sup> ACM (NL).

<sup>28</sup> The former would not fall under the scope of application of the NC RfG, the latter instead has to comply with the applicable provisions of the NC RfG based on its type-classification.

<sup>29</sup> CREG (BE), BNetzA (DE) and CRU (IE).

<sup>30</sup> ERO (CZ), BNetzA (DE), EV (FI), ARERA (IT), ERSE (PT) and Ei (SE).

<sup>31</sup> E.g., additional binding requirements that refer to a range of values beyond the maximum/minimum thresholds defined in the NC RfG.

<sup>32</sup> As stipulated in Article 29(1) of the NC RfG, the power-generating facility owner is to demonstrate to the relevant system operator that it has complied with the requirements set out in the relevant provisions of the NC RfG by completing successfully the operational notification procedure for connection of PGMs. The details of this procedure shall be clarified and made publicly available by the relevant system operators (Article 29(2)).

States has not been implemented in their national grid codes yet. Moreover, ACER identified a lack of relevant information with regard to BG.

- **TOPIC #F: Notification of permanent decommissioning of type A PGMs**

44 Pursuant to Article 30(3), a power-generating facility owner has to ensure that the relevant system operator or the competent authority of the Member State is notified about the permanent decommissioning of a type A PGM in accordance with national legislation. The summary of the relevant implementation monitoring activity carried out by ACER has been included in Section 5.3 of the 3<sup>rd</sup> IMR on the NC RfG.

45 Based on the information shared by the corresponding NRAs, the implementation of Article 30(3) was deemed as incomplete with regard to EE, FI, HR, IE and NL. No information was made available by EWRC (BG) and RAE (GR). For the purpose of this Report, ACER sought an update from seven NRAs but did not receive information from EWRC (BG) and HERA (HR).

- **TOPIC #G: Amendment of contracts and general terms and conditions**

46 In Section 6.2 of the 3<sup>rd</sup> IMR on the NC RfG, ACER presented the feedback from NRAs concerning the implementation of Article 71 regulating the amendment of contracts and general terms and conditions.<sup>33</sup> Besides the lack of information concerning BG and GR, the NRAs from ES, FR, PT and SE reported that the implementation of Article 71 was incomplete.

47 Pursuant to ACER's request, CRE (FR), RAE (GR), ERSE (PT) and Ei (SE) provided a clarification on the current status of the implementation of Article 71.

### 3.3.2 Belgium (CREG)

48 With respect to the NC RfG, the information reported by CREG (BE) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 2.

Table 2. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by CREG

TOPIC #C: Parameters' variation compared to the values in the NC RfG	
From the 3 <sup>rd</sup> ed. IMR, Section 4.2.1, para. (84)	
<p><i>"CREG (BE) reported that looser requirements are applicable to gas turbines and internal combustion engines<sup>34</sup> whose technical specifications may not allow to follow the default requirements described in Article 15(2)(c) of the NC RfG. Alternatively, the following requirements are applicable considering the PGM's maximum capacity "P<sub>max</sub>":</i></p> <ul style="list-style-type: none"> <li>- <math>P_{max} \leq 2 \text{ MW}</math>, at least 1,11% <math>P_{max}</math> per second (increasing or decreasing frequency);</li> <li>- <math>P_{max} &gt; 2 \text{ MW}</math>, at least 0,33% of <math>P_{max}</math> per second (increasing or decreasing frequency)"</li> </ul>	
NRA's update	ACER's view
CREG confirmed that the compliance issue remains unresolved.	ACER deems that BE remains non-compliant concerning TOPIC #C.

<sup>33</sup> According to this provision, regulatory authorities shall ensure that all relevant clauses in contracts and general terms and conditions relating to the grid connection of new PGMs are brought into compliance with the requirements of the NC RfG.

<sup>34</sup> The differences apply to both the types of PGMs mentioned and whose voltage level is below or equal 70 kV.

### 3.3.3 Czech Republic (ERO)

- 49 With respect to the NC RfG, the information reported by ERO (CZ) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 3.

Table 3. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by ERO

<b>TOPIC #D: Presence of additional requirements on frequency in the national regulation</b>	
From the 3 <sup>rd</sup> IMR on NC RfG, Section 4.2.2, para. (91)	
<i>“ERO (CZ) confirmed the implementation of requirements relative to an additional frequency range, since a time period for operation of 20 seconds has been approved for the range [47 - 47.5] Hz”</i>	
NRA’s update	ACER’s view
ERO will seek to cooperate with distribution system operators (DSOs) in order to bring frequency bands into a line with the NC RfG. For additional requirements, it will remain mandatory for PGMs up to 800 W, while for PGMs with higher capacity it will be a recommended value for concluding agreement (according to Article 13 (1)(a)(ii) of the NC RfG	ACER acknowledges that the prospective plan would contribute to the solution of the presented issue. However, ACER deems that CZ remains non-compliant concerning TOPIC #D.

### 3.3.4 Germany (BNetzA)

- 50 With respect to the NC RfG, the information reported by BNetzA (DE) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 4.

Table 4. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by BNetzA

<b>TOPIC #B: Definition of the deadline concerning Article 4(2)(b)</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 3.3, para. (70)	
<i>“BNetzA (DE) has specified that the German Parliament postponed the deadline [...] through the adoption of the Article 118(25) German Energy Act. [...] The new deadline has been set to 31 December 2020”</i>	
NRA’s update	ACER’s view
BNetzA reported that the coronavirus disease (COVID-19) pandemic crisis allowed to extend the deadline of Article 4(2)(b) up to 31/12/2020.	ACER considers the issue to be fully addressed.
<b>TOPIC #C: Parameters’ variation compared to the values in the NC RfG</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 4.2.1, para. (85)-(86)	



*“It is shown in the relevant figures provided by BNetzA (DE) that the time period for operation for these units [type B and type C PGMs], is reduced to 60 second if the voltage falls in the ranges [0.85-0.9] p.u. and [1.10-1.15] p.u.”*

NRA's update	ACER's view
<p>BNetzA is of the opinion that Article 13(1)(a)(ii) of the NC RfG allows for conditioning minimum time periods laid down in Table 2 upon voltage ranges. It also believes that looser onerous time periods do not adversely affect any stakeholders and therefore is compliant with the minimum requirements laid down in the NC RfG.</p> <p>On top of that, producers and owners of PGMs, which are capable of operating within the frequency ranges and time periods specified in Table 2 of Article 13, do not face any market entry barrier.</p>	<p>ACER deems the clarification from BNetzA not exhaustive since the claims concerning the absence of any market entry barrier are not supported by a quantitative analysis.</p> <p>The deviations from the values in the NC RfG, in accordance with the Article cited by BNetzA, refer to local situations and cannot represent the standard. Also, they require the agreement of the system operator and of the PGM owner.</p> <p>Moreover, looser onerous time periods may be neutral or beneficial for stakeholders (including relevant system operator) at local level but they may have a cross-border impact, affecting the security and coordination of the EU-wide network.</p> <p>Hence, ACER deems that DE remains non-compliant concerning TOPIC #C.</p>

**TOPIC #D: Presence of additional requirements on frequency in the national regulation**

**From the 3<sup>rd</sup> ed. IMR, Sections 4.2.2. and 4.7, para. (91) and (124)**

1. *“BNetzA (DE) confirmed that type A PGMs shall fulfil requirements regarding the Fault Ride Through (‘FRT’) capability. Additionally, type A and/or type B PGMs shall fulfil requirements regarding LFSM-U capability”*
2. *“BNetzA (DE) extended the application of the requirements of general application to all the storage technologies, whilst Article 3(2)(d) of the NC RfG limits the scope of application of the NC RfG to pump-storage PGMs”*

NRA's update	ACER's view
<p>BNetzA takes the view that it is not forbidden under the NC RfG to apply stricter requirements. BNetzA argues that the NC RfG aims at establishing harmonised rules for grid connection for power-generating modules in order to ensure system security and in order to facilitate the integration of renewable electricity sources (Recital 3 of NC RfG). Both aims are enhanced by the stricter measures applied in DE. BNetzA argues that furthermore, Union-wide trade in electricity (Recital 3 of NC RfG) is not hampered by more stringent rules for generators.</p> <p>In BNetzA opinion the fact that in DE the application of some requirements of general application is extended to all the storage technologies, whilst Article 3(2)(d) of the NC RfG limits the scope of application of the NC</p>	<p>Considering the input provided by BNetzA, ACER acknowledges that the requirements regarding Fault Ride Through capability laid down for the type A PGMs were established in accordance with Article 7(3)(f) of the NC RfG.</p> <p>Hence, ACER deems that DE is compliant with the NC RfG concerning TOPIC #D.</p>

<p>RfG to pump-storage PGMs, is not a case for non-compliance with the RfG. If a subject-matter is explicitly left out of scope of Union law, by definition, its regulation under national law may not infringe Union law.</p> <p>Furthermore, BNetzA confirmed that the FRT requirements to Type A PGMs was implemented in the German national law via reference to the relevant standard.</p>	
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### 3.3.5 Estonia (ECA)

- 51 With respect to the NC RfG, the information reported by ECA (EE) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 5.

Table 5. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by ECA

<p><b>TOPIC #F: Notification of permanent decommissioning of type a PGMs</b></p>	
<p>From the 3<sup>rd</sup> ed. IMR, Section 5.3, para. (140)</p>	
<p><i>“[ECA] did not indicate a national legislation relevant to the notification of the decommissioning of a type A PGM”</i></p>	
<p><b>NRA’s update</b></p>	<p><b>ACER’s view</b></p>
<p>ECA explained that there is no specific national legislation that pertains to that issue. It expressed the view that there is no mechanism in RfG, which would force the owners of type A PGMs to notify about the permanent decommissioning of such a module.</p>	<p>ACER understands ECA’s feedback. However, Article 30(3) imposes the obligations on:</p> <ul style="list-style-type: none"> <li>- power-generating facility owners to ensure that the relevant system operator or the competent authority of the Member State is notified about the permanent decommissioning of a power-generating module in accordance with national legislation; and</li> <li>- relevant system operators to ensure that notifications by the power-generating facility owners of permanent decommissioning of type A PGMs can be made by third parties, including aggregators.</li> </ul> <p>ACER deems that EE remains non-compliant concerning TOPIC #F.</p>

### 3.3.6 Spain (CNMC)

- 52 With respect to the NC RfG, the information reported by CNMC (ES) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 6.

Table 6. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by CNMC

<b>TOPIC #A: Approval of the requirements of general application</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.2.3, para. (78)	
<i>“the implementation process is incomplete in [...] ES, since the corresponding competent entities have not formally approved the proposals (which have been already submitted by the relevant system operators or TSOs)”</i>	
NRA’s update	ACER’s view
Requirements of general application were approved in 2020.	Based on CNMC input, ACER deems that ES is compliant with the NC RfG concerning TOPIC #A.
<b>TOPIC #D: Presence of additional requirements on frequency/voltage in the national regulation</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 4.7, para. (128)	
<i>“Concerning the answers of [CNMC], no additional requirements have been implemented”</i>	
NRA’s update	ACER’s view
CNMC declared that additional requirements on frequency/voltage are present in the national regulation.	The feedback provided by CNMC confirms the lack of compliance with the NC RfG. ACER deems that ES is non-compliant concerning TOPIC #D.
<b>TOPIC #G: Amendment of contracts and general terms and conditions</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 6.2, para. (157)	
<i>“The analysis of the collected answers revealed that [...] CNMC (ES) [has] not implemented any specific modality to implement Article 71(1)”</i>	
NRA’s update	ACER’s view
(No reply was provided)	ACER deems that ES remains non-compliant concerning TOPIC #G.

### 3.3.7 Finland (EV)

- 53 With respect to the NC RfG, the information reported by EV (FI) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 7.

Table 7. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by EV

TOPIC #D: Presence of additional requirements on voltage in the national regulation	
From the 3 <sup>rd</sup> ed. IMR, Section 4.7, para. (124)	
<i>"EV (FI) sets additional requirements concerning the voltage control and the power quality. The detailed answer of EV (FI) is included in Section 3 of Annex I and provides relevant web links and further insights"</i>	
NRA's update	ACER's view
EV confirmed that there are a few specifying national requirements concerning the requirements or instructions for voltage control. In EV understanding, the few specifying requirements concerning the voltage control for type D PGMs are allowed according to the RfG and have not violated the Network Code. The detailed answer of EV is included in Table 32 below.	Based on EV input, ACER deems that FI is compliant concerning TOPIC #D.
TOPIC #F: Notification of permanent decommissioning of type A PGMs	
From the 3 <sup>rd</sup> ed. IMR, Section 5.3, para. (141)	
<i>"EV (FI) reported the lack of a specific legislation concerning the notification of the permanent decommissioning of type A PGMs. However, it is worth noting that EV (FI) verifies the terms of connection service for TSO and the notification of the permanent decommissioning of the type A PGM by the power-generating facility owner. Thus, the notification process is mandatory for both the TSO and the connected PGM by means of a contract with the TSO"</i>	
NRA's update	ACER's view
EV reported that there is national legislation about the notification. However, those provisions concern only power plants of at least 1 MVA, as the national legislation has considered that the notification procedure is not necessary for installations with less than 1 MVA. Nevertheless, EV argues that the current national legal framework complies with the Article 30(3).	According to Article 30(3), the power-generating facility owner shall ensure that the relevant system operator or the competent authority of the Member State is notified about the permanent decommissioning of a type A PGM. Hence, the national legislation, which does not envisage the notification mentioned above, does not allow the owner to meet the requirements stipulated in Article 30(3). Therefore, ACER deems that FI remains non-compliant concerning TOPIC #F.

### 3.3.8 France (CRE)

- 54 With respect to the NC RfG, the information reported by CRE (FR) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 8.

Table 8. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by CRE

<b>TOPIC #B: Definition of the deadline concerning Article 4(2)(b)</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 3.3, para. (71)	
<i>“The implementation of the provisions laid down in Article 4(2), concerning the determination of PGMs as existing or new, has not been completed yet in FR, as communicated by CRE (FR)”</i>	
NRA’s update	ACER’s view
(No reply was provided)	ACER deems that FR remains non-compliant concerning TOPIC #B.
<b>TOPIC #G: Amendment of contracts and general terms and conditions</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 6.2, para. (157)	
<i>“The analysis of the collected answers revealed that CRE (FR) [...] [has] not implemented any specific modality to implement Article 71(1)”</i>	
NRA’s update	ACER’s view
CRE confirmed that the new models of connection agreements are expected in October 2021.	ACER understands that the process is close to finalisation. ACER deems that concerning TOPIC #G FR will only be compliant after the implementation of Article 71(1) is completed.

### 3.3.9 Greece (RAE)

- 55 As reported in Section 1.3 of the 3<sup>rd</sup> IMR on the NC RfG, RAE (GR) provided ACER with two communications concerning the high-level status of the implementation of the NC RfG. RAE’s input allowed ACER to ascertain that GR is compliant concerning TOPIC #A.
- 56 However, information reported by RAE pursuant to ACER’s request in accordance with paragraph (13) allowed to ascertain the implementation status in GR, as summarised in Table 9.

Table 9. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by RAE

<b>TOPIC #B: Definition of the deadline concerning Article 4(2)(b)</b>	
NRA’s update	ACER’s view
RAE indicated that the deadline concerning Art. 4(2)(b) is 17/11/2018.	Although RAE did not provide specific information on the decision postponing the

	<p>timeline in Article 4(2)(b) by six months, ACER acknowledges that the deadline was defined. Hence, ACER deems that GR is compliant with NC RfG concerning TOPIC #B.</p>
<b>TOPIC #C: Parameters' variation compared to the values in the NC RfG</b>	
<b>NRA's update</b>	<b>ACER's view</b>
<p>RAE reported that all parameters are in line with the values in the NC RfG.</p>	<p>Based on RAE input, ACER deems that GR is compliant with the NC RfG concerning TOPIC #C.</p>
<b>TOPIC #D: Presence of additional requirements on voltage in the national regulation</b>	
<b>NRA's update</b>	<b>ACER's view</b>
<p>REA confirmed that there are no additional requirements in the national regulation concerning voltage and frequency.</p>	<p>Based on RAE input, ACER deems that GR is compliant with the NC RfG concerning TOPIC #D.</p>
<b>TOPIC #E: Operational notification procedure for PGMs' connection</b>	
<b>NRA's update</b>	<b>ACER's view</b>
<p>REA stated that the operational notification procedure is under development by the TSO.</p>	<p>The implementation of Article 29(2) has started but formal changes to the national regulation have not been made in GR yet. ACER deems that GR is non-compliant concerning TOPIC #E.</p>
<b>TOPIC #F: Notification of permanent decommissioning of type A PGMs</b>	
<b>NRA's update</b>	<b>ACER's view</b>
<p>RAE reported that the permanent decommissioning of type A PGMs is notified to the DSO and indirectly notified to the NRA (RAE) through the permitting procedures (permit revocation). Furthermore, RAE indicated that the revision and update of the current rules is needed.</p>	<p>According to the information received, ACER considers that the requirements of Article 30(3) have been met in GR. Hence, ACER deems that GR is compliant with the NC RfG concerning TOPIC #F.</p>
<b>TOPIC #G: Amendment of contracts and general terms and conditions</b>	
<b>NRA's update</b>	<b>ACER's view</b>
<p>RAE confirmed a partial implementation concerning Article 71, stating that no major changes compared to the previous practice followed the implementation of the NC RfG.</p>	<p>The answer provided by RAE does not contain any details on the implementation of Article 71. Based on NRA's statement, ACER deems that GR is non-compliant concerning TOPIC #G.</p>

Furthermore, RAE reported that a revision and update is planned in order to enforce transparency.	
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### 3.3.10 Croatia (HERA)

- 57 In Section 4.7 of the 3<sup>rd</sup> IMR on the NC RfG, HERA (HR) reported the absence of additional requirements compared to those envisaged in the NC RfG. However, at a later time, the NRA has updated ACER about the presence in the national legislation of an additional requirement concerning voltage. Further information is provided in Table 10.

Table 10. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by HERA

<b>TOPIC #D: Presence of additional requirements on voltage in the national regulation</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 4.7, para. (128)	
<i>“Concerning the answers of [HERA], no additional requirements have been implemented”</i>	
NRA’s update	ACER’s view
HERA reported that for voltages above 1.10 p.u. (range between 1.10-1.15 p.u.) type D PGMs shall stay connected for 60 minutes. The NRA is committed to monitor the effect of this parameter and confirmed that it would aim at removing it from the national regulatory framework in the future.	The feedback provided by HERA confirms the lack of compliance with Table 6.1 of Article 16 (for type D PGMs). ACER deems that HR is non-compliant concerning TOPIC #D.
<b>TOPIC #F: Notification of permanent decommissioning of type A PGMs</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 5.3, para. (140)	
<i>“[HERA] did not indicate a national legislation relevant to the notification of the decommissioning of a type A PGM”</i>	
NRA’s update	ACER’s view
(No reply was provided)	ACER deems that HR remains non-compliant concerning TOPIC #F.

### 3.3.11 Ireland (CRU)

58 With respect to the NC RfG, the information reported by CRU (IE) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 11.

Table 11. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by CRU

<b>TOPIC #C: Parameters’ variation compared to the values in the NC RfG</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 4.2.1, para. (88)	
<i>“CRU (IE) confirmed that the implementation of the frequency ranges is not fully aligned with the provisions of the NC RfG since the national grid code widens the first and last frequency interval compared to the values in Table 2 of Article 13 of the NC RfG. In particular, the lowest value of the first interval is 47 Hz instead of 47.5 Hz, whereas the highest value of the last interval is 52 Hz instead of 51.5 Hz”</i>	
NRA’s update	ACER’s view
<p>CRU confirmed that the introduction of wider frequency ranges was requested by the TSO to ensure the security of the system. It also noted that the TSO is considering the amendment of the national legislation to make it comply with the NC RfG.</p> <p>NRA declared that the relevant TSO requested that the extended frequency requirements were included in the next iteration of the RfG.</p>	<p>ACER considers the actions reported by CRU as leading towards possible remedy of the identified non-compliance.</p> <p>However, this requires the formal amendment of the relevant rules.</p> <p>ACER deems that IE remains non-compliant concerning TOPIC #C.</p>
<b>TOPIC #E: Operational notification procedure for PGMs’ connection</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 5.2, para. (137)	
<i>“The analysis of the answers provided by CRU (IE) [...] showed that the operational notification procedure in the relevant MS has not been implemented in the national grid codes yet”</i>	
NRA’s update	ACER’s view
<p>CRU reported that the TSO and the relevant system operators agreed on the process for bringing the national legislation into compliance with Article 29(2) of the NC RfG.</p> <p>The operational notification procedure was approved by CRU.</p> <p>Moreover, CRU expects to approve amendments submitted by system operators before the end of June 2021.</p>	<p>Based on the CRU input, ACER deems that IE is compliant with the RfG concerning TOPIC #E.</p>
<b>TOPIC #F: Notification of permanent decommissioning of type A PGMs</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 5.3, para. (140)	



*“CRU (IE) explained that such notification [of the decommissioning of a type A PGM] is going to be implemented soon in national legislations”*

NRA's update	ACER's view
<p>CRU reported that the TSO and the relevant system operators agreed on the process for bringing the national legislation into compliance with Article 30(3) of the NC RfG.</p> <p>However, CRU confirmed that the procedure is not yet in place.</p>	<p>ACER considers the actions reported by CRU as leading towards possible remedy of the identified non-compliance.</p> <p>However, this requires the formal amendment of national legislation.</p> <p>ACER deems that IE remains non-compliant concerning TOPIC #F.</p>

### 3.3.12 Italy (ARERA)

- 59 With respect to the NC RfG, the information reported by ARERA (IT) pursuant to ACER's request in accordance with paragraph (13) are summarised in Table 12.

Table 12. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by ARERA

<b>TOPIC #D: Presence of additional requirements on voltage in the national regulation</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 4.7, para. (125)	
<i>“ARERA (IT) confirmed the inclusion of additional requirements for PPMs. In addition to the under-voltage ride-through capability (UVRT), ARERA also defined the over-voltage ride through capability (OVRT). In addition, the Italian NRA excluded PPMs from the application of Article 13(4) of the NC RfG. Hence, for these units, any active power reduction from maximum output due to under-frequency is not admissible, with ad hoc exemptions defined in the Operational Agreement”</i>	
NRA's update	ACER's view
<p>ARERA explained that the exclusion of PPMs from the application of Article 13(4) is not a hard constraint in the Italian regulation. In ARERA's view, the active power reduction in case of falling frequency shall be justified by technical reasons: ARERA assumes that no technical reasons usually apply for PPMs, but if any technical reasons are provided, the reduction will be allowed.</p> <p>ARERA confirmed the application of the over-voltage ride-through capability (OVRT) to PPMs, in addition to the requirements envisaged in the NC RfG for these units. This choice was adopted in continuity with the historical approach applied so far.</p> <p>ARERA will propose amendments to the NC RfG in order to integrate such requirement in the EU Regulation.</p>	<p>ACER acknowledges the justifications provided by ARERA concerning Article 13(4).</p> <p>However, since the OVRT capability remains a binding requirement for Italian PPMs to comply with, ACER deems that IT remains non-compliant concerning TOPIC #D.</p>

### 3.3.13 The Netherlands (ACM)

- 60 With respect to the NC RfG, the information reported by ACM (NL) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 13.

Table 13. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by ACM

<b>TOPIC #A: Approval of the requirements of general application</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.2.3, para. (67)	
<i>“ACM (NL) has not approved all the requirements yet. The decision is still pending concerning the Rate of Change of Frequency (RoCoF) and reactive-power requirements for type B, C and D PGMs”</i>	
NRA’s update	ACER’s view
On 13 September 2021 ACM published decisions concerning Rate of Change of Frequency in accordance with Article 13(1)(b) and reactive-power requirements for type B, C and D synchronous PGMs in accordance with Articles 17(2), 18(2) and 19(1).	ACER considers that NL complies with the NC RfG on TOPIC #A.
<b>TOPIC #F: Notification of permanent decommissioning of type A PGMs</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 5.3, para. (140)	
<i>“[ACM] did not indicate a national legislation relevant to the notification of the decommissioning of a type A PGM”</i>	
NRA’s update	ACER’s view
ACM provided clarifications about the national legislation on the notification of permanent decommissioning of type A PGMs. Notification is done through a digital platform called CERES.	ACER considers that NL complies with the NC RfG on TOPIC #F.

### 3.3.14 Portugal (ERSE)

- 61 With respect to the NC RfG, the information reported by ERSE (PT) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 14.

Table 14. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by ERSE

<b>TOPIC #D: Presence of additional requirements on voltage in the national regulation</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 4.7, para. (127)	
<i>“ERSE (PT) confirmed that the relevant national legislation requires that type A PGMs with maximum capacity of 15 kW or higher shall demonstrate fault-ride-through capability. Note that the NC RfG does not make the compliance with this capability mandatory for type A PGMs”</i>	

NRA's update	ACER's view
ERSE confirmed that the FRT requirement for type A PGMs is based on the relevant European standard.	Considering the input provided by ERSE, ACER acknowledges that the requirements regarding Fault Ride Through capability laid down for the type A PGMs were established in accordance with Article 7(3)(f) of the NC RfG. Hence, ACER deems that PT is compliant with the NC RfG concerning TOPIC #D.
<b>TOPIC #G: Amendment of contracts and general terms and conditions</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 6.2, para. (158)	
<i>"ERSE (PT) stated that this issue will be addressed in an ongoing review project that will ensure that all relevant clauses in contracts, general terms and conditions relating to grid connection of new generator modules are adapted to the requirements of the NC RfG"</i>	
NRA's update	ACER's view
ERSE stated that new PGMs connecting to the network shall comply with the requirements of the NC RfG.	The answer provided by ERSE does not refer to any practical explanation on the implementation of Article 71(1) of the NC RfG. Therefore, ACER deems that PT remains non-compliant concerning TOPIC #G.

### 3.3.15 Sweden (Ei)

- 62 With respect to the NC RfG, the information reported by Ei (SE) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 15.

Table 15. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by Ei

<b>TOPIC #D: Presence of additional requirements on frequency/voltage in the national regulation</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 4.7, para. (126)	
<i>"Ei (SE) included additional requirements concerning PPMs concerning Article 13(2)(g) of the NC RfG, and other requirements related to Article 14(3)(a)(v) of the NC RfG. Moreover, requirements for type D PPM laid down in a list of Articles of the NC RfG are also extended to type B and type C in accordance with the preceding Swedish secondary legislation (for existing PPM)"</i>	
NRA's update	ACER's view
Ei corrected its previous statement highlighting that the requirements concerning Article 13(2)(g) and Article 14(3)(a)(v) have been applied in line with the NC RfG. Ei also clarified that the additional requirements introduced by the Swedish secondary legislation apply only to the PGMs that fall outside the scope of the RfG as per Article 3(1).	ACER acknowledges the Ei's clarification concerning Articles 13(2)(g) and 14(3)(a)(v). Furthermore, ACER understands that the additional requirements indicated by the NRA are relevant only to the PGMs that are out of scope of the NC RfG. ACER deems that SE is compliant with the NC RfG concerning TOPIC #D.

<b>TOPIC #E: Operational notification procedure for PGMs' connection</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 5.2, para. (137)	
<i>"The analysis of the answers provided by Ei (SE) [...] showed that the operational notification procedure in the relevant MS has not been implemented in the national grid codes yet"</i>	
NRA's update	ACER's view
An action plan, envisaging the collaboration between the Ei and the TSO (partially also the DSOs) towards the implementation of Articles 29(2) was communicated to ACER.	The action plan concerning the implementation of Article 29(2) has just started and formal changes to the national regulation have not been made yet. ACER deems that concerning TOPIC #E SE will only be compliant after the implementation of the operational notification procedure is completed.
<b>TOPIC #G: Amendment of contracts and general terms and conditions</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 6.2, para. (157)	
<i>"Ei (SE) reported that the development of a specific modality has not started. However Ei (SE) plans to supervise this process which is expected to start by the end of 2020"</i>	
NRA's update	ACER's view
An action plan, envisaging the collaboration between the Ei and the TSO (partially also the DSOs) towards the implementation of Articles 71(1) was communicated to ACER.	The action plan concerning the implementation of Article 71(1) has just started and formal changes to the national regulation have not been made yet. ACER deems that concerning TOPIC #G SE will only be compliant after the implementation of the relevant provisions is completed.

### 3.3.16 Slovenia (AGEN-RS)

- 63 With respect to the NC RfG, the information reported by AGEN-RS (SI) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 16.

Table 16. Summary of the follow-up monitoring activities concerning implementation of the NC RfG by AGEN-RS

<b>TOPIC #E: Operational notification procedure for PGMs' connection</b>	
From the 3 <sup>rd</sup> ed. IMR, Section 5.2, para. (137)	
<i>"The analysis of the answers provided by AGEN-RS (SI) [...] showed that the operational notification procedure in the relevant MS has not been implemented in the national grid codes yet"</i>	
NRA's update	ACER's view

AGEN-RS reported that the new national grid code for distribution system has been adopted, and provided publicly available reference (included in Annex I, part A). It implements an operational notification procedure for types A, B and C PGMs.

Operation notification procedure for type D PGMs will be included in the national transmission grid code that the TSO has not yet updated. This update is expected to be issued as soon as possible but not before the adoption of the new national Law on electricity supply.

Based on the information received from AGEN-RS, ACER considers that SI complies with the NC RfG regarding the publication of operational notification procedure for types A, B and C PGMs.

However, ACER deems that SI remains non-compliant concerning the implementation of operational notification procedure for type D PGMs.

## 4. Status of the implementation of the NC DC and NC HVDC

### 4.1 Overall picture

- 64 The overall status of the implementation of the NC DC and NC HVDC as per the previous editions of the IMRs is shown in Figure 4.
- 65 The areas in green refer to the eight Member States (32% of the monitored Member States) where the NC DC and NC HVDC were deemed to be fully implemented.<sup>35</sup> Hence, the NRAs corresponding to these Member States had not been requested by ACER to provide additional information concerning the status of the implementation of the two relevant NCs. On the other hand, the remaining Member States coloured in blue (68% of the monitored Member States) had not duly implemented all the provisions of the NC DC and/or NC HVDC. Concerning the NC DC and NC HVDC and for the purpose of the Report, ACER contacted the relevant NRAs of only the latter Member States, assuming that the full compliance with these NCs has not been lost in the rest of the Member States.

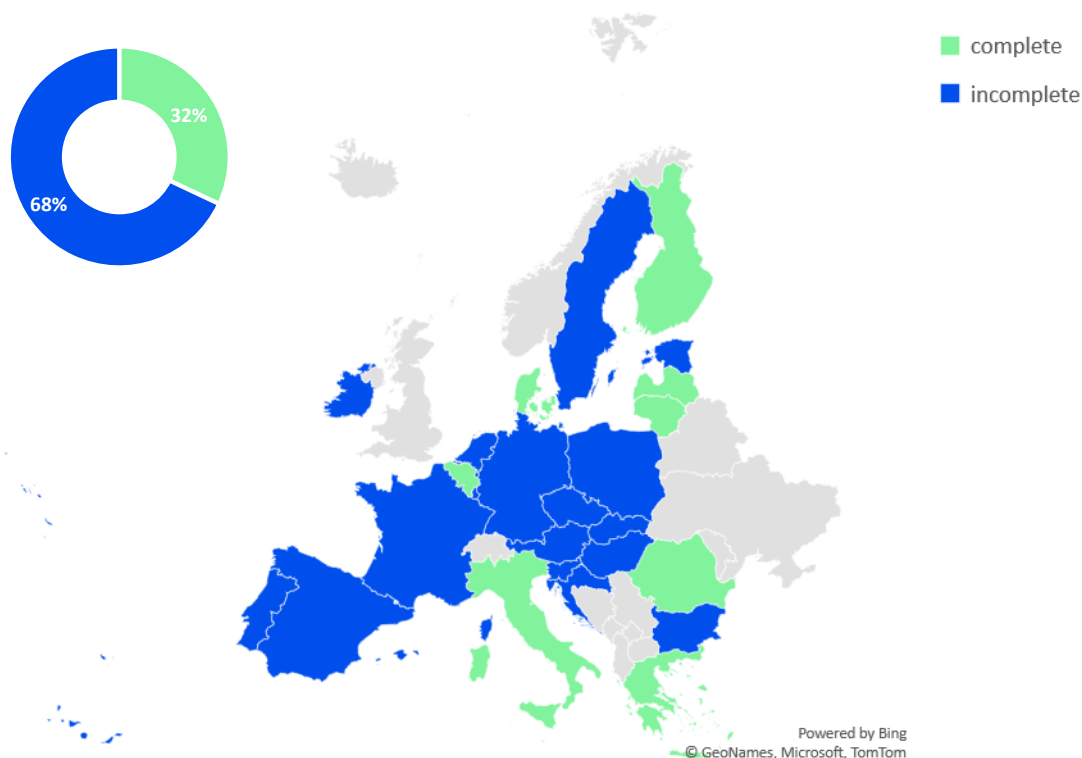


Figure 4. Overall status of implementation of the NC DC & NC HVDC by Member State as presented in IMRs

- 66 The NRAs' responses in full are included in Section B of Annex I.

<sup>35</sup> BE, DK, FI, GR, IT, LT, LV and RO.

- 67 Among the contacted NRAs concerning the NC DC and NC HVDC, three NRAs did not provide answers.<sup>36</sup> ACER may conclude that the situation reported by these NRAs concerning the implementation of the NC DC and NC HVDC and included in the previous IMRs has not changed.
- 68 An overview of NRAs participation in this Report is presented in Table 17. The leftmost column lists the NRAs that were not requested by ACER to provide additional information. In addition, the NRAs included in the central and the rightmost columns were requested to clarify the issues concerning implementing specific provisions of the NC DC and NC HVDC. The NRAs in the central column reported relevant information to ACER. The received information is presented and analysed in Section 4.3 for each NRA. Finally, the NRAs in the rightmost column did not provide any feedback to ACER.

Table 17. NRAs' participation in the follow-up implementation monitoring activities concerning the NC DC and NC HVDC

NRAs that were not requested to provide clarifications (8)	Contacted NRAs concerning the NC DC and NC HVDC	
	NRAs that replied (14)	NRAs that did not reply (3)
CREG (BE), DUR (DK), EV (FI), RAE (GR), ARERA (IT), VERT (LT), PUC (LV), ANRE (RO)	E-Control (AT), ERO (CZ), BNetzA (DE), ECA (EE), CNMC (ES), CRE (FR), CRU (IE), ILR (LU), ACM (NL), URE (PL), ERSE (PT), Ei (SE), AGEN-RS (SI), RONI (SK)	EWRC (BG), HERA (HR), HEA (HU)

## 4.2 Summary of the compliance issues concerning the NC DC and NC HVDC

- 69 The IMR on NC DC and NC HVDC revealed that, in certain Member States, some of the provisions of these NCs have not been implemented at the national level in full compliance with the corresponding EU regulations. Pursuant to ACER's request to NRAs to provide clarifications<sup>37</sup> on the identified compliance issues,<sup>38</sup> Figure 5 provides a high-level summary of the analysis in Section 4.1 and 4.3 concerning the compliance issues relevant the NC DC and NC HVDC.

<sup>36</sup> EWRC (BG), HERA (HR), HEA (HU).

<sup>37</sup> See paragraph (13).

<sup>38</sup> With respect to the topics identified in Section 4.3.1.

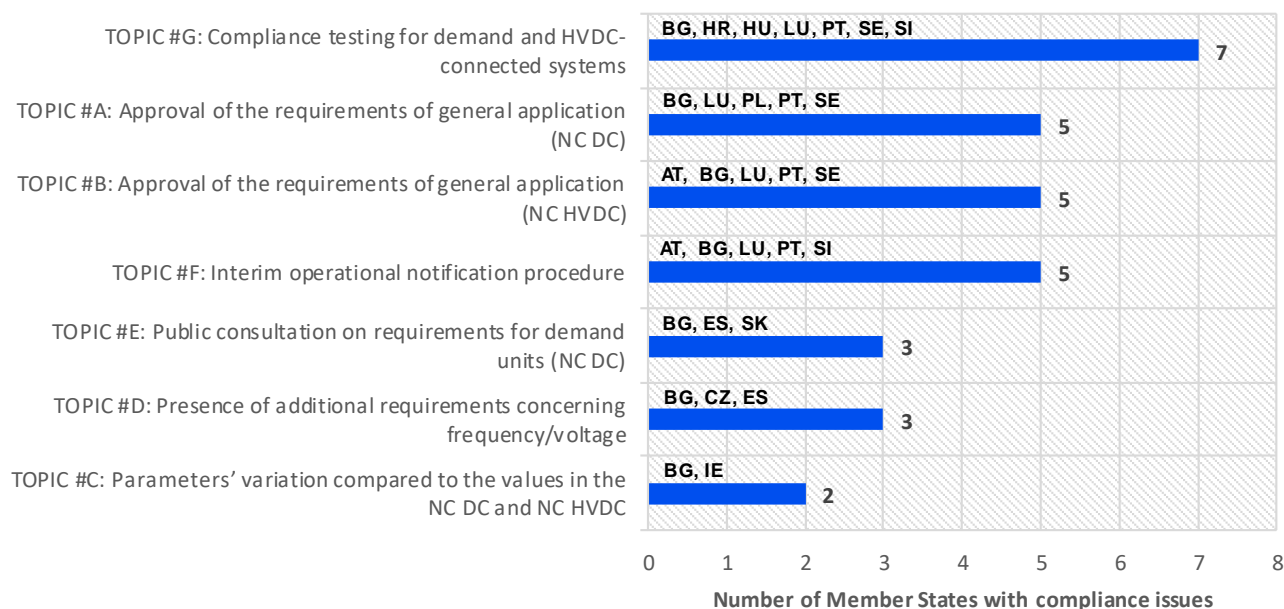


Figure 5. Number of Member States by issues remaining for implementation

- 70 The most recurrent issues that are shown in Figure 5 refer to TOPIC #G, i.e., the implementation of compliance testing for demand and HVDC-connected systems. Non-compliant positions referring to this topic have been identified in seven Member States. On the other hand, Figure 5 also shows that the least recurrent compliance issues refer to TOPIC #C, suggesting that the implementation of the requirements of general applications for the NC DC and NC HVDC is largely respecting the legal provisions.
- 71 ACER considers that most of the responding NRAs did not propose concrete actions or roadmaps in order to foster the full compliance of national regulation with the NC DC and NC HVDC. The last edition of the relevant IMR highlighted the presence of 40 compliance issues from 17 NRAs. Section 4.3 revealed that only 11 of these issues were addressed.<sup>39</sup> Nevertheless, an additional<sup>40</sup> non-compliance has been reported by CNMC (ES) concerning TOPIC #D (see Section 4.3.6).
- 72 In summary, the Report suggests the remaining presence of 30 compliance issues concerning the NC DC and NC HVDC. That corresponds to the 13 Member States out of the 17 highlighted in Figure 6. For each Member State, Figure 6 indicates the number of issues analysed; the bars in green refer to previously identified compliance issues that have been addressed or clarified pursuant to the information shared by relevant NRAs. The areas in blue refer to the remaining compliance issues. As an outcome of this assessment, DE, EE, FR and NL no longer demonstrate compliance issues concerning the NC DC and NC HVDC.
- 73 The above assessments are based on the detailed evaluation of responses provided by NRAs presented in the following section.

<sup>39</sup> Recognising exhaustive clarifications provided by E-control (AT), BNetzA (DE), ECA (EE), CNMC (ES), CRE (FR), ACM (NL) and ERSE (PT).

<sup>40</sup> With respect to the information provided in the IMR on the NC DC and NC HVDC by the relevant NRA.



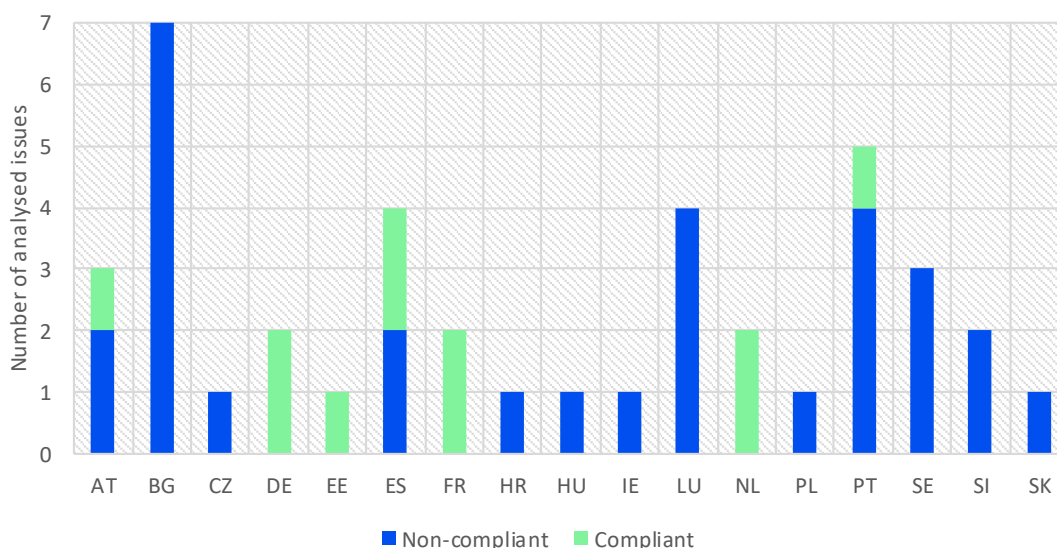


Figure 6. Number of remaining and remedied compliance issues by Member State

### 4.3 Assessment of the NRAs’ clarifications concerning the NC DC and NC HVDC

74 The analysis of NRAs’ inputs in previous joint IMRs on the NC DC and NC HVDC identified seven topics (listed from #A to #G), referring to corresponding provisions of the NC DC and NC HVDC, whose implementation was reported as still pending. The comprehensive list of these topics along with any missing reply from NRAs is presented in Section 4.3.1.

75 Pursuant to the identification of an outstanding implementation of certain provisions of the NC DC and NC HVDC, ACER requested the concerned NRAs to provide an update in accordance with paragraph (13). The analyses of the information received from each individual NRA are presented in Sections 4.3.2-4.3.15.

76 Each section consists of a table which includes:

- the monitoring topic(s) as listed in Section 4.3.1 below,
- the information provided by the concerned NRA in the IMR on the NC DC and/or the NC HVDC with the reference to the relevant section in the IMR,
- the feedback provided by the NRA, and
- ACER's comments/position with respect to the information received.

#### 4.3.1 Outstanding implementation concerning the NC DC and NC HVDC

- **TOPIC #A:** Approval of the requirements of general application (NC DC)

77 Article 6(1) of the NC DC establishes that the requirements of general application shall be set by relevant system operators or TSOs, while the entity designated by the Member State (e.g., the

NRA) is responsible for their approval. The 2<sup>nd</sup> IMR on the NC DC and NC HVDC revealed that eight NRAs did not formally approve<sup>41</sup> or only partially approved<sup>42</sup> the requirements of general application. Therefore, ACER asked the relevant NRAs to report any update concerning the approval. However, two NRAs<sup>43</sup> did not provide a relevant update.

- **TOPIC #B: Approval of the requirements of general application (NC HVDC)**

78 Article 5(1) of the NC HVDC establishes that the requirements of general application shall be set by relevant system operators or TSOs, while the entity designated by the Member State (e.g., the NRA) is responsible for their approval. The 2<sup>nd</sup> IMR on the NC DC and NC HVDC revealed that six NRAs did not formally approve<sup>44</sup> or only partially approved<sup>45</sup> the requirements of general applications. Therefore, ACER asked the relevant NRAs to report any update concerning the approval. However, EWRC (BG) did not provide a relevant update.

- **TOPIC #C: Parameters' variation compared to the values in the NC DC and NC HVDC**

79 In Section 4.7 of the 2<sup>nd</sup> IMR on NC DC and NC HVDC, two NRAs<sup>46</sup> reported the approval of certain requirements of general application, whose value/condition happens to be stricter or looser than the most or least onerous related threshold. Moreover, one NRA (EWRC (BG)) did not provide ACER with any information related to that matter. Out of the three NRAs requested to provide relevant updates, ACER did not receive answers from EWRC only.

- **TOPIC #D: Presence of additional requirements concerning frequency/voltage in the national regulation**

80 In accordance with the outcomes presented in Section 4.8 of the 2<sup>nd</sup> IMR on the NC DC and NC HVDC, two NRAs<sup>47</sup> confirmed the approval in the corresponding national regulations of requirements concerning voltage and frequency which are additional to those exhaustively defined in the NC DC and/or in the NC HVDC. In addition, EWRC (BG) did not report to ACER about frequency and voltage requirements implemented in its national legislation.

81 As a part of this follow-up exercise, all three NRAs had been requested to clarify the current implementation status concerning TOPIC #D and only EWRC (BG) did not reply.

- **TOPIC #E: Public consultation on requirements for demand units (NC DC)**

82 The 2<sup>nd</sup> IMR on the NC DC and NC HVDC monitored whether the relevant system operators and relevant TSOs fulfilled the obligation in Article 9(1) concerning the setting up of a public consultation with stakeholders, including the competent authorities of each Member State on the requirements for demand units referred to in point (d) of Article 9(1). In Section 4.6 of the 2<sup>nd</sup> IMR on NC DC and NC HVDC, four NRAs<sup>48</sup> reported that the consultations in accordance with Article 9(1)(d) were not carried out, while no information was made available to ACER by BWRC (BG). ACER has requested these five NRAs to provide a relevant update on this matter. However, EWRC (BG) and CNMC (ES) did not share information with ACER.

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<sup>41</sup> EWRC (BG), CNMC (ES), ACM (NL) and ERSE (PT).

<sup>42</sup> BNetzA (DE), ILR (LU), URE (PL), Ei (SE).

<sup>43</sup> EWRC (BG) and ILR (LU).

<sup>44</sup> E-Control (AT), EWRC (BG), CNMC (ES), ILR (LU), ERSE (PT)

<sup>45</sup> Ei (SE).

<sup>46</sup> ECA (EE) only with respect to the NC HVDC and CRU (IE) concerning both the NC DC and NC HVDC.

<sup>47</sup> ERO (CZ) concerning both the NC DC and NC HVDC and E-Control (AT) with respect to the NC DC.

<sup>48</sup> BNetzA (DE), CNMC (ES), ERSE (PT) and RONI (SK).

- **TOPIC #F: Interim operational notification procedure**

83 In accordance with Article 24 of the NC DC and Article 57 of the NC HVDC, a relevant TSO shall issue an interim operational notification, subject to completion of the data and study review process when owners of the referred systems may be requested to demonstrate equipment certificates. Section 5.2 of the 2<sup>nd</sup> IMR on the NC DC and NC HVDC pointed out that the full implementation of these provisions is still pending in six Member States.<sup>49</sup> ACER sought an update from the relevant NRAs but did not receive answers from EWRC (BG) and ILR (LU).

- **TOPIC #G: Compliance testing for demand and HVDC-connected systems**

84 In accordance with Section 5.3 of the 2<sup>nd</sup> IMR on NC DC and NC HVDC, seven NRAs<sup>50</sup> reported that the implementation of the provisions concerning the compliance testing in the NC DC and NC HVDC is outstanding. No relevant information was made available in the IMR by EWRC (BG). ACER sought an update from the concerned NRAs but did not receive answers from four of them.<sup>51</sup>

### 4.3.2 Austria (E-Control)

85 With respect to the NC DC and NC HVDC, the information reported by E-Control (AT) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 18.

Table 18. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by E-Control

<b>TOPIC #B: Approval of the requirements of general application (NC HVDC)</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 1.3.1, para. (15)	
<i>"E-Control (AT) reported that instead of submitting a proposal for the requirements of general application for HVDC-connected systems, system operators provided a letter stating that HVDC infrastructures are not existent and even not planned in AT"</i>	
NRA's update	ACER's view
<p>E-Control reported that it is currently setting the definitive schedule for implementation of the requirements of the HVDC NC.</p> <p>According to the NRA, TSOs final proposal on the HVDC NC implementation is expected in Q1/22.</p> <p>Approval by E-Control is foreseen for Q2/22.</p>	<p>ACER acknowledges that the actions envisaged by E-Control aim at addressing the issue relevant to TOPIC #B.</p> <p>ACER deems that concerning TOPIC #B AT will only be compliant after the implementation of the requirements of general application is completed.</p>
<b>TOPIC #D: Presence of additional requirements concerning frequency/voltage in the national regulation</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.8, para. (171)	

<sup>49</sup> AT, BG, FR, LU, PT and SI.

<sup>50</sup> HERA (HR), HEA (HU), ILR (LU), ACM (NL), ERSE (PT), Ei (SE) and AGEN-RS (SI).

<sup>51</sup> EWRC (BG), HERA (HR), HEA (HU) and ILR (LU).

<i>“E-Control (AT) reported that additional requirements to those included in the NC DC have been implemented in the national regulation. In fact, E-Control (AT) explained that the additional requirements with regard to frequency, voltage, reactive power and short-circuit are specified in the ‘DCC Anforderungs-V’”</i>	
NRA’s update	ACER’s view
E-Control clarified that there are no other additional requirements than those contained in the NC DC. Frequency ranges and time periods in the ‘DCC Anforderungs-V’ are in line with Article 12.	ACER acknowledges the statement received from E-Control and considers that AT is compliant with the NC DC on TOPIC #D.
TOPIC #F: Interim operational notification procedure	
From the 2 <sup>nd</sup> ed. IMR, Section 5.2, para. (199)	
<i>“The set of documents and information concerning the operational notification procedure in absence of equipment certificates is being developed in AT”</i>	
NRA’s update	ACER’s view
E-Control reported that it is currently setting the definitive schedule for implementation of the requirements of the HVDC NC.  According to the NRA, TSOs final proposal on the HVDC NC implementation is expected in Q1/22.  Approval by E-Control is foreseen for Q2/22.	ACER acknowledges that the actions envisaged by E-Control aim at addressing the issue relevant to TOPIC #F.  ACER deems that concerning TOPIC #F AT will only be compliant after the implementation of the relevant provisions is completed.

### 4.3.3 Czech Republic (ERO)

86 With respect to the NC DC and NC HVDC, the information reported by ERO (CZ) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 19.

Table 19. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by ERO

TOPIC #D: Presence of additional requirements concerning frequency/voltage in the national regulation	
From the 2 <sup>nd</sup> ed. IMR, Section 4.8, para. (172)	
<i>“ERO (CZ) affirmed that additional requirements are included in the Grid Codes. The regulatory authority claims that system operators are responsible for the grid codes. Based on this, they can propose any requirements that are not against the law or which do not create an imbalance in the market. However, ERO (CZ) does not elaborate on the characteristics of these additional requirements and does not show how their presence in the grid codes prevents EU market distortions”</i>	
NRA’s update	ACER’s view

Concerning the NC DC, NRA reported that it will invite DSOs to fully comply with the European Regulation. If the operators fail to comply voluntarily, ERO will issue a decision <i>ex officio</i> .	ACER acknowledges the statement received from ERO (CZ) but deems that CZ remains non-compliant on TOPIC #D concerning the NC DC.
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#### 4.3.4 Germany (BNetzA)

- 87 With respect to the NC DC and NC HVDC, the information reported by BNetzA (DE) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 20.

Table 20. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by BNetzA

<b>TOPIC #A: Approval of the requirements of general application (NC DC)</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.2.3, para. (115) and Section 4.9, para. (187)	
<i>“BNetzA (DE) explained that the proposals for these requirements [for demand response] were not included [in the submitted proposals] because demand response capabilities are not considered as a prerequisite for grid connection of a demand unit. In fact, demand systems may provide demand response services to a relevant system operator or a relevant TSO in accordance with Article 27(2), Article 28(1), Article 29(1) and Article 30(1) of the NC DC”</i>	
<i>“However, prospective or new demand systems, willing to provide demand response services, should not be obstructed by the lack of approved and publicly available relevant requirements. In fact, prospective demand systems could eventually delay their projects, whereas new demand systems may require potentially costly retrofitting actions in order to comply with the requirements in TITLE III, once approved. A fully successful implementation of the NC DC should not offer this picture since all the requirements of the NC DC have already entered into application”</i>	
NRA’s update	ACER’s view
The NRA ascertained that all the requirements laid down in Title III of the NC DC are specified in the <i>Verordnung über Vereinbarungen zu abschaltbaren Lasten</i> , in prequalification requirements for demand service providers established by the TSOs and in their Annexes.	ACER understands that the requirements for the provision of demand response were approved in the national legislation and considers that DE is compliant with the NC DC on TOPIC #A.
<b>TOPIC #E: Public consultation on requirements for demand units</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.6, para. (155)	
<i>“BNetzA (DE) explained that such consultation was not organised since the requirements concerning the abovementioned articles have not been submitted/approved”</i>	
NRA’s update	ACER’s view
The NRA clarified that legal instruments laying down requirements for demand units have been publicly consulted with stakeholders when they were first introduced and also every time they were amended.	Pursuant to BNetzA’s clarification, ACER considers that DE is compliant with the NC DC on TOPIC #E.

### 4.3.5 Estonia (ECA)

- 88 With respect to the NC DC and NC HVDC, the information reported by ECA (EE) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 21.

Table 21. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by ECA

TOPIC #C: Parameters' variation compared to the values in the NC HVDC	
From the 2 <sup>nd</sup> ed. IMR, Section 4.7, para. (161)	
<p><i>"ECA (EE) reported that the values of the requirements of general application approved for the NC DC are the same adopted for the implementation of the NC Requirements for Generators. However, with regard to Article 39(2)(a) of the NC HVDC, the time period for operation within the frequency range 47,0 Hz – 47,5 Hz is set at 60 seconds, instead of at 20 seconds as provided in the Annex VI of the NC HVDC"</i></p>	
NRA's update	ACER's view
<p>ECA amended the information shared in the drafting of the IMR and reported that all the parameters concerning the NC HVDC have been implemented at the national level in full alignment with the values and intervals set in the EU regulation.</p>	<p>Pursuant to the clarification provided by ECA, ACER considers that EE is compliant with the NC HVDC on TOPIC #C</p>

### 4.3.6 Spain (CNMC)

- 89 With respect to the NC DC and NC HVDC, the information reported by CNMC (ES) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 22.

Table 22. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by CNMC

TOPIC #A: Approval of the requirements of general application (NC DC)	
From the 2 <sup>nd</sup> ed. IMR, Section 4.3.1., para. (135)	
<p><i>"The status of the implementation of the provisions in Article 6 of the NC DC concerning the approval of the requirements of general application is still pending in ES [...] since a formal approval of these requirements has not been reached yet, although the proposals have been duly submitted by the TSO or relevant system operators"</i></p>	
NRA's update	ACER's view
<p>Requirements of general application were approved in 2020.</p>	<p>Based on CNMC input, ACER deems that ES is compliant with the NC DC concerning TOPIC #A.</p>

<b>TOPIC #B: Approval of the requirements of general application (NC HVDC)</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.3.2., para. (143)	
<i>“The status of the implementation of the provisions in Article 5 of the NC HVDC concerning the approval of the requirements of general application is still pending in ES [...] since a formal approval of these requirements has not been reached yet, although the corresponding proposals have been duly submitted by the TSO or relevant system operators”</i>	
<b>NRA’s update</b>	<b>ACER’s view</b>
Requirements of general application were approved in 2020.	Based on CNMC input, ACER deems that ES is compliant with the NC HVDC concerning TOPIC #B.
<b>TOPIC #D: Presence of additional requirements concerning frequency/voltage in the national regulation</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.8, para. (175)	
<i>“[CNMC] reported the absence of additional requirements concerning frequency or voltage in the relevant national regulations”</i>	
<b>NRA’s update</b>	<b>ACER’s view</b>
CNMC (ES) declared that additional requirements on frequency/voltage are present in the national regulation.	The feedback provided by CNMC confirms the lack of compliance with the NC DC and NC HVDC. ACER deems that ES is non-compliant concerning TOPIC #D.
<b>TOPIC #E: Public consultation on requirements for demand units</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.6, para. (157)	
<i>“CNMC (ES) reported that the public consultation pursuant to Article 9(1)(d) of the NC DC was not carried out in ES without providing relevant justifications”</i>	
<b>NRA’s update</b>	<b>ACER’s view</b>
(No reply was provided)	ACER deems that ES remains non-compliant concerning TOPIC #E.

### 4.3.7 France (CRE)

- 90 With respect to the NC DC and NC HVDC, the information reported by CRE (FR) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 23.

Table 23. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by CRE

<b>TOPIC #F: Formal requirements in interim operational notification procedure</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.2, para. (202)	
<i>“CRE (FR) did not reply to this question [concerning the documents that are required by the relevant system operator in the absence of equipment certificates]”</i>	
NRA’s update	ACER’s view
<p>CRE reported that the interim operational notification could be provided after the declaration of conformity, certificates of conformity and simulations demonstrating the conformity with the relevant requirements.</p> <p>When specific tests are necessary, other documents (including those detailed in the TSO’s technical documentation) are sent to the customer in order to describe the performance of the tests.</p>	<p>Pursuant to CRE’s clarification, ACER considers that FR is compliant on TOPIC #F.</p>
<b>TOPIC #G: Compliance testing for demand and HVDC-connected systems</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.3, para. (209)	
<i>“CRE (FR) did not reply to this question [on how the requirements of the NC DC and of the NC HVDC are verified in the absence of equipment certificates]”</i>	
NRA’s update	ACER’s view
<p>CRE clarified that the compliance testing procedure is detailed in articles 5.3.1 and 5.3.2 of the TSO’s technical documentation. The control system put in place by the TSO is structured in 3 stages, which are associated with sheets on the various elements to be checked or tested.</p>	<p>Pursuant to CRE’s clarification, ACER considers that FR is compliant on TOPIC #G.</p>



### 4.3.8 Ireland (CRU)

91 With respect to the NC DC and NC HVDC, the information reported by CRU (IE) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 24.

Table 24. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by CRU

<b>TOPIC #C: Parameters' variation compared to the values in the NC HVDC</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.7, para. (163) and (167)	
<p><i>"The EirGrid Grid Code requires an unlimited operation to all the interconnectors in the frequency range 47.5 Hz -52 Hz, whereas such unlimited operation only applies to the range of frequencies 49 Hz – 51 Hz in the NC HVDC. Moreover, the EirGrid Grid Code requires the HVDC system to remain connected to the network for 30 seconds in the frequency range 47 Hz – 47.5 Hz, whereas the corresponding operation time in the NC HVDC is 60 seconds for those HVDC-connected systems complying with Article 11 of the NC HVDC and 20 seconds for those that comply with Article 39(2)(a) of the NC HVDC"</i></p> <p><i>"CRU (IE) [...] reported that [the] Grid Code [in IE] impose[s] additional requirements that refer to a range of values beyond the maximum/minimum thresholds defined in the NC DC. In particular, the national regulation imposes demand systems to remain connected to the network for 20 seconds and 60 minutes whether frequency lies in intervals 47 Hz - 47.5 Hz and 51.5 Hz - 52 Hz, respectively. It is worth pointing out that the NC DC does not envisage any requirement on time period for operation in these frequency ranges for the [relevant] synchronous area"</i></p>	
NRA's update	ACER's view
<p>CRU reported that the TSO has submitted to the CRU proposed changes to the Grid Code (not yet approved) to ensure alignment with the requirements of the NC HVDC.</p> <p>Regarding additional requirements that refer to a range of values beyond the maximum/minimum threshold defined in the NC DC, CRU confirmed that they still apply in IE. Furthermore, CRU declared that the relevant TSO has sought amendments to the next iterations of the CNCs to reflect this</p>	<p>ACER considers the actions reported by CRU as leading towards possible remedy of the identified non-compliance.</p> <p>However, this requires the formal amendment of the relevant rules.</p> <p>ACER deems that IE remains non-compliant concerning TOPIC #C.</p>

### 4.3.9 Luxembourg (ILR)

92 With respect to the NC DC and NC HVDC, the information reported by ILR (LU) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 25.

Table 25. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by ILR

<b>TOPIC #A: Approval of the requirements of general application (NC DC)</b>
From the 2 <sup>nd</sup> ed. IMR, Section 4.2.3, para. (114)-(115)

<i>"ILR (LU) [...] stated that the demand response requirements were not included in the submitted proposals [...]. ILR (LU) reported that the relevant TSO has been requested to provide a roadmap to propose these requirements"</i>	
NRA's update	ACER's view
(No reply was provided)	ACER deems that LU remains non-compliant on TOPIC #A.
<b>TOPIC #B: Approval of the requirements of general application (NC HVDC)</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 1.3.1, para. (15)	
<i>"ILR (LU) communicated to ACER that no answers were provided with regard to the NC HVDC. This is due to the fact that there are no HVDC links currently connected to the network in LU and no projects are envisaged in future"</i>	
NRA's update	ACER's view
ILR reported communications in place with BNetzA (DE) <sup>52</sup> to discuss the content of implementation of the HVDC NC in DE. Afterwards, ILR will liaise with CREOS (the TSO in LU) to implement the NC HVDC.	ACER acknowledges the intention to implement the NC HVDC. However, ACER considers that LU remains non-compliant on TOPIC #B.
<b>TOPIC #F: Formal requirements in interim operational notification procedure</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.2, para. (199)	
<i>"The set of documents and information concerning the operational notification procedure in absence of equipment certificates is being developed in LU"</i>	
NRA's update	ACER's view
(No reply was provided)	ACER deems that LU remains non-compliant concerning TOPIC #F.
<b>TOPIC #G: Compliance testing for demand and HVDC-connected systems</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.3, para. (207)	
<i>"ILR (LU) reported that specific procedures, dealing with documents and information concerning the compliance testing and to be shared with parties, still need to be developed or implemented. The treatment of such cases, expected to be very limited, is being assessed"</i>	
NRA's update	ACER's view
(No reply was provided)	ACER deems that LU remains non-compliant concerning TOPIC #G.

<sup>52</sup> This choice reflects that Creos (TSO in LU) and Amprion (a TSO in DE) belong to the same common Load-Frequency Control (LFC) area and more widely LU and DE form a common electricity market.

### 4.3.10 The Netherland (ACM)

- 93 With respect to the NC DC and NC HVDC, the information reported by ACM (NL) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 26.

Table 26. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by ACM

<b>TOPIC #A: Approval of the requirements of general application (NC DC)</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.3.1, para. (135)	
<i>“The status of the implementation of the provisions in Article 6 of the NC DC concerning the approval of the requirements of general application is still pending in NL since a formal approval of these requirements has not been reached yet, although the proposals have been duly submitted by the TSO or relevant system operators”</i>	
NRA’s update	ACER’s view
ACM confirmed that the relevant approval was issued on 17 July 2020.	ACER considers that NL is compliant on TOPIC #A concerning the NC DC.
<b>TOPIC #G: Compliance testing for demand and HVDC-connected systems</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.4, para. (213)	
<i>“ACER deems that the status of the implementation [of the requirements relating to the compliance testing] is still pending in NL”</i>	
NRA’s update	ACER’s view
The NRA supplied detailed information on the implementation of Chapter 2, Title IV of NC DC and Chapter 2, Title VI of NC HVDC.	Based on the ACM input, ACER deems that NL is compliant on TOPIC #G concerning the NC DC and NC HVDC.

### 4.3.11 Poland (URE)

- 94 With respect to the NC DC and NC HVDC, the information reported by URE (PL) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 27.

Table 27. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by URE

<b>TOPIC #A: Approval of the requirements of general application (NC DC)</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.2.3, para. (114)-(115)	
<i>“URE (PL) stated that the demand response requirements were not included in the submitted proposals [...]. URE (PL) explained that the definition of these requirements has been postponed due to lack of stakeholders’ interest in such services and experience at the time of establishing requirements of general application”</i>	

NRA's update	ACER's view
URE informed ACER that the TSO has not yet submitted a proposal to amend the requirements of general application of the NC DC.	ACER deems that PL remains non-compliant on TOPIC #A concerning the NC DC.

#### 4.3.12 Portugal (ERSE)

95 With respect to the NC DC and NC HVDC, the information reported by ERSE (PT) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 28.

Table 28. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by ERSE

<b>TOPIC #A: Approval of the requirements of general application (NC DC)</b>	
<b>From the 2<sup>nd</sup> ed. IMR, Section 4.3.1, para. (135)</b>	
<i>"The status of the implementation of the provisions in Article 6 of the NC DC concerning the approval of the requirements of general application is still pending in PT since a formal approval of these requirements has not been reached yet, although the proposals have been duly submitted by the TSO or relevant system operators"</i>	
NRA's update	ACER's view
ERSE confirmed that the relevant requirements are not published (and approved) yet, as the transposition of the electricity internal market directive is in progress.	ACER acknowledges the intention to fully implement the NC DC. However, ACER deems that PT remains non-compliant on TOPIC #A concerning the NC DC.
<b>TOPIC #B: Approval of the requirements of general application (NC HVDC)</b>	
<b>From the 2<sup>nd</sup> ed. IMR, Section 1.3.1, para. (16)</b>	
<i>"ERSE (PT) reported that the requirements of general application for the NC HVDC have been implemented as a guidance reference in PT. As supporting motivation, ERSE (PT) highlighted the uniqueness of this type of systems, their constant technological evolution and the current/future lack of HVDC-connected systems connected to the Portuguese network. The formal definition of relevant requirements will be carried out on a case-by-case basis and adjusted, if necessary, to the specificity of the future projects"</i>	
NRA's update	ACER's view
ERSE confirmed that the relevant requirements were not published (and approved) yet, as the transposition of the electricity internal market directive is in progress.	ACER acknowledges the intention to implement the NC HVDC. However, ACER deems that PT remains non-compliant on TOPIC #B concerning the NC HVDC.

<b>TOPIC #E: Public consultation on requirements for demand units (NC DC)</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.6, para. (155)-(156)	
<i>“The analysis of the answers provided by [...] ERSE (PT) revealed that the relevant system operators and relevant TSOs did not carry out any consultation with stakeholders [...]. [ERSE indicated that] it was decided not to include in the national implementation proposal any requirements associated with DSR, since they were reserved for future decisions to be taken by the regulator (ERSE)”</i>	
NRA’s update	ACER’s view
ERSE reported the launch of a pilot project on the participation of demand side response in the Regulation Reserve Market, whose operational rules were submitted to public consultation from 1 to 31 October 2018.	Based on the ERSE input, ACER deems that PT is compliant with the NC DC on TOPIC #E.
<b>TOPIC #F: Formal requirements in interim operational notification procedure</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.2, para. (199)	
<i>“The set of documents and information concerning the operational notification procedure in absence of equipment certificates is being developed in PT”</i>	
NRA’s update	ACER’s view
ERSE reported that the requirements await publication.	ACER acknowledges the intention to publish the relevant requirements. However, ACER deems that PT remains non-compliant on TOPIC #F until the publication takes place.
<b>TOPIC #G: Compliance testing for demand and HVDC-connected systems</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.3, para. (206)	
<i>“According to ERSE (PT), the aspects investigated in this question are being addressed in the ongoing revision of regulations for the transmission and distribution network s”</i>	
NRA’s update	ACER’s view
ERSE reported that the requirements await publication.	ACER acknowledges the intention to publish the relevant requirements. However, ACER deems that PT remains non-compliant on TOPIC #G until the publication takes place.

### 4.3.13 Sweden (Ei)

96 With respect to the NC DC and NC HVDC, the information reported by Ei (SE) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 29.

Table 29. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by Ei

<b>TOPIC #A: Approval of the requirements of general application (NC DC)</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.2.3 and 4.3.1., para. (116) and (134)	
<i>"Ei (SE) reported that not all parameters have been included in the submitted proposals. Concerning the NC DC, few requirements are missing [Article 15(2)(a)-(b), 14(1), 14(5), 19 (partly), 16(1), 17(1), 18(1)-(3). Regarding 18(1), this will be dealt with in the TSOs project for real-time data]"</i>	
NRA's update	ACER's view
Ei intends to supervise the TSOs' implementation of the requirements in the Articles 13 to 19 of the NC DC and the standards for communication, requirements regarding reactive effect etc.	ACER acknowledges the steps undertaken by Ei towards the implementation of the relevant provisions of the NC DC. However, ACER deems that SE remains non-compliant on TOPIC #A..
<b>TOPIC #B: Approval of the requirements of general application (NC HVDC)</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 4.2.3 and 4.3.2, para. (116) and (142)	
<i>"Ei (SE) [...] registers a more significant lack of proposals for the requirements of general application of the NC HVDC [Around 40 requirements are missing as reported by Ei (SE) and included in Section 3.1.2 of Annex I]"</i>	
NRA's update	ACER's view
Ei reported the intention to supervise the TSOs' implementation of the requirements regarding NC HVDC in 2023.	ACER acknowledges the steps undertaken by Ei towards the implementation of the remaining provisions of the NC HVDC. ACER deems that concerning TOPIC #B SE will only be compliant after the implementation of the requirements of general application is completed.
<b>TOPIC #G: Compliance testing for demand and HVDC-connected systems</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.3, para. (205)	
<i>"Ei (SE) did not report any available documents/information in the context compliance testing in absence of equipment certifiers"</i>	
NRA's update	ACER's view
Ei reported the intention to supervise the TSOs in 2022.	ACER acknowledges the steps undertaken by Ei towards the implementation of the remaining provisions of the NC HVDC.

	ACER deems that concerning TOPIC #G SE will only be compliant after the implementation of the relevant provisions is completed. .
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#### 4.3.14 Slovenia (AGEN-RS)

- 97 With respect to the NC DC and NC HVDC, the information reported by AGEN-RS (SI) pursuant to ACER's request in accordance with paragraph (13) is summarised in Table 30.

Table 30. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by AGEN-RS

<b>TOPIC #F: Formal requirements in interim operational notification procedure</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.2, para. (199)	
<i>"The set of documents and information concerning the operational notification procedure in absence of equipment certificates is being developed in SI"</i>	
NRA's update	ACER's view
AGEN-RS reported that the relevant TSO has been required to issue a new national grid code for the transmission system as soon as possible but not before the adoption of the new national Law on electricity supply.	ACER deems that SI remains non-compliant on TOPIC #F.
<b>TOPIC #G: Compliance testing for demand and HVDC-connected systems</b>	
From the 2 <sup>nd</sup> ed. IMR, Section 5.3, para. (205)	
<i>"AGEN-RS (SI) [...] [reported] that documents/information will be provided according to the results of an ongoing study"</i>	
NRA's update	ACER's view
AGEN-RS reported that the relevant TSO has been required to issue a new national grid code for the transmission system as soon as possible but not before the adoption of the new national Law on electricity supply.	ACER deems that SI remains non-compliant on TOPIC #G.

### 4.3.15 Slovak Republic (RONI)

- 98 With respect to the NC DC and NC HVDC, the information reported by RONI (SK) pursuant to ACER’s request in accordance with paragraph (13) is summarised in Table 31.

Table 31. Summary of the follow-up monitoring activities concerning implementation of the NC DC and NC HVDC by RONI

TOPIC #E: Public Consultation on requirements for demand units (NC DC)	
From the 2 <sup>nd</sup> ed. IMR, Section 4.6, para. (155)-(156)	
<i>“RONI (SK) explained that the consultation was not carried out because the TSO sets requirements for demand units connected at a voltage level 110 kV and higher”</i>	
NRA’s update	ACER’s view
RONI confirmed the information provided in the drafting of the IMR. In particular, the absence of the demand units connected at a voltage level below 110 kV is the motivation for not implementing the relevant requirements and thus not carry out the mandatory public consultation.	ACER considers that not implementing the requirements in Article 28(2)(c), (e), (f), (k) and (i), and Article 29(2)(c)-(e) may stand as a barrier for prospective demand units that could require a connection at a voltage level below 110 kV. ACER deems that SK remains non-compliant on TOPIC #E.



## Annex I: Answers from NRAs

99 This Annex includes the responses as received from the NRAs concerning the implementation status of the Grid Connection Network Codes. Text in red font is added by ACER for the sole purpose of clarification.

### A. Answers concerning the implementation of the NC RfG

Table 32. NRAs' clarifications on implantation of the NC RfG.

MS	Date	Answer
BE	30/09/2021	<p>Based upon the latest approved version of the "Requirements for general application" (<a href="https://www.vreg.be/sites/default/files/document/bijlage_-_besl-2019-39.pdf">https://www.vreg.be/sites/default/files/document/bijlage_-_besl-2019-39.pdf</a>, p.23), the exemption referred to in paragraph (84) of the 3rd IMR is still in place. And so, the non-compliance issue, if identified as such, remains non-resolved.</p>
CZ	08/04/2021	<p>According to the Energy Act, distribution system operators are obliged to prepare and compile an operating document (Distribution System Operation Rules), which also contains the operating conditions of electricity generations in relation to the distribution system.</p> <p>These conditions have historically included the operating frequency range of generation modules connected in networks up to 110 kV. These ranges correspond to the ranges given in the RfG and are intended for generation sources with a power capacity from 800 W inclusive.</p> <p>In addition, the distribution operators set these frequency conditions in the rules for the operation of the distribution system also for generation sources up to 800 W. Distribution system operators have also set an extra band (frequency range), which is mandatory upon agreement for generation sources from 800 W inclusive and mandatory (without an agreement) for generation sources up to 800 W.</p> <p>Historically, an additional frequency band (see below) was agreed in these rules before the RfG came into force, and this frequency band has been preserved to this day.</p> <p>Frequency range Minimum operating time</p> <p>47 - 47.5 Hz 20 s</p> <p>47.5 - 48.5 Hz 30 min *</p> <p>48.5 - 49 Hz 90 min</p> <p>49 - 51 Hz unlimited</p> <p>51 - 51.5 Hz 30 min</p> <p>Based on the fact that interpretation ambiguities may arise, therefore we will call on distribution system operators to bring the frequency bands into line with the RfG. For the additional frequency band, we</p>

		<p><i>propose to add the remark that this is a band mandatory for production modules up to 800 W and for modules with higher capacity power (<math>\geq 800</math> W) the recommended value for concluding an agreement within the meaning of Article 13 (1a, ii). An agreement do not exclude a different additional frequency band/range.</i></p>
DE	<p>26/03/2021 and 21/05/2021 and 01/10/2021 and 11/10/2021</p>	<p><i>I. On the “Deadline Art. 4(2)(b) of the RfG (Sec. 3. of the IMR)” you state in the General Part of the file that “Only DE is worth to be monitored since the reported deadline was later than the publication of the IMR.” In the RfG part of the file you emphasize this by stating that the deadline in Germany was 31 December 2020.</i></p> <p><i>We understand that Art. 4(2) subpara. 4 of the NC RfG allows a Member State to deviate from the 2-year deadline of Article 4(2)(b) of the NC RfG in specified circumstances. A pandemic may certainly be considered a specified circumstance. In our view, the German Parliament was therefore entitled to prolong the deadline by means of amending Art. 118(25) of the German Energy Act. UPDATE: On Point I., I hereby confirm that no further extension has been granted and the deadline of 31/12/20 has now passed, see Article 118(25) of the German Energy Act (<a href="http://www.gesetze-im-internet.de/enwg_2005/_118.html">http://www.gesetze-im-internet.de/enwg_2005/_118.html</a>).</i></p> <p><i>II. On “parameters' variation compared to the values in RfG (Sec. 4.2.1 of IMR)” we have started to investigate whether there actually is a variation from the values of the RfG or whether the alleged variation is simply due to a misinterpretation / wrong citation of the applicable technical rules of the designated entity VDE FNN on our side. We will give you an update on this investigation within the upcoming weeks. I. On RfG</i></p> <p><i>On “parameters' variation compared to the values in RfG (Sec. 4.2.1 of IMR)” we have found out that there is no misinterpretation / wrong citation of the applicable technical rules of the designated entity VDE FNN on our side. We have cited the German provisions correctly. We therefore further looked into the legal situation. Indeed, the time period for operation for type B and type C PGMs is reduced to 60 seconds if the voltage falls in the ranges [0.85-0.9] p.u. and [1.10-1.15] p.u. And indeed Article 13(1)(a)(i) of the NC RfG does not make the time periods for operation in line with Table 2 conditional upon whether or not any voltage ranges are met. However, we are of the opinion that Article 13(1)(a)(ii) of the NC RfG allows for such conditionality, given the fact that it states that the relevant system operator, in coordination with the relevant TSO, and the power-generating facility owner may agree on specific requirements for combined frequency and voltage deviations. But besides that, we believe it is legally sound to argue that a looser onerous time period for operation does not affect any stakeholder negatively and is therefore compliant with the minimum requirements established by the NC DC. Producers and owners of power-generating modules which are capable of remaining connected to the network and operate within the frequency ranges and time periods specified in Table 2 of Article 13 of the NC RfG do not face any market entry</i></p>

		<p><i>barrier, because the looser requirement under the applicable technical rule in Germany is by definition always fulfilled by them.</i></p> <p><i>Finally, we have learned that ENTSO-E already stated in a Q&amp;A in 2012 how the requirement for temporal behaviour in the event of simultaneous deviation of frequency and voltage are to be interpreted (see Annex, FAQ 21). According to our knowledge, this position is still held today by ENTSO-E. On the question how the situation of simultaneous deviation in frequency and voltage should be interpreted, ENTSO-E answers: "Each requirement applies on its own. If the specified duration withstand capability is exceeded, then the Generator is entitled to trip. If both quantities vary at the same time, the quantity with the shortest duration criterion can initiate the trip." We tend to share their view, or rather take their view by analogy on Article 13 and Article 16 of the NC RfG.</i></p> <p><b>Update from BNetzA:</b></p> <p><i>BNetzA (DE) takes the view that it is not forbidden under the NC RfG to apply stricter requirements on frequency or voltage in the national regulation. BNetzA (DE) argues that the NC RfG aims at establishing harmonised rules for grid connection for power-generating modules in order to ensure system security and in order to facilitate the integration of renewable electricity sources (Recital 3 of NC RfG). Both aims are enhanced by the stricter measures applied in DE. BNetzA (DE) argues that furthermore, Union-wide trade in electricity (Recital 3 of NC RfG) is not hampered by more stringent rules for generators.</i></p> <p><i>Also, in our opinion the fact that in DE the application of some requirements of general application is extended to all the storage technologies, whilst Article 3(2)(d) of the NC RfG limits the scope of application of the NC RfG to pump-storage PGMs, is not a case for non-compliance with the RfG. If a subject-matter is explicitly left out of scope of Union law, by definition, its regulation under national law may not infringe Union law.</i></p> <p><b>Second update from BNetzA:</b></p> <p><i>The FRT requirements to Type A PGMs is implemented in the German national law via reference to the relevant standard "EN 50549-1".</i></p>
<p><b>EE</b></p>	<p>26/03/2021</p>	<p><i>There is no specific national legislation, which regulates the permanent decommissioning of a power-generating module (A-type).</i></p> <p><i>Even, if such legislation would exist, there is no mechanism in RfG, which would force the owners of A-type a power-generating module to notify about the permanent decommissioning of a power-generating module. Furthermore, the owner of A-type a power-generating module has no obligation to generate power (i.a. by using the grid connection), thus it's impossible to detect whether there exist any A-type a power-generating module which needs to be</i></p>

		<i>decommissioned or A-type a power-generating module owner has just temporally stopped to generate power.</i>
<b>ES</b>	08/10/2021	<i>Status of the requirements of general application: Approved in 2020. Royal Decree 647/2021 (<a href="https://www.boe.es/buscar/doc.php?id=BOE-A-2020-7439">https://www.boe.es/buscar/doc.php?id=BOE-A-2020-7439</a>) was approved in July 2020 and set the general framework for the national implementation of the Regulation (UE) 2016/631 and Regulation (UE) 2016/1388 followed by the approval of the technical order TED/749/2020 (<a href="https://www.boe.es/buscar/act.php?id=BOE-A-2020-8965">https://www.boe.es/buscar/act.php?id=BOE-A-2020-8965</a>), where more detail and values are provided (corresponding to the parameters and additional requirements).</i>
<b>FI</b>	04/10/2021	<p><i>There are a few specifying national requirements concerning the requirements but these should not violate the network code. For voltage regulation, it has been necessary to set more precise requirements at national level than in the RfG, for example for synchronous power-generating modules there are national performance requirements. In our opinion RFG leaves matter open and to be agreed between the network operator and the connecting customer for the type D synchronous power plants. According to the current understanding, these few specifying requirements concerning the voltage control are allowed according to the RFG and have been necessary and have not violated the Network Code (the technical requirement document <a href="https://www.fingrid.fi/globalassets/dokumentit/en/customers/grid-connection/grid-code-specifications-for-power-generating-facilities-vjv2018-.pdf">https://www.fingrid.fi/globalassets/dokumentit/en/customers/grid-connection/grid-code-specifications-for-power-generating-facilities-vjv2018-.pdf</a>).</i></p> <p><i>Concerning the second problem, there shouldn't be any implementation problems. First, there are national legislation about the notification. According to the legislation (electricity market law 64 §) "The producer shall notify the Energy Market Authority of the construction plan and commissioning of the power plant and of the long-term or permanent decommissioning of the power plant. The Government Decree lays down more detailed provisions on the content of the notification obligation and the notification procedure." However in the decree (65/2009) notification concerns only at least 1 MVA power plants. National legislation has considered that the notification procedure is not necessary for installations with less than 1 MVA. In our opinion this complies with the article 30.3 "The power-generating facility owner shall ensure that the relevant system operator or the competent authority of the Member State is notified about the permanent decommissioning of a power-generating module in accordance with national legislation."</i></p> <p><i>In addition, the paragraph of that Article (30.3) has been implemented as such in the technical requirements for the power systems (VJV2018). According to the national legislation, regulator (EV) must confirm and approve these requirements with its own confirmation decision. The confirmation procedure ensures that everyone complies with the conditions set out in the VJV2018.</i></p>

<p><b>FR</b></p>	<p>30/09/2021</p>	<p><i>General terms and conditions:</i></p> <p><i>Regarding the new models of connection agreement, they have been approved by CRE or are in the process of being approved:</i></p> <ul style="list-style-type: none"> <li>- <i>DCC:</i></li> <li>o <i>DSO:</i></li> </ul> <p><i><a href="https://www.cre.fr/Documents/Deliberations/Decision/modele-de-convention-de-raccordement-d-un-gestionnaire-de-reseaux-de-distribution-d-electricite-au-reseau-public-de-transport-d-electricite">https://www.cre.fr/Documents/Deliberations/Decision/modele-de-convention-de-raccordement-d-un-gestionnaire-de-reseaux-de-distribution-d-electricite-au-reseau-public-de-transport-d-electricite</a></i></p> <li>o <i>Demand units:</i></li> <p><i><a href="https://www.cre.fr/Documents/Deliberations/Decision/approbation-du-modele-de-convention-de-raccordement-d-une-installation-de-consommation-d-electricite-au-reseau-public-de-transport-d-electricite">https://www.cre.fr/Documents/Deliberations/Decision/approbation-du-modele-de-convention-de-raccordement-d-une-installation-de-consommation-d-electricite-au-reseau-public-de-transport-d-electricite</a></i></p> <ul style="list-style-type: none"> <li>- <i>HVDC:</i></li> <li>o <i>HVDC systems:</i></li> </ul> <p><i><a href="https://www.cre.fr/Documents/Deliberations/Decision/approbation-du-modele-de-convention-de-raccordement-d-une-interconnexion-exemptee-en-courant-continu-au-reseau-public-de-transport-d-electricite">https://www.cre.fr/Documents/Deliberations/Decision/approbation-du-modele-de-convention-de-raccordement-d-une-interconnexion-exemptee-en-courant-continu-au-reseau-public-de-transport-d-electricite</a></i></p> <li>o <i>Direct current-connected PPM: pending</i></li> <li>- <i>RfG: pending, expected in October 2021</i></li> <p><i>In addition, RTE's technical documentation was updated following the publication of the ministerial order in June 2020.</i></p>
<p><b>GR</b></p>	<p>30/09/2021 and 01/10/2021</p>	<p><i>Greece has issued all the required decisions regarding the NC RfG except one, as described below:</i></p> <ul style="list-style-type: none"> <li>- <i>The definition of maximum capacity thresholds for types B, C and D power generating modules pursuant to Art. 5(3) have been approved by RAE with decision No 1165/2020 (Government Gazette issue B 3757/07.09.2020)</i></li> <li>- <i>The requirements of general application pursuant to Art. 7(4) have been approved by RAE with decision No 1165/2020 (Government Gazette issue B 3757/07.09.2020)</i></li> <li>- <i>The criteria for granting derogations pursuant to Art. 61 have been approved by RAE with decision No 778/2018 (Government Gazette issue B 4643/18.10.2018)</i></li> <li>- <i>There is no decision for emerging technologies because we missed the relevant deadlines for Greece.</i></li> </ul> <p><b>Update from RAE:</b></p> <ol style="list-style-type: none"> <li>1) <i>The deadline concerning Art. 4(2)(b) is 17.11.2018.</i></li> <li>2) <i>There are no such cases. All requirements approved for RfG are within the defined limits as established in NC RfG.</i></li> </ol>

		<p>3) <i>There are no such cases. There are not any additional binding requirements or any additional requirements concerning frequency and voltage.</i></p> <p>4) <i>Under development by the TSO. In progress.</i></p> <p>5) <i>Permanent decommissioning of type A PGMs is notified to DSO and indirectly notified to the NRA (RAE) through the permitting procedures (permit revocation). In any case revision and update is needed.</i></p> <p>6) <i>Partly implemented. No major changes compared to the previous practice. Revision, update is planned to start in order to enforce transparency.</i></p>
HR	16/03/2021	<p><i>For RfG, HERA has one remark that has been recently spotted due to recent changes in Croatian legislation. Namely, for field: Additional requirements concerning Frequency/Voltage (Sec. 4.2.2 of IMR). We think that for Croatia this field should be changes to „yes“. In national legislation, for type D there is additional requirement which is not prescribed in the RfG. For voltages above 1.1 pu (range between 1.1 – 1.15 pu) type D should stay connected for 60 minutes HERA will monitor the effect of this parameter, with the final goal to remove it from national legislation in future. We expect that the implementation of the SINCRO.GRID PCI project should solve the problem of high overvoltages in the Croatian 400 kV transmission network in foreseeable future.</i></p>
IE	24/03/2021 and 07/10/2021	<ul style="list-style-type: none"> <li>• <i>Regarding parameters' variation compared to the values in RfG, the comment in (88) in the 3rd edition of the monitoring report is correct. We are aware that EirGrid (TSO) are working on having the next iteration of RfG amended to reflect the Irish National Grid Code.</i></li> <li>• <i>Regarding Article 29(2) and 30(3), the TSO and DSO have agreed on a process for bringing the Distribution and Transmission System Grid Codes into compliance with the requirements for operational notification for RfG. We are expecting submission from both SOs at the end of April 2021, with approval by the CRU expected before the end of June 2021.</i></li> </ul> <p><b>Update from CRU:</b></p> <p><i>EirGrid requested via the ENTSO-E CNC WG that the extended frequency requirements were included in the next iteration of RfG.</i></p> <p><i>The operational notification procedure under RfG was approved by the CRU on 12 March 2020 (<a href="https://www.eirgridgroup.com/site-files/library/EirGrid/200312_CRU_Decision_MPID_276.pdf">https://www.eirgridgroup.com/site-files/library/EirGrid/200312_CRU_Decision_MPID_276.pdf</a>) and can be found in Sections CC.15.9 - CC.15.15.7 of the Grid Code (<a href="https://www.eirgridgroup.com/site-files/library/EirGrid/GridCodeVersion9.pdf">https://www.eirgridgroup.com/site-files/library/EirGrid/GridCodeVersion9.pdf</a>).</i></p> <p><i>CRU spoke to the DSO who said that this procedure is not yet in place. DOC7.4.4 and DOC7.4.5 of the Distribution Code (<a href="https://www.esbnetworks.ie/docs/default-source/publications/distribution-code-version-">https://www.esbnetworks.ie/docs/default-source/publications/distribution-code-version-</a></i></p>

		<p><i>7.0.pdf?Status=Master&amp;sfvrsn=6ac3c597_6/%20Distribution-Code-Version-7.0%20.pdf) covers off this requirement for other PGM Types but not Type A.</i></p>
IT	<p>23/03/2021 and 30/09/2021</p>	<p><i>Dopo una discussione interna con i colleghi sui contenuti del file excel, non siamo riusciti a capire a cosa si riferisce la non compliance dell'Italia rispetto agli ulteriori requirements.</i></p> <p><i>Onestamente nell'IMR nella sezione 4.2.2. non siamo nominati (e in realtà non sono nominati diversi dei soggetti che nel file excel sono marchiati come yes) e non riesco quindi a capire da dove nasca il problema.</i></p> <p><i>Potresti cortesemente indicarmi l'aspetto controverso così da poter verificare e risponderti di conseguenza. NRA: In allegato trovi le norme tecniche 0-16 e 0-21 del CEI, approvate da Arera, relative alle regole di connessione per gli impianti di tipo A, B e C (per D fa fede il Codice di rete di Terna, capitolo 1.C).</i></p> <p><i>Ho ricontrollato i vari documenti e i vostri commenti nel report.</i></p> <p><i>OVRT è effettivamente un requisito ulteriore richiesto dall'Italia in coerenza con quanto già previsto storicamente a livello nazionale. Noi riteniamo sia fondamentale mantenerlo, quindi sarà nostra cura evidenziarne l'opportunità nel momento in cui si aprirà la finestra per l'aggiornamento di RfG. NRA: Per quanto riguarda il 13.4 di RfG, è vero che le regole tecniche menzionano che di norma non è prevista alcuna riduzione per i PPM, tuttavia chiamare questa una esenzione mi sembra personalmente azzardato. La vera differenza rispetto a RfG è che l'Italia richiede giustificazioni tecniche per la riduzione: di conseguenza si assume che i per i generatori statici dette motivazioni non ci siano, da cui l'idea che, di norma, nessuna riduzione è ammessa per i PPM. Ma di fatto si tratta di una conclusione legata all'ipotesi di assenza di giustificazioni tecniche: non è una regola ferrea perché, nei fatti, se il produttore adducesse motivi validi, la riduzione sarebbe ammessa e risulterebbe in linea con quanto previsto da RfG.</i></p> <p><i>L'ideale, quindi, sarebbe stato evidenziare la richiesta di giustificazioni tecniche (e da lì dedurre la non applicabilità della riduzione di cui al 13(4) RfG), ma è stata colpa nostra nel non averlo segnalato per tempo. Il report ormai è pubblicato e, dato il fatto che si tratta di una piccolissima cosa, lo teniamo così come è senza problemi. Spero invece che la segnalazione possa essere utile per il futuro.</i></p> <p><b>Update from ARERA:</b></p> <p><i>The active power reduction in case of falling frequency shall be justified by technical reasons: ARERA assumes that no technical reasons usually apply for PPMs, but if any technical reasons are provided, the reduction will be allowed.</i></p> <p><i>In Italy the over-voltage ride-through capability (OVRT) is applied to PPMs, in addition to the requirements envisaged in the NC RfG for</i></p>

		<p><i>these units. This choice was adopted in continuity with the historical approach applied so far.</i></p>
<b>NL</b>	<p>26/03/2021 and 22/04/2021 and 01/10/2021</p>	<p><i>The permanent decommissioning of type A PGM is carried out via a national digital platform called CERES.</i></p> <p><i>CERES is the implementation of the production installation register (PIR).</i></p> <p><i>CERES has three functions:</i></p> <p><i>a) Connected parties, their installer or the system operator can send the structural data of the PGM to CERES.</i></p> <p><i>A connected party should also notify CERES in case of the decommissioning of a PGM.</i></p> <p><i>b) Storage of information for use by the grid operator.</i></p> <p><i>c) A viewing function for connected parties.</i></p> <p><b>Update from ACM:</b></p> <p><i>On the 13th of September 2021 ACM has published two decisions concerning the Rate of Change of Frequency (RoCoF) in accordance with Article 13(1)(b) from the NC RfG, and the reactive-power requirements for type B, C and D SPGM in accordance with Article 17(2) and 18(2) from the NC RfG.</i></p> <p><i>Reference:</i></p> <p><i>Staatscourant 2021, 40915   Overheid.nl &gt; Officiële bekendmakingen (officielebekendmakingen.nl)</i></p> <p><i>Staatscourant 2021, 40916   Overheid.nl &gt; Officiële bekendmakingen (officielebekendmakingen.nl)</i></p> <p><i>With the finalisation of these two decisions all the requirements of general application in accordance with Article 7(1) from the NC RfG are established.</i></p>
<b>PT</b>	<p>31/03/2021 and 13/10/2021</p>	<p><i>Additional requirements concerning Frequency/Voltage (Sec. 4.2.2 of IMR). Sec. 4.2.2 refers to “Requirements of general application proposed by the relevant system operator other than the TSO”. In Portugal the RfG proposal for national implementation was previously consolidated between TSO and DSO.</i></p> <p><i>Art. 71(1) of the RfG - Amendment of contracts and general terms and conditions (Sec. 6.2 of the IMR). For new connections to the network of new generators, compliance with the requirements of the RfG is required.</i></p> <p><b>Update from ERSE (ACER’s summary of the email exchange with ERSE):</b></p> <p><b>Objective certification of the type A PGMs in PT must be based on the demonstration of conformity with the relevant European rules for types A and B, which include European standard EN 50549-1.</b></p>



SE	25/03/2021 and 07/10/2021	<ul style="list-style-type: none"> <li>• Article 13(2)(g): (Ei's req 3 kap. 6 §), this is not an additional requirement (correction), it is according to Figure 1 in article 13(2)(a).</li> <li>• Article 14(3)(a)(v): (Ei's req 3 kap. 12 §), this is not an additional requirement (correction), it is according to article 21(3)(a)(i).</li> <li>• Regarding our earlier answer for article 16(2)(a)(i) (Ei's req 3 kap. 18 §), 16(2)(b) (Ei's req 4 kap. 1 §), 16(4)(d) (Ei's req 4 kap. 3 §) and 19(2)(a)-19(2)(b) (Ei's req 4 kap. 4, 5, 7 §§): These requirements are extended to not only apply for type D but also type B and C (with one exception, Ei's req 4 kap. 7 §§ is only applicable for type C). The extensions of the requirements to type B and C has to do with the secondary Swedish legislation that is applicable to all types of power-generation modules that the RfG is not yet applicable to (SvKFS 2005:2, <a href="https://www.svk.se/siteassets/om-oss/foreskrifter/svkfs2005_2.pdf">https://www.svk.se/siteassets/om-oss/foreskrifter/svkfs2005_2.pdf</a>).</li> <li>• Regarding article 29(2) in RfG: We have started supervising the TSOs compliance testing (articles 41 and 42), as part of the operational notification procedure (update). We will later continue with article 29(2) and we will supervise that the TSO have a plan and we will monitor that the plan is carried out. There is now one document for the compliance testing (process) published by the TSO (link <a href="https://www.svk.se/siteassets/1.om-kraftsystemet/legalt-ramverk/natkoder/guide-anslutning-av-kraftproduktionsmodul-till-overforingssystemet.pdf">https://www.svk.se/siteassets/1.om-kraftsystemet/legalt-ramverk/natkoder/guide-anslutning-av-kraftproduktionsmodul-till-overforingssystemet.pdf</a>), but no document published by the DSOs (work ongoing). We also have meetings on a regular basis with the TSO and the DSOs. Ei has received a plan from Svenska kraftnät (Ei's ref. no 2021-100499), they have also published documents (link <a href="https://www.svk.se/om-kraftsystemet/legalt-ramverk/eu-lagstiftning-/kommissionsforordningar/natanslutning-av-generatorer-rfg/">https://www.svk.se/om-kraftsystemet/legalt-ramverk/eu-lagstiftning-/kommissionsforordningar/natanslutning-av-generatorer-rfg/</a>).</li> <li>• Regarding article 71(1) in RfG: We have now started to supervise the system operators work with connecting power-generating modules (update), their processes, and agreements. We will, if necessary, supervise that they have a plan and we will monitor that the plan is carried out. We also have meetings on a regular basis with the TSO and the DSOs. Supervision of three DSOs have commenced, Ei's ref. no 2021-100500, 2021-100501, 2021-100502.</li> </ul>
SI	26/03/2021 and 28/09/2021	<p>The status of implementation of the provisions of the GC NC's in Slovenia is unchanged. The reason for this situation is that the TSO has not yet issued new national grid code for transmission system because of large volume of different content that needs to be implemented in the national grid codes.</p> <p><b>Update from AGEN-RS:</b></p> <p>New national grid code for distribution system has been published on 19.01.2021:</p> <p><a href="https://www.uradni-list.si/glasilo-uradni-list-rs/vsebina/2021-01-0152?sop=2021-01-0152">https://www.uradni-list.si/glasilo-uradni-list-rs/vsebina/2021-01-0152?sop=2021-01-0152</a></p>

		<p><i>In Annex 5, Chapter XVI (<a href="https://www.uradni-list.si/files/RS_-2021-007-00152-OB-P005-0000.PDF">https://www.uradni-list.si/files/RS_-2021-007-00152-OB-P005-0000.PDF</a>) operational notification procedure for types A, B and C has been implemented.</i></p> <p><i>In the meantime AGEN has also requested TSO to ammend or issue new national grid code for transmission systemas soon as possible. TSO responded that new grid code is going to be issued as soon as possible but not before adoption of new national Law on Electricity Supply which is in the procedure of adoption in the parliament.</i></p>
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## B. Answers concerning the implementation of the NC DC and NC HVDC

Table 33. NRAs' clarifications on implantation of the NC DC and NC HVDC.

MS	Date	Answer
AT	15/03/2021 and 24/03/2021 and 01/10/2021 and 04/10/2021	<p><i>There are no other additional requirements than those contained in the NC DCC. In the DCC-Anforderungsverordnung the frequencyranges and time periods are regulated according to Article 12.</i></p> <p><i>Frequency range, Time period for operation:</i></p> <p><i>47,5 Hz-48,5 Hz: To be specified by each TSO, but not less than 30 minutes specified in the DCC-Anforderungsverordnung with 60 minutes</i></p> <p><i>48,5 Hz-49,0 Hz: To be specified by each TSO, but not less than the period for 47,5 Hz-48,5 Hz specified in the DCC-Anforderungsverordnung with 90 minutes.</i></p> <p><i>We would like to informyou that in coordination with the TSOs we will start the process for the implementation of the NC HVDC.</i></p> <p><b>Update from E-Control:</b></p> <p><i>We are currently setting the definitive schedule for implementation of the requirements of the HVDC NC</i></p> <p><i>TSOs are going to submit the final documents Q1/22.</i></p> <p><i>Approval by E-Control is foreseen for Q2/22.</i></p>
CZ	08/04/2021	<p><i>To DC: Similarly as in the case of the implementation of additional frequency ranges at RfG, this situation is the same in the case of the implementation of additional frequency ranges in DCC. Therefore, we will also call on distribution system operators to comply with DCC. The solution will be proposed similarly as is the case with the RfG. To HVDC: there was a mistake on our side in filling he answers within the ACER questionnaire survey. The requirements of the HVDC are implemented in accordance with Article 11.</i></p> <p><i>Last update: Firstly, it is important to say that we are going to invite the DS operator to bring the Rules of Operation of the DSO into line with the NC RfG and NC DCC. The first step will be that we will negotiate this matter with the DS operator on the next meeting which will take place next week</i></p>

		<p><i>and it will be up to the distribution system operators whether to submit the adjustment voluntarily or not. If DSOs submit the adjustment of the the Rules of Operation voluntarily and complies with the relevant regulation, an ERO decision on approval will be issued. If the DSOs operators do not modify the Rules of Operation, the ERO will make adjustments and changes to the Rules of Operation rules ex officio. This means that we will issue a decision to change the Rules of Operation without the request of the DSO operators. The decision could be issued in a few months.</i></p> <p><i>The whole process will take several months. This is not possible to get short it.</i></p>
<b>DE</b>	26/03/2021 and 21/05/2021	<p><i>I. On NC DC</i></p> <p><i>III. On the lack of approval of the requirements concerning non-mandatory demand Response services referring to TITLE III of the NC DC we have started an investigation on whether the reason for such lack of establishment in the technical rules of the designated entity VDE FNN is due the fact that such requirements are already laid down in the procurement requirements of the TSOs under the “Ordinance on Agreements on Disconnectable Loads” (“Verordnung über Vereinbarungen zu abschaltbaren Lasten (Verordnung zu abschaltbaren Lasten - AbLaV)”. In this regard, we will inform you about the outcome of our investigation within the upcoming weeks.</i></p> <p><i>II. On NC DC</i></p> <p><i>On the lack of approval of the requirements concerning non-mandatory demand Response services referred to in TITLE III of the NC DC we have learned both from competent colleagues at BNetzA and from competent TSO specialists that such requirements are indeed already laid down in the prequalification requirements for demand service providers. These requirements have to be met in order to be allowed to the demand response procurements/tenders of the TSOs under the “Ordinance on Agreements on Disconnectable Loads” (“Verordnung über Vereinbarungen zu abschaltbaren Lasten (Verordnung zu abschaltbaren Lasten - AbLaV)”. In short all the requirements laid down in TITLE III of the NC DC are specified in the AbLaV, in the said prequalification requirements established by the TSOs and in their Annexes, the latter including the “FNN Technical Requirements on Automated Frequency Relieve” established by the designated entity VDE FNN.</i></p> <p><i>You may find the AbLaV here: <a href="https://www.gesetze-im-internet.de/ablav_2016/BJNR198400016.html">https://www.gesetze-im-internet.de/ablav_2016/BJNR198400016.html</a></i></p> <p><i>You may find the prequalification requirements and their Annexes here: <a href="https://www.regelleistung.net/ext/static/abla">https://www.regelleistung.net/ext/static/abla</a> (see the links on the right hand side of the webpage under the title “Unterlagen zur Präqualifikation einer abschaltbaren Last finden Sie hier:”).</i></p> <p><i>We have also learned that the AbLaV and the prequalification requirements have been publically consulted with stakeholders when they were first introduced and also every time they were amended.</i></p>
<b>EE</b>	26/03/2021	<i>NC HVDC - There's been a mistake here.</i>

		<p><i>We have misunderstood something in the past and have sent the wrong comment. We confirm that the values of the general application requirements approved for the HVDC are the same as those adopted for the implementation of the NC HVDC. Please see attachment on page 20.</i></p> <p><i>We would like to confirm that the national defining provisions under NC DC and NC HVDC are based on the respective regulations. No exceptions have been made</i></p>
<b>ES</b>	08/10/2021	<p><i>Status of the requirements of general application NC DC: Approved in 2020</i></p> <p><i>Status of the requirements of general application NC HVDC: Approved in 2020</i></p> <p><i>Royal Decree 647/2021 (<a href="https://www.boe.es/buscar/doc.php?id=BOE-A-2020-7439">https://www.boe.es/buscar/doc.php?id=BOE-A-2020-7439</a>) was approved in July 2020 and set the general framework for the national implementation of the Regulation (UE) 2016/631 and Regulation (UE) 2016/1388, followed by the approval of the technical order TED/749/2020 (<a href="https://www.boe.es/buscar/act.php?id=BOE-A-2020-8965">https://www.boe.es/buscar/act.php?id=BOE-A-2020-8965</a>), where more detail and values are provided. (corresponding to the parameters and additional requirements).</i></p> <p><i>About the compliance testing chapter, it is published on TSO webpage (<a href="https://www.ree.es/es/clientes/consumidor/puesta-en-servicio-de-nuevas-instalaciones">https://www.ree.es/es/clientes/consumidor/puesta-en-servicio-de-nuevas-instalaciones</a>).</i></p>
<b>FR</b>	30/09/2021	<p><i>Operational notification and compliance testing</i></p> <p><i>The compliance testing procedure is detailed in RTE's technical documentation: articles 5.3.1 and 5.3.2 describing the overall process for all customers.</i></p> <p><i>The control system put in place by RTE is structured in 3 stages:</i></p> <ul style="list-style-type: none"> <li><i>- step 1: Information and simulations to be provided before the first switching on (operational notification of switching on)</i></li> <li><i>- step 2: Simulations and tests to be carried out before the first energy transfer (provisional operational notification)</i></li> <li><i>- step 3: Tests to be validated before access to the final network (final operational notification)</i></li> </ul> <p><i>Each step is associated with sheets on the various elements to be checked / tested (E sheets before switching on, I sheets before the first energy transfer, F sheets before access to the final network).</i></p> <p><i>Concerning the interim operational notification, it can be provided after the provision of the declaration of conformity, certificates of conformity and simulations demonstrating the conformity with the relevant requirements (in particular the sheets I in the aforementioned technical documentation articles).</i></p> <p><i>When tests are necessary (tests of the information exchange system, frequency and voltage, etc.), other documents (including the F sheets in the aforementioned technical documentation articles, etc.) are sent to the customer in order to describe the performance of the tests.</i></p>

IE	06/10/2021 and 13/10/2021	<p>Regarding (163) <i>[of the IMR]</i>, the TSO has submitted to the CRU (not yet approved) proposed changes to the Grid Code to ensure alignment with the requirements of HVDC NC (see Section 7.5.1.1(u) and PPM1.5.1(e): <a href="https://www.eirgridgroup.com/site-files/library/EirGrid/MPID289_GC10-Red-Line-Version.pdf">https://www.eirgridgroup.com/site-files/library/EirGrid/MPID289_GC10-Red-Line-Version.pdf</a>). The allowance in Article 39(2)(b) is noted in both sections.</p> <p>Regarding (167) <i>[of the IMR]</i>, the additional requirements still apply in Ireland. As previously stated the TSO has sought amendments to the next iterations of the CNCs to reflect this.</p>
LU	12/03/2021 and 26/03/2021	<p>Regarding the HVDC requirements, as you may remember our comments on the implementation monitoring report, we haven't received any submission, and thus haven't approved anything.</p> <p>The reason is that in Luxembourg, there are no existing electrical power systems that could be qualified as HVDC-connected systems, which would fall under the scope of the NC HVDC. There is neither no such systems planned on a long term.</p> <p>Update: As Creos and Amprion form a common LFC area (and more widely LU and DE form a common electricity market), ILR will contact BNetzA to discuss the content of their decision on the HVDC NC and we will come back to Creos to discuss with them how to adapt these requirements to LU.</p>
NL	26/03/2021 and 22/04/2021	<p><b>The approval of requirements of general application of NC DC:</b> Day op approval: 17 July 2020 Link to the national decision: <a href="https://zoek.officielebekendmakingen.nl/stcrt-2020-38255.html">https://zoek.officielebekendmakingen.nl/stcrt-2020-38255.html</a></p> <p><b>Compliance Testing Chapter 2, Title IV of NC DC and Chapter 2, Title VI of NC HVDC:</b> Documentation for the implementation of Chapter 2, Title IV of NC DC <a href="https://www.netbeheernederland.nl/_upload/Files/Regulering_20_65ac96c7a0.pdf">https://www.netbeheernederland.nl/_upload/Files/Regulering_20_65ac96c7a0.pdf</a> <a href="https://www.netbeheernederland.nl/_upload/Files/Regulering_20_4f455c49ff.pdf">https://www.netbeheernederland.nl/_upload/Files/Regulering_20_4f455c49ff.pdf</a></p> <p>Documentation for the implementation of Chapter 2, Title VI of NC HVDC <a href="https://www.netbeheernederland.nl/_upload/Files/Regulering_20_0b9f270fe0.pdf">https://www.netbeheernederland.nl/_upload/Files/Regulering_20_0b9f270fe0.pdf</a></p>
PL	26/03/2021	<p>We would like to inform you that the TSO has not yet submitted a proposal to change requirements of general application NC DC, so our explanations presented in the survey remain valid.</p>
PT	31/03/2021	<p>Status of the requirements of general application NC DC and NC HVDC: Proposals for national implementation of NC DCC and NC HVDC were</p>

		<p><i>submitted in time by the TSO to DGEG. These proposals were previously consolidated between TSO and DSO. These proposals were sent by DGEG to the tutelage who have not yet published them, as the transposition of the electricity internal market directive is in progress.</i></p> <p><i>Consultation Art. 9(1)(d) of NC DC (Sec. 4.6 of IMR): In Portugal, ERSE have put in place a Pilot-Project of demand participation on the regulation reserve market.</i></p> <p><i>The Pilot Project, which started on April 2, 2019, aims to ensure equal treatment in the participation of qualified consumers, or their representatives, in the regulation reserve market.</i></p> <p><i>For this purpose, it was decided to launch a Pilot Project for the participation of consumption in the Regulation Reserve Market, whose operational rules were submitted to public consultation, through the 67th ERSE public consultation, which took place from 1 to 31 October 2018.</i></p> <p><i>Interim Operational Notification Art. 24 of NC DC and Art. 57 and Art. 52 of NC HVDC (Sec. 5.2 of the IMR)</i></p> <p><i>Compliance Testing Chapter 2, Title IV of NC DC and Chapter 2, Title VI of NC HVDC (Sec. 5.3 of IMR). The requirements related to the DCC and the HVDC awaits publication, as referred previously</i></p>
<p><b>SE</b></p>	<p>25/03/2021 and 07/10/2021</p>	<p><b>NC DC:</b> <i>We would like to correct our answer for article 15(2)(a) and (b) in DCC, it should be article 15(1)(a) and (b) (mistake, typo). Ei will supervise the TSO regarding the articles 13 to 19 in DCC and the standards for communication, requirements regarding reactive effect etc. We will supervise that they have a plan and we will monitor the work according to the plan. We have meetings on a regular basis with the TSO.</i></p> <p><i>Regarding article 19(1)(c), the TSO have issued secondary legislation early 2021: SvKFS 2021: <a href="https://www.svk.se/siteassets/1.om-kraftsystemet/legalt-ramverk/foreskrifter/svkfs-2021_1_forbrukningsfrankoppling.pdf">https://www.svk.se/siteassets/1.om-kraftsystemet/legalt-ramverk/foreskrifter/svkfs-2021_1_forbrukningsfrankoppling.pdf</a></i></p> <p><i>Regarding article 18.1 in DCC, according to the TSO work is ongoing and they also refer to the link <a href="https://www.svk.se/utveckling-av-kraftsystemet/systemansvar--elmarknad/kraftsystemhubben/">https://www.svk.se/utveckling-av-kraftsystemet/systemansvar--elmarknad/kraftsystemhubben/</a></i></p> <p><i>Regarding compliance testing (DCC), Ei will supervise the TSO later this year and we will supervise that they have a plan and we will monitor their work according to the plan. We also have meetings on a regular basis with the TSO.</i></p> <p><b>HVDC:</b> <i>Regarding the articles in HVDC: Ei will supervise the TSOs requirements regarding HVDC in 2022. We will supervise that they have a plan and we will monitor the plan.</i></p> <p><b>Update from Ei:</b></p> <p><i>Our planning is now for 2023.</i></p> <p><i>Regarding compliance testing (HVDC), Ei will supervise the TSO later next year and we will supervise that they have a plan and we will monitor their</i></p>

		<p><i>work according to the plan. We also have meetings on a regular basis with the TSO.</i></p> <p><b>Update from Ei:</b></p> <p><i>Our planning is now for 2022.</i></p>
<b>SI</b>	<p>26/03/2021 and 28/09/2021</p>	<p><i>The status of implementation of the provisions of the GC NC's in Slovenia is unchanged. The reason for this situation is that the TSO has not yet issued new national grid code for transmission system because of large volume of different content that needs to be implemented in the national grid codes.</i></p> <p><b>Update from AGEN-RS:</b></p> <p><i>AGEN has requested TSO to ammend or issue new national grid code for transmission system as soon as possible. TSO responded that new grid code is going to be issued as soon as possible but not before adoption of new national Law on Electricity Supply which is in the procedure of adoption in the parliament.</i></p>
<b>SK</b>	<p>14/06/2021</p>	<p><i>The public consultation [referred to in Article 9(1)(d) of the NC DC] has not been carried out because of the absence of the demand units connected at a voltage level below 110 kV</i></p>

## Annex II: List of abbreviations & country codes

Acronym	Definition
ACER	Agency for the Cooperation of Energy Regulators
DC	Demand Connection
DSO	Distribution System Operator
EU	European Union
GC NC	Grid Connection Network Code
HVDC	High Voltage Direct Current
IMR	Implementation Monitoring Report
NC	Network Code
NRA	National Regulatory Authority
RfG	Requirements for (grid connection of) Generators
TSO	Transmission System Operator

ISO code	Country
AT	Austria
BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
ES	Spain
FI	Finland

ISO code	Country
LT	Lithuania
LV	Latvia
HU	Hungary
IT	Italy
LU	Luxembourg
NL	Netherlands
PL	Poland
PT	Portugal
RO	Romania



FR	France
GR	Greece
HR	Croatia
IE	Ireland

SE	Sweden
SI	Slovenia
SK	Slovakia

Abbreviation	NRA
ACM	Autoriteit Consument & Markt/Authority for Consumers & Markets
ARERA	Autorità di Regolazione per Energia Reti e Ambiente/Regulatory Authority for Electricity, Gas and Water
AGEN-RS	Agencija za Energijo/Energy Agency
ANRE	Autoritatea Națională de Reglementare în Domeniul Energie/Regulatory Authority for Energy
BNetzA	Bundesnetzagentur/Federal Network Agency for Electricity, Gas, Telecommunications, Posts and Railways
CRU	The Commission for Regulation of Utilities
CRE	Commission de régulation de l'énergie
CREG	Commission de Régulation de l'Électricité et du Gaz/Commissie voor de Regulering van de Elektriciteit en het Gas
CNMC	La Comisión Nacional de los Mercados y la Competencia/The National Commission on Markets and Competition
DUR	Forsyningstilsynet/Danish Utility Regulator
E-Control	Energie-Control Austria
ECA	Konkurentsiamet/Estonian Competition Authority
Ei	Energimarknadsinspektionen/Swedish Energy Markets Inspectorate
ERO	Energetický regulační úřad/Energy Regulatory Office
ERSE	Entidade Reguladora dos Serviços Energéticos/Energy Services Regulatory Authority
EWRC	комисия за енергийно и водно регулиране (KEBP)/Energy and Water Regulatory Commission

Abbreviation	NRA
EV	Energiavirasto/Energy Authority
HEA	Magyar Energetikai és Közmű-szabályozási Hivatal/ The Hungarian Energy and Public Utility Regulatory Authority
HERA	Hrvatska energetska regulatorna agencija/Croatian Energy Regulatory Agency
ILR	Institut Luxembourgeois de Régulation
PUC	Sabiedrisko pakalpojumu regulēšanas komisija/Public Utilities Commission
RAE	Ρυθμιστική Αρχή Ενέργειας/The Regulatory Authority for Energy
RONI	Úrad pre reguláciu sietových odvetví/Regulatory Office for Network Industries
URE	Urząd Regulacji Energetyki/Energy Regulatory Office
VERT	Valstybinė energetikos reguliavimo taryba/National Energy Regulatory Council

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