REPORT ON "PUBLIC CONSULTATION: MAXIMUM CAPACITY THRESHOLDS FOR TYPES B, C AND D POWER-GENERATING MODULES"

Elia – TSO Proposal following the NC RfG Art. 5(3)

September 2017

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1. INTRODUCTION

From 19th May 2017 till the 20th June 2017 Elia organized a public consultation relating to the proposal for maximum capacity thresholds for types B, C and D power-generating modules (PGM) as defined in Network Code Requirements for Generators (NC RfG)[1] art. 5 and aimed to fulfill the requirement laid upon the relevant transmission system operator (TSO), Elia, to hold a public consultation on this topic, as defined in NC RfG art. 5(3). The consultation document can be accessed via the following link.

This report aims to consolidate the consultation feedback received and presents Elia's vision on these consultation responses.

This formal public consultation has been proceeded by an active and interactive stakeholder debate in the Elia Users' Group and in multiple bilateral meetings between Elia and stakeholders for specific issues. To discuss the implementation of the Network Codes in Belgium, the Task Force Implementation Network Codes was created at the end of 2015 by the Users' Group as sub-group of the Working Group Belgian Grid, to serve as a platform to discuss and analyze content-related aspects of the Network Codes.

This Task Force Implementation NC started at the end of 2015 and continued till the end of Q1 2017 and the status was frequently reported in the WG Belgian Grid meetings. At the end of 2015 and early 2016, this Task Force started with a first iteration on Significant Grid Users, and led to a draft proposal on the maximum capacity thresholds of types B, C and D PGM. This proposal served as working hypothesis for the different technical discussions (sessions) of various topics that took place thereafter in this Task Force until the beginning of 2017. Taking these technical discussions into account, the initial threshold proposal has been reviewed during a second iteration on Significant Grid Users in the first quarter of 2017.

The Users' Group debates and bilateral meetings (e.g. Febeliec on issues related to CDS) gave all parties the opportunity to present their comments and to raise their concerns related to the thresholds proposal and other aspects of the Network Codes. The final proposal on the maximum capacity thresholds, that was subject to consultation, has taken these stakeholder feedbacks into account and has been defined in coordination with the distribution system operators (DSOs) within Synergrid, especially w.r.t. the threshold of type B PGM.

More information on the agenda, minutes and presentations of this Task Force can be found on the Elia website. The scope, technical and legal aspects of the proposal on maximum capacity thresholds of types B, C and D PGM and the argumentation can be found in the public consultation document.

The timing to submit to the competent authorities the proposal on the maximum capacity thresholds for types B, C and D power-generating modules is not specified in the NC RfG. Therefore it is proposed to use the same deadline as specified in art. 7(4) of the NC RfG for

[1] Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators, http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0631&from=EN

the proposal on requirements of general application. i.e. 2 years after the entry into force of the NC RfG, 17 May 2018.

In the remainder of this text, section 2 presents the feedback received. This feedback received is further discussed in Section 3. Finally, Section 4 addresses the stakeholder comments that are indirectly related to the public consultation on maximum capacity thresholds.

2. FEEDBACK RECEIVED

Consultation reponses have been received from the following parties:

- BGA ('Belgian Generators Association': grouping the federations BOP, COGEN Vlaanderen, EDORA, FEBEG and ODE)
- Febeliec
- Public DSOs (Eandis, Infrax, Ores, Resa and Sibelga)

The responses have been indicated as non-confidential. The original consultation responses received are included in Annex I of this report and will also be made available on the Elia website, together with this consultation report.

3. DISCUSSION OF THE RECEIVED FEEDBACK

In the public consultation document, Elia raised a number of specific questions next to the opportunity for stakeholders to provide general feedback. The remainder of this section clusters the reactions received per theme. For each theme, the responses received are consolidated followed by an Elia reaction.

Elia made its best efforts to summarize the reactions received. The exact formulation, the detailed argumentation and context for each reaction can be verified in the individual responses received (included in Annex I).

1. Type B

1.1. Maximum Capacity Threshold of Type B

1.1.1. Summary of the feedback received

BGA does not question the legal analysis performed by Elia, but regrets that the legally most indicated approach is the option of a lower threshold for type B of 250 kW, combined with derogations for the PGMs having a maximal capacity between 250 kW and 1 MW of type B. BGA claims that this chosen option goes beyond a pure legal implementation choice and involves more risks as there is no guarantee on obtaining the envisaged derogations. (More comments on derogations see Section 4.1 Derogations).

BGA favors the option of 1 MW instead and considers the choice of 250 kVA by Elia as rather arbitrary and mainly based on the threshold for remote control of active power in the Walloon Grid Code, in opposition to the threshold of 1 MVA (actually 1 MVA or lower) in the Flemish Grid Code. It is not clear to BGA why exactly the value of 250 kW is chosen, instead of 300 kW, 500 kW or even 1 MW. Additionally, BGA communicates not yet to be convinced by the argumentation in the consultation document:

- Regarding communication and information exchange, BGA understands the need for SO's to have a better knowledge of the power flows on the network, but does not understand why this requires a remotely controlled installation and asks if a simple Programmable Logic Controller (PLC) provides the needed monitoring capability.

  BGA is opposed to imposing expensive remote control boxes to all installations as from 250 kW and proposes that thresholds for imposing remote controlling should be set at 1 MW, irrespective of the thresholds that are set in the framework of the NC RfG.

- Regarding electrical protection schemes, that are asked for by the DSOs since many years in the connection process and settings given by the DSOs for the protection of the local grids, BGA does not see the need to tailor the threshold of type B to this requirement, as electrical protection schemes are required even today as from 10 kW.
- Regarding system restoration, BGA understands the need to have 'control' of the production that is present on the feeder but questions why this is crucial as from 250 kW on.

Febeliec is not convinced of the proposed legal solution and prefers applying the least stringent threshold of 1 MW instead, at least until it can be proven in the future that a more stringent value should be applied (after a cost-benefit analysis):

- The option with derogations involves more risks as the derogations are only applicable for a limited time and it is still uncertain if these will be granted.
- Applying more stringent thresholds than the maximum thresholds authorized by the NC RfG does not balance the advantages for Elia for system operation with the financial, administrative and technical burden for individual grid users. If Belgium proposes to apply more stringent thresholds it misaligns itself with France and other member states, which seem to follow a wait-and-see approach. This is not aiming for harmonization on European level and negatively impacts the future investment climate in Belgium and the international competitive position.

- Despite request from stakeholders Elia has never provided a quantitative cost-benefit analysis for its request for more stringent thresholds, allowing it to justify its position.

The public **DSOs** fully support the proposed maximum capacity threshold B and the proposed global approach.

1.1.2. Elia vision

The public consultation and the preceding discussions have shown that there is a clear need to choose a threshold of 250 kW. At the base of the choice of the threshold are real-time communication and control during normal operation and the need to be able to control the behavior of distributed generators during emergency and restoration conditions.

The expected volume of units in this range 250 kW – 1 MW is important and even though it does not negatively impact the stability of the transmission system (for this reason some requirements such as FRT are proposed to be relaxed for this class of units), it greatly impacts in the less meshed networks in which they are connected such as the ones of the DSOs. This greatly justifies the need for real-time communication and control during normal operation and the need to be able to control the behavior of distributed generators during emergency and restoration conditions.

Choosing a threshold of 1 MW would not allow to cover these needs and would therefore significantly affect the grid capacity to connect new units in the range 250 kW – 1 MW. In case a threshold of 1 MW is chosen and information exchange requirements are applied as of 1 MW, this would exclude smaller units, in areas with congestion, to connect as on the one hand these are not controllable and on the other hand the connection of a significant amount of these units might risk the quality and security of the supply.[2]

Choice of the threshold A/B to 250 kW is not arbitrary

The stakeholders have expressed their doubts on the choice of the threshold for type B with respect to other possible thresholds in the range 250 kW – 1 MW.

Following the ENTSO-e guidelines (IGD), alignment to existing regulation forms one of the pillars for the choice of the thresholds.

The proposal of Elia is aligned with the publics DSOs, which are and will be considerably more impacted by the installation of units in the range 250kW – 1MW. More specifically, the proposal of thresholds is aligned with the distribution grid codes[3], in which the threshold of

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[2] VREG acknowledged this Synergrid argumentation in its public consultation report on the adaptation of the Regional Grid Codes TRDE: http://www.vreg.be/sites/default/files/document/consultation/verwerking_opmerkingen_consultatie_trde.pdf (Page 12)

[3] VREG: Technisch Regelement Distributie Elektriciteit (Art. III.3.1.3 (3)): http://www.vreg.be/sites/default/files/tdre_versie_5_mei_2015.pdf

CWaPE : Règlement Technique pour la gestion des réseaux de distribution d'électricité (Art. 46(3)): https://wallex.wallonie.be/PdfLoader.php?type=doc&linkpdf=19977-20974-13168

Brugel : Technisch Reglement Elektriciteit (Art. 73(4)): http://www.brugel.be/Files/media/T17/SANS_20130606_RUMUHIZI_75601_1.pdf

250 kVA represents the power of a PGM from which connection to Medium Voltage is systematically imposed. This threshold is of application for every region in Belgium.

Such an approach is also followed in Germany where the current proposal for the threshold between type A and B (135kW) is aligned with the connection criteria between Low Voltage and Medium Voltage connections. In France, there is also a wish to progressively use the value of 250 kW as the threshold value between type A and B. A roadmap involving the evolution of the communication system has been drafted in coordination with stakeholders.

Differentiating the requirements between Low Voltage and Medium Voltage connection is also how the CENELEC standards are categorized.

Moreover, the capability requirements of type B, especially in terms of remote control and reactive power, are highly relevant for the reliability and (future) management of the Medium Voltage grid. Making a distinction between the LV and MV makes sense as the influence of MV-connected units on the transmission grid and the influence of the latter on the MV-connected units is much greater than for LV-connected units.

Finally, at national level, there is a clear willingness to simplify legal implementation, readability and compliance process as a driver to facilitate grid access. The reduction of the number of the thresholds across the different regulations supports this goal.

Elia has largely justified the proposed thresholds, not only in the consultation document but also in the numerous Task Force Implementation NC meetings. As described in the ENTSO-E IGD for national implementation for network codes on grid connection[4], Elia is not legally required to provide a cost-benefit analysis (CBA) for this request. A CBA is, in this respect, only required to apply any revised requirements retrospectively to existing generators, in accordance with art. 4(3) of the NC RfG.

Choice of the threshold A/B to manage uncertainties linked to the future developments.

A stakeholder [BGA] has suggested aligning to the maximum threshold of 1 MW as there is uncertainty for future development and current needs should be used as reference.

Elia would like to clarify that a given level of uncertainty is intrinsic for assessment of future development; nevertheless the best estimate for the evolution of the production park should be used to define the threshold limits.

This best estimate, as also discussed and presented during the Task Force meetings, foresees an increase of the volume of DG units to be connected in Belgium. This vision is in line with the large majority of European and national scenarios. Using as reference only current situation and needs (i.e. making the hypothesis that the volume of DG units will not increase in the future) is very dangerous for the security of supply and could increase the risk of retroactive application of the NC requirements to existing users in the future.

It also needs to be highlighted that the process of modification of the legislation is complex and takes time. Elia builds its choice based also on past experiences at the EU level for which the volume increase of specific technologies (for example PV in Italy or wind units in Spain) has been so fast that technical regulation could not be adapted on time.

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[4]ENTSO-E guidance document for national implementation for network codes on grid connection.
https://www.entsoe.eu/Documents/Network%20codes%20documents/NC%20RfG/161116_IGD_Selecting%20national%20MW%20boundary_for%20publication.pdf

In addition, a basic requisite of the new network codes and regulation, especially on connection matters, is to be robust for some years to give certainty to the investments and to limit the needs for frequent adaptations.

Choice of the threshold A/B below the maximum value authorized by the NC RfG does not negatively impact the future investment climate for Belgium and the competitiveness of the current investments compared to other European countries.

The current choice of threshold, other than the maximum values authorized by the NC RfG has been criticized by a stakeholder [Febeliec] as they claim it would negatively impact the future investment climate in Belgium and reduce the competitiveness of the current investments compared to other European countries.

Elia would like to draw the attention to the fact that the proposed choice of thresholds would facilitate the grid access of the expected future generation mix in Belgium (i.e. more decentralized generation and more renewable generation). Furthermore, the current choice of thresholds of other European TSOs is, in most of the cases, more constraining than or as constraining as the Belgian ones, as illustrated in the consultation document. This greatly supports the request of the stakeholders to create a level playing field for generating unit at European level and will allow homogeneous development of products across Europe (e.g. Spain, Germany, Italy) with the consequence of increasing the current competitiveness and ease the future investment climate.

Need for strong system controllability in case of system restoration

Regarding the needs related to system restoration Elia would like to clarify once more that having a controllable injection during disturbed conditions is of paramount importance to succeed in maintaining a stable system and speed up the process, in case of reconstruction or to re-energize all clients as fast as possible.

This need is particularly true for renewable and distributed generation whose injection is intrinsically fluctuating and is much less forecastable at park level than the load. Specifically as units of type B are, due to their size and number, gradually resynchronized during system restoration to a weaker network, this controllability requirement becomes strictly necessary.

Need for bidirectional communication with units from 250 kW

Elia understands the concerns and questions of the stakeholders regarding the need for real-time control, in particular for units in the range 250 kW – 1 MW, and the related costs and therefore wishes to make some clarifications.

First of all, and as mentioned in the text of the public consultation related to the maximum capacity thresholds of types B, C and D, the current and expected evolution of the energy mix in Belgium, and more particularly the “shift” towards decentralized production (whose power injection, by their nature, varies considerably more than those of conventional thermal generators), makes it necessary, in addition to the ability to predict and observe their behavior in real time, to be able to remotely control the active and reactive power they generate, in order to operate the grid and to maintain the same quality of service in the future.

The lack of control of the units in the range 250 kW – 1 MW might lead to problems with voltage quality, congestions and even power supply security. Therefore, the monitoring of their real-time behavior is therefore essential but not sufficient.

With regards to the cost, Elia and the public DSOs can confirm that, in general, system operators are systematically trying to achieve the technical and economic optimum and to

use, as far as possible, standardized solutions which perfectly match with the aim of maximum cost limitation.

Elia and the public DSOs have, even recently, reflected about this topic with the objective to ensure that the selected technical solutions will always correspond with the aforementioned techno-economic optimum.

In addition, the public DSOs mentioned to Elia that the concern of the stakeholders regarding the “cost” had to be clarified. Indeed, the invoice amount for the implementation of a real-time remote control and monitoring system does not only include the devices (RTU and modem) but also:

- the programming of automatic “fail safe” instructions depending on the configuration of each customer,
- the inverter/battery as auxiliary supply source to still be able to communicate the status or alarm when the electricity grid is off,
- the integration into the SCADA system and all the tests needed to ensure that everything works correctly,
- the integration into the modulation computation algorithm (if applicable),
- the costs of remote communication and preventive and curative maintenance cost during the lifecycle of the connection.

Therefore, the “cost” has to be considered in its entirety.

In this respect, the public DSOs remain available, where needed, to have a discussion with the stakeholders and the CDSOs in order to clarify this point.
Elia would like to indicate that the DSOs within Synergrid are analyzing the possibility to standardize over all regions the required functionalities in terms of remote monitoring and control in real-time.

Elia is also exploring, for units with a maximum capacity between 250 kW and 1 MW connected to the transmission and local transport grid, the possibility to use a less expensive communication protocol allowing to meet the minimal requirements in terms of remote monitoring and control, especially based on proposals and experiences in neighboring countries.

Finally, Elia encourages public DSOs, CDSOs and stakeholders to discuss and to find an optimal techno-economic solution, that takes into account the needed requirements in terms of quality, response time, (cyber)security, interoperability and availability on the market. Elia will also participate in this discussion to ensure that the proposed solution is compatible with Elia’s requirements as a TSO and to eventually apply it to Type B units connected to the transmission and local transport grid.

2. Type C

2.1. Maximum Capacity Threshold of Type C

2.1.1. Summary of the feedback received

The public DSOs agree with the proposed threshold of 25 MW, although they indicated to be (almost) not affected by the requirements for Type C.

Febeliec did not comment on the proposed Type C threshold.

BGA proposes to use a threshold B/C of 50 MW instead of 25 MW for the following reasons:

- To avoid very stringent requirements for PGMs with a maximum capacity between 25 MW and 50 MW and connected ≥ 110 kV, who are considered as type D units. Especially the requirements on FRT and reactive power of type D are problematic for most of the smaller units.
- The presence of large cogeneration units in the range of 25 MW to 50 MW (e.g. the General Electric LM6000 being a typical gas turbine used in cogenerations) who are often embedded in industrial sites. Imposing Type C requirements seems exaggerated because of their little relevance for the grid.
- The stringent requirements for existing PGMs in case of a substantial modernization.
- It is irrelevant to determine the limit based on current regulation. Network Codes are an opportunity to harmonize the current regulations within Europe to create a level playing field for European grid users.
- The stringent requirement for type C (and D) SPGMs as regards reactive power absorption.

Further, BGA mentions that Elia did not mention the topic of substantial modernization in the consultation document, while this has an impact on the choice of the B/C threshold. In case of substantial modernization, existing units of type C need to comply with the NC RfG.

2.1.2. Elia vision

Coordination between neighboring TSO is ongoing

The ENTSO-e IGD on the choice of the maximum capacity thresholds for the PGM of type B, C suggests to apply the existing legislations as part of the motivation to choose the thresholds. Moreover the principle of ‘evolution rather than revolution’ has been considered by Elia in the choice of the thresholds.

Elia is highly involved in different ENTSO-e WGs on NC drafting and national implementation of the NCs where the national implementation status, national issues and guidance are discussed and then proposed in order to reach a coordinated implementation of the NCs. So far it seems that, based on current level of discussion at their national level, most of neighboring countries have chosen thresholds taking into account existing legislations as this is done in Belgium. Elia has also observed that the Elia proposal is by far not extreme for any of the thresholds and should not penalize Belgian stakeholders in comparison with stakeholders active in other EU countries.

In addition, Elia is engaged since the beginning of 2017 in extensive discussions with neighboring TSOs (i.e. RTE, Tennet NL, Amprion, Tennet DE, Creos) about the proposal

on the maximum capacity thresholds of types B, C and D PGM and about the motivation of these threshold proposals. Minutes of these meetings will be shared with concerned regulators, member states and other TSOs in order to support coordinated implementation of the NC.

One can therefore conclude that Belgium is not the most stringent country in Europe and that technologies necessary to comply with the proposed requirements will be available on the market and that as such a level playing field is guaranteed.

Type C requirements are not impossible to meet for the proposed thresholds

This consultation is mainly related to the proposal of the maximum capacity thresholds for the PGM of type B, C and the focus is not on the requirements.

Documents provided by BGA do not show the impossibility to be compliant for type C (i.e. fault ride through capability with a remaining voltage of 30%).

In addition, the FRT requirements are not impacted by the Type C threshold, except for the Type C units between 25 MW and 50 MW connected ≥ 110 kV. If this issue with FRT is only related to a specific generator model, an individual derogation might be submitted by the generators.

Elia also recognizes the particularity of substantial modernization but refers to the discussions that are ongoing in the WG Belgian Grid wherein general criteria are being determined. The first information related to substantial modernization as well as a report of the first discussions are publicly available on the website of the WG Belgian Grid.

Presence of large cogeneration units

BGA refers to the LM6000 as an example for the presence of large cogeneration units in the range of 25 MW to 50 MW. This example is only one technology and specific supplier and Elia prefers to avoid the tailoring of the regulation to exceptions or to the characteristics of one specific machine.

3. Type D

3.1. Maximum Capacity threshold of Type D

3.1.1. Summary of the feedback received

BGA and the public DSOs do not question the proposed threshold of 75 MW in their consultation feedback.

Febeliec mentions that applying more stringent values that the maximum limits authorized by the NC RfG for the threshold C/D (and threshold A/B) does not balance the advantages for Elia with the financial, administrative and technical burden for individual grid users.

For the sake of clarity, BGA asks Elia to confirm that offshore wind parks will be considered type D automatically, even though individual units have capacities smaller than 10 MW.

3.1.2. Elia vision

The NC RfG specifies the possibility for the relevant TSO to choose thresholds below the maximum authorized capacity threshold, in accordance with article 5 of this network code. Following the NC RfG, the choice of the threshold does not require a cost-benefit analysis. However, Elia has always considered the stakeholders feedback regarding the financial, administrative and technical burdens for the different individual grid users and has adapted its proposed technical requirements accordingly, when considered appropriate. For example, the initial proposal w.r.t. reactive power capability has been reviewed and updated to reduce the costs of the individual grid users.

Elia confirms that, in line with the NC definition of PPM, the total installed power of a PPM is to be considered and not the installed power of each single turbine. As a matter of example, the current wind farm connected to the shore of the North Sea are to be considered as existing PPM of type D.

3.2. Type D with voltage at the connection point ≥ 110 kV

3.2.1. Summary of the feedback received

According to the NC RfG each PGM connected to a voltage level higher or equal to 110 kV is considered type D. Febeliec and BGA welcome the derogation proposed by Elia to reflect the same type A and B requirements for units with a maximum installed capacity lower than 25 MW and connected ≥ 110 kV as this prevents exaggerated costs for installations with rather insignificant grid impact.

BGA and Febeliec propose to extend the derogation to also cover installations of type C but connected ≥ 110 kV not as a type D but as a type C. The main arguments are:

- to avoid a discrimination between identical generation facilities merely on the voltage level of the grid to which they are connected and not to their own connection's voltage level nor technical differences between such installations.
- In addition, BGA mentions that the current Type D FRT requirement of 200 ms is very demanding for units with a maximum installed capacity lower than 75 MW.
- BGA claims as well that in some regions (e.g. Boucle de l'Est), generators are imposed to connect to 110 kV and are involuntarily confronted with more expensive connection costs.

BGA agrees with the approach to adapt the Type D requirements via a derogation but considers that these derogations should give as much certainty and stability as possible, and should clearly surpass a 5 year duration.

3.2.2. Elia vision

Evolution of grids from 70kV to 110kV does not create discrimination

The current practice of several European TSOs, based on technical reasoning, is to limit the maximum size of the generators to a given voltage levels (e.g. France, Germany and The Netherlands). In Belgium, this practice only exists for the connection of generating units to the DSO or for the selection of a connection to the DSO or TSO grid (with room for case by case analysis between 10 MVA and 25MVA). Furthermore, in the context of requests for connection to Elia's grid (orientation studies and detailed studies), the selection of the connection point and its voltage level is always made following a specific study aiming at finding the most techno-economic optimal solution. In no case a prior decision is taken to impose a connection to an 110kV connection point.

In the context of the Boucle de l'Est and of other regional grids, Elia is always proposing the most techno-economic optimal solution for the evolution of the grid. The migration from 70kV to 110kV or 150kV in several regions is justified by the fact that 70kV equipment is no more available as a worldwide standard and/or that most manufacturers propose 110kV equipment for this purpose with very limited additional cost. Environmental impact of the change between 70kV and 110kV is also very limited for an increase of the transport capacity of 57% with the same conductors. This increase of the transport capacity is needed in order to provide hosting capacity to decentralized generation. More details on motivation for evolution of 70kV grids towards 110kV and 150kV grids is available in the "Plan d'Adaptation Wallon 2017-2024"[5]. Concerning the intention to propose an exemption of some requirements for the PGM having a maximum capacity equivalent to PGM of type A and B but connected at a voltage level above or equal to 110 kV, it seems that other neighboring TSOs have a similar view.

[5] http://www.elia.be/fr/a-propos-elia/publications/plans-d-investissements-et-de-developpements/plans-d-adaptation-region-wallonne

4. Indirect Stakeholder comments on the proposal on maximum capacity thresholds for PGM of type B, C and D

Elia presented in the consultation document a package approach (i.e. a technical solution covering both thresholds and aspects linked to technical requirements), that not only addresses the proposal on maximum capacity thresholds B, C and D PGM but provides also an early insight in parts of the relevant general requirements that are linked to the proposal of maximum capacity thresholds for PGM of type B, C and D PGM . However, the information provided in the consultation document related to the proposal of national implementation of the non-exhaustive technical requirements should not be understood as exhaustive and was therefore not consulted on. The final proposal on general requirements will be subject to public consultation later on, in 2018. The received stakeholder reactions related to aspects beyond the scope of this public consultation (i.e. about the national implementation of the non-exhaustive technical requirements) will be considered in the context of the workshops on the finalization of the general requirements. In the context of a constructive debate, Elia considers it nevertheless useful to provide a reaction on several of these aspects. Therefore, these comments are hereafter discussed and clustered in 6 topics:

- 4.1 Derogations
- 4.2 Impact beyond connection codes
- 4.3 European standards
- 4.4 Coordination with DSOs and CDSOs
- 4.5 Requirements Type B PGM
- 4.6 Other comments

Sections 4.1 till 4.3 are closely related to the package approach, while Sections 4.4 till 4.6 are diverse and related to aspects beyond the large scope of the consultation report. Note that all comments will be considered in the context of the workshops on the finalization of the general requirements.

4.1. Derogations

4.1.1. Summary of the feedback received

BGA and Febeliec welcome the proposed derogations, but say that the proposed ‘package deal’ involves more risks as there is no guarantee that the derogations will be granted and uncertainty about the length of the derogations:

> According to BGA the technical requirements might not leave a room for uncertainty and should maintain a stable investment climate. Therefore BGA proposes to extent the period of 5 years (as it is too short) and to start the renewal process of the derogations at least 2 years in advance.
>
> BGA points out to lack clarification on the event if a derogation is not prolonged and indicates the importance to fix the elements that determine which derogation regimes are applicable on a certain installation. BGA assumes that:

- The requirements via the derogations remain valid at least until the technical lifetime of the PGM (if not, this would have a severe retroactive impact and undermine all advantages given)
- Only new installations built after this derogation period (of 5 years) might not be able to benefit from the same derogations anymore

BGA pleads for a stakeholder consultation when Elia is thinking about introducing a request for renewal of the derogations and asks that Elia accompanies its decision with a cost-benefit analysis (CBA). Febeliec indicates to have expected a (start of a) quantitative CBA in the consultation document (for each derogation proposal) already.

4.1.2. Elia vision

The initial duration of all derogations proposed in the consultation document (more specifically the derogations to reflect the Type A or Type B requirements for Type D units with a maximum installed capacity lower than 25 MW with a connection point higher or equal to 110 kV and the derogations for certain robustness requirements in the range 250 kW – 1 MW, see 4.1.1. in the consultation document) is intended to be fixed for five years.

A derogation specified for a definite duration (for example 5 years) means that all applicable units commissioned/built during that period benefit from the derogation and this for an indefinite period. After this 5 year period, the unit is considered as an 'existing' grid user for this requirement (so even if the derogation does no longer exist, the NC requirement is not applicable to this unit). Units built or substantially modernized[6] after the 5-year duration of the derogation will be considered as 'new' grid users for this requirement and will have to comply with this Network Code requirement.

Although it is up to the regulatory authority to grant the derogations and to specify its duration, Elia is proposing a duration for the derogations, in accordance with Art. 63(8) of the NC RfG. With regards to the derogations to reflect the Type A or Type B requirements for Type D units with a maximum installed capacity lower than 25 MW with a connection point higher or equal to 110 kV, Elia proposes a (to be determined) derogation period that is longer than the 5-year period mentioned in the consultation document.

Elia commits to communicate significantly in advance to stakeholders if a derogation will be renewed or adapted. Reviewing derogations is a continuous process and the timing to ask for new/renewal of derogations is a trade-off between being able to define the need for derogations based on the latest forecasts and guaranteeing a stable investment climate for investors.

Note that the Elia's vision above is only applicable to the derogations for certain classes of PGM proposed in the public consultation document and might be adapted in case of individual derogations.

[6] The general substantial modernization criteria apply in this case

4.2. Impact beyond connection codes

4.2.1. Summary of the feedback received

BGA remarks that the impact of the categorization goes beyond the NC RfG and even beyond the connection codes and regrets that the proposal does not make the link with other Network Codes, such as NC E&R ('Network Code Emergency & Restoration')[7] and SO GL (System Operation Guideline)[8], or other rules such as congestion management rules.

As an example, BGA refers to the NC E&R. This NC foresees that as from category B an installation can be considered as an 'identified significant grid user' which includes, amongst others requirements, the obligation to have a 24/24 hours functioning communication system. BGA proposes to ask for a derogation for this requirement.

Febeliec stresses that the thresholds not only define the required capabilities of all generation units, via the NC RfG, but also their operation, via the dependency with the SO GL and NC E&R. Furthermore, Febeliec claims that the impact of the thresholds will not only be limited to new PGM, but directly to all PGM (new and existing), by referring to SO GL data exchange requirements for all PGM as of 0.25 MW (type B threshold) that have been discussed in the UG Task Force iCAROS. Nevertheless, Elia indicated in the Task Force Implementation NC, that data exchange requirements are not retrospectively applicable. As a result only the upper value allowed for the threshold A/B is acceptable for Febeliec.

4.2.2. Elia vision

Some of the links with other network codes (such as the SO GL or the NC E&R) are implicitly present in the public consultation document (e.g. needs of controllability during emergency and restoration).

Elia acknowledges the impact of the chosen threshold on the SO GL and the NC E&R and confirms that the proposal submitted for consultation takes into account the various impacts of the different Network Codes as presented during the numerous Task Force Implementation NC sessions. For example in the last Task Force session of the 2nd SGU iteration on 27/03/2017, Elia refers in its presentation (slides) to the retroactive application of the communication requirements (SO GL) and application to emergency and restoration (NC E&R).

Elia is aiming for a coherent communication in the different Working Groups and Task Forces and is not aware of any contradictory communication that has been conducted in the Task Force Implementation NC in comparison with the Task Force iCAROS. Furthermore, the discussion on data exchange continues in Task Force iCAROS wherein the requirements are being clarified.

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[7] Network Code on Emergency and Restoration: has been approved in comitology on 24 October 2016. The estimated entry into force of this Network Code is November 2017.

[8] Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1485&from=EN

Note that the scope of the public consultation was limited to the proposal of the maximum capacity thresholds and the proposal of national implementation of other technical requirements should not be understood as exhaustive.

4.3. Requirements Type B PGM

4.3.1. Summary of the feedback received

With respect to type B units BGA is positive about the proposed derogations (related to robustness) for the category 250 kW – 1 MW (cfr. Consultation document on the proposals maximum capacity thresholds for types B, C and D PGM) and many other aspects in the consultation document wrt category B units:

- The fact that BGA proposals wrt reactive capability and voltage control requirements have been considered
- The proposal of a simplified compliance process based on manufacturer's certificates or simulations (instead of specific tests) for FRT characteristics (and possibly other requirements)
- no requirements for information exchange will be put on existing PGMs, only on new PGMs
- the proposed approach for PGMs with respect to the injection of reactive fault current during voltage dips, a functionality that will not be requested from all PPMs. BGA assumes the same approach for reactive fault current injection for type C and D, including offshore PGMs.

BGA points out that even though a derogation is proposed for the category B below 1 MW, the FRT requirement imposing a Critical Fault Clearing Time of 200ms remains very challenging for the remaining part of category B.

In addition, BGA proposes another derogation on the reactive power requirements for asynchronous generators (e.g. (μ)CHPs) as the reactive power is uncontrollable.

4.3.2. Elia vision

Information exchange requirements

The interpretation of BGA, that information exchange requirements will only be put on new PGMs and not on existing PGMs, is not correct. Elia has already clarified its position on the requirements for existing PGMs within the different stakeholder meetings (cfr. Task Force meetings).

If the technical capability (e.g. communication, reactive capability, …) is already available on the existing units and if no additional assets costs are required, Elia considers that this should be put at disposal to get aligned as much as possible with the new requirements.

Reactive current fault injection

It is clear from the technical requirement document (Cfr. Technical Summary[9])that this is a site specific requirement and will be agreed with the relevant TSO during the connection

[9] Technical overview of impacting requirements for the categorization of the power generating modules (served as input for the 2nd SGU Iteration in the Task Force Implementation NCs): : http://www.elia.be/~/media/files/Elia/users-

process, notwithstanding that if the functionality is already defined in the standards (also for small units A and B) the relevant SO considers it not impacting on the costs and may be agreed to be activated.

FRT for units type B > 1 MW

BGA indicates that a critical fault clearing time of 200 ms for the category B above 1 MW remains very challenging. However, the documents shared by BGA do not show this difficulty when considering a remaining voltage of 30%.

Request for derogation for reactive power requirements for asynchronous generators (µCHP)

Elia has already taken into account the suggestions for the reactive power capability of the stakeholders (BGA).

As the expected volume of asynchronous generator–based µCHP of type B is considered very limited, individual derogation requests can be submitted. If too many derogations would be submitted, Elia could consider a class-derogation, in the future

4.4. European standards

4.4.1. Summary of the feedback received

In their consultation reaction, the public DSOs emphasize the opportunity to apply European (CENELEC) standards as reference for PGM connection requirements at the distribution grid. These European standards (especially EN 50438, TS 50549-1 and -2) contain a broad description of the technical specifications and its scope is not limited to the scope of the items in the European Network Codes. The main advantage of the use of these standards is the availability of compliant pieces of equipment, produced by international manufacturers, and the simplification of the connection and compliance verification process. The public DSOs state that a process is currently ongoing at CENELEC to align the standards with the European Network Codes, aiming to finalize in 2018.

The DSOs state that CENELEC is applying a different categorization and different thresholds in comparison with the NC RfG, although PGM compliant to these CENELEC standards meet the minimal requirements of the European Network Codes.

The DSOs ask Elia and the regional regulators to create a stable legal framework to facilitate the application of standards. They further wonder what rules will be applicable in the transition period when Network Codes requirements entered into force but the adapted European standards are not applicable yet. They ask if a pragmatic approach is possible.

4.4.2. Elia vision

Legal analysis revealed that European Network Codes prevail over standards, whether these are required by national law or not. Where the EU Regulation goes beyond standards, these standards will have to be adapted to these EU rules. If these standards are not adapted (on time), the existing standards cannot be used anymore to demonstrate compliance with the EU regulation.

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group/2016_TF%20Implementation%20NCs/20170201_SGU2_Session1/20170201_SGU_Technical_Summary_TFINCs.pdf

On the other hand, if standards are more constraining than the Network Codes and are used to verify compliance, this boils down to the adoption of additional requirements at national level, which is only allowed under various conditions which are not easy to demonstrate. (Cf. Annex II for more information).

However, standards are an efficient way of demonstrating compliance in the context of mass market (mainly Type A PGMs but also some PGM of type B) and therefore, in case temporarily no standards exist that are aligned with newly updated Belgian legislation. Therefore, Elia supports a pragmatic approach to verify compliance of type A PGM in this transition period (when NC requirements entered into force but the adapted European standards, who are being developed as soon as possible, are not available yet).

For example, if deemed acceptable by the competent authorities, the relevant network operator could accept the connection to the grid if the PGM owner could show compliance with an existing standard sufficiently close with the newly updated Belgian legislation. Note that even if standards are proposed as the way to prove compliance, this is not an obligation and stakeholders still have the right to demonstrate their compliance with the Belgian legislation in a different way.

Elia wants to clarify that EU standards are mainly defining methods and approach to verify the compliance with a technical requirement. Default numerical values are also provided in the standards but other values could be used by certification body, on request of a manufacturer to certify compliance. These other numerical values are expected to derive from the national implementation of the EU NCs. The creation of German standards, French standards or Belgian standards are therefore significantly simplified as it only consists in the determination of the adequate value to verify the conformity with the EU standards. Finally, the cost for manufacturer providing mass market products to be certified for the different national standards is expected not to be prohibitive. Therefore, Elia does not identify specific barriers to establish a Belgian standard that is different from the EU default standards.

4.5. Coordination with DSOs and CDSOs

4.5.1. Summary of the feedback received

Febeliec mentions that although Elia states that CDSOs are to be considered as DSOs in the Network Codes and in accordance with Art. 5(3) of the NC RfG Elia is required to coordinate with DSOs, CDSOs have been excluded from the coordination discussions between Elia and the public DSOs (taken place within Synergrid). Moreover Febeliec states that a coordination interaction regarding CDS only occurred with Elia and not jointly with the public DSOs. Febeliec argues that CDSOs should be included in the consultation and coordination with DSOs, while the specific nature of CDSOs should nevertheless be taken into account.

Febeliec asks more clarity on the paragraph 4.1.2. in the consultation document (related to AVR, OEL, UEL and PSS requirements for Type C SPGM) stating that Closed Distribution Systems (CDS) requirements will be aligned, to the greatest possible extent, to the ones of Demand Facilities and DSO. Febeliec ask what the scope is of this statement. More specifically Febeliec asks if it entails applying only the relevant and absolutely necessary requirements and capabilities from either demand facilities or distribution centers and not the combination of both?

4.5.2. Elia vision

Concerning CDSO involvement, Elia is willing to discuss specific issues related to CDS, as repeatedly mentioned in the Task Force Implementation NC meetings and WG Belgian

Grid meetings. Elia refers in this respect to the different initiatives that have been undertaken w.r.t. Febeliec to discuss some specific topics together with the CDSOs.

Concerning specific CDS requirements wrt paragraph 4.1.2 in the consultation document, Elia agrees that this clarification is needed but it is not in the scope of the consultation document. Further clarifications will be given in the remaining of the discussions to prepare the final proposal for new Belgian regulations.

4.6. Other comments

4.6.1. Summary of the feedback received

Febeliec states that **process-driven generation units** should not be subject to the full range of NC RfG obligations, but should only fulfill the requirements "insofar they are able to do so". For example in providing fault-ride through capabilities in case of a tripping principal process.

Febeliec also asks Elia to provide more clarity on the **concept of the connection point**, applicable for the connection codes. Febeliec disagrees with Elia's position where identical technical generation units are to be treated in a different way based on their connection to a demand facility or to a CDS (by referring, as an example, to the Elia presentation (slide 9) in the WG Belgian Grid of 24/01/2017).

4.6.2. Elia vision

Process-driven generators

As mentioned above, specific requirements were not the aim of this public consultation.

In line with the discussions in bilateral and Users' Group meetings, Elia confirms the willingness to consider the specificity of the process-driven generators.

In addition, Elia would like to clarify that this approach is completely in line with Art 6(3) of the NC RfG and thus not an exception.

Concept of the connection point

Elia has already clarified the concept of connection point[10] and Elia's vision is in line with the understanding of the other EU TSOs. In this vision, each relevant system operator has the responsibility to assure the compliance with the requirements of a PGM (installed in his premises) and verifies this at the connection point with other relevant system operators (e.g. a CDSO has to assure compliance of the PGM at the point of connection with a TSO or public DSO). In case further clarifications may be needed about this aspect, these discussions will happen during the workshops on the general requirements.

[10] The concept of the connection point has been presented in:

the Task Force Implementation NC 1st SGU Iteration (Session 3) on 25 February 2016: http://www.elia.be/~/media/files/Elia/users-group/Implementation-EU-Network-codes/Expert-Group-sessions3/2-2_CategoriesOfUsers_Meeting3_160226.pdf

and in the Working Group Belgian Grid on 24 January 2017: http://www.elia.be/~/media/files/Elia/users-group/WG%20Belgian%20Grid/20170124_WG%20BG/20170124_WGBG_ClarificationOfDefinitions.pdf

Annex I: feedback received

POSITION

Subject: Response BGA (Belgian Generators Associations) to the public consultation on maximum capacity thresholds for types B, C and D PGM's held by Elia

Date: 12 June 2017

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Introduction

Elia is organizing a public consultation on the 'maximum capacity thresholds for types B, C and D for power-generating modules'. This consultation was launched on the 19th of May, 2017 and will end on the 20th of June, 2017.

This document is the response of the Belgian Generators' Association (BGA): this is an *ad hoc* cooperation of the associations FEBEG, COGEN, ODE, BOP and EDORA. The comments and suggestions of BGA are not confidential.

General comments

BGA has – from the start on – contributed to the discussions on the implementation of the Network Codes and has actively participated in the Elia Task Force 'Implementation Network Codes' (TF INC). As a consequence BGA has been able to observe an evolution in some of the positions of Elia. BGA has noticed a positive evolution for several different topics which shows that the discussions held in the TF INC were useful. The TF INC also allowed different stakeholders to gain better insight in one another's concerns and interests. On the other hand BGA regrets to see no changes in several core proposals as regards the thresholds for categorization of significant grid users the described in the consultation document.

In the consultation document Elia mainly refers to the Network Code on Requirements for Generators (NC RfG) to propose a categorization of power-generating modules (PGM's). Although the consultation obligation of Elia is indeed coming from the NC RfG (art. 5.3), **the impact of the categorization goes beyond the NC RfG and even beyond the connection codes**. BGA regrets that Elia did not link its proposal to the other network codes such as the Emergency and Restoration Network Code and the System Operation Guidelines. Even beyond the implementation of the Network Codes, these thresholds will be implemented and will become very important as reference for other rules, e.g. link with congestion management rules, in which the threshold between A/B would be used as to define the scope of the congestion management rules.

Comments on the technical and legal solution for the lower threshold of category B

Elia has developed a juridical reasoning why for category B the lower threshold should be set at 250 kW instead of 1 MW. In this argumentation Elia starts from its wish to impose some extra requirements to the group of PGM's from 250 kW to 1 MW compared to PGM's of type A, but not (yet) the full package of requirements for PGM's of type B. In this reasoning Elia starts thus from a targeted end result in terms

of technical requirements for the installations between 250 kW and 1MW. The requirement of telemonitoring is, for example, put forward by Elia as essential as from 250 kW. BGA regrets this approach as it doesn't support the need for differentiation from type A starting from 250 KW. **The solution to start type B from 1 MW on – so without extra rules for the group of PGM between 250 kW and 1 MW – remains the preferred option for BGA.** As discussed further below, this straight forward and simple approach doesn't rely on derogations nor additional legislation beyond the codes and is thus legally very solid.

Elia sees two possible approaches to realize its targeted model to start differentiation from type A as from 250 kW but without the full package of type B being applicable below 1 MW. In the first approach the lower threshold for type B would be set on 1MW and additional requirements – more stringent technical requirements via national grid codes or contracts – would be added for the group 250 kW –1 MW of type A. The second approach consists of a threshold for type B of 250 kW combined with derogations for the group of PGM's between 250 kW and 1 MW of type B. Elia argues that the second approach is legally more indicated.

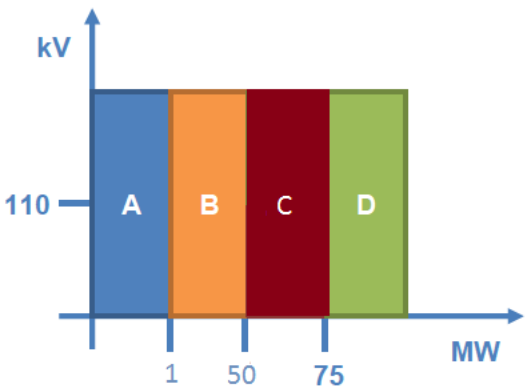
Without questioning the juridical analysis of Elia, BGA regrets that the legally most solid approach is the second one. Elia clarifies: '*Of course, the same technical solution is aimed for in both approaches and this proposal to go for the second approach should rather be interpreted as a legal implementation choice*'. This point of view is not shared by BGA. **For generators, there is clearly less certainty in the second approach because there is no guarantee on obtaining the envisaged derogations**. Elia puts it correctly when it writes for the second approach: '*(…) and then seek derogations (…)*'. **Furthermore, the derogations will only have a limited validity** (proposal of Elia is 5 years). Even though also the categorization limits are susceptible to change, this seems a bigger risk for the derogations for which the grid users depend more on (the good will) of the grid operator. **Although BGA acknowledges the good intentions of Elia, generators lack certainty and a clear view on the future situation**. So the two approaches might in theory deliver the same technical result, but in practice these approaches will likely not have the same outcome and differs in terms of certainty for generators.

To avoid to have to rely on legal interpretations and in line with – according to BGA – the lack of a clearly demonstrated need to start imposing extra technical requirements from 250 kW on, BGA still favors to simply start type B from 1 MW on.

Comments on the categorization and the impacting technical requirements

BGA proposal for categorization

BGA remains in favor of the following categorization:



The most important elements for BGA are:

- the threshold for type B should be at 1 MW instead of 250 kW;
- the PGM's < 75 MW but connected < 110 kV should never be categorized as type D;
- the threshold between B and C should be at 50 MW instead of 25 MW.

PGM's > 110 kV from type A & B

BGA welcomes that Elia proposes to adapt the requirements for PGM's of type A and B with a voltage at the connection point higher or equal to 110 kV. This will result in an equal treatment of PGM's of the same size with a voltage at the connection point lower than 110 kV and will prevent exaggerated costs for installations with a rather insignificant grid impact.

Elia proposes to adapt the requirements via a derogation for each requirement. Other solutions seem indeed not possible by the code. Unfortunately, this means that the category in se will not change but only the requirements and therefore the installations in this situation remain dependent on derogations. What will be the duration of these derogations? Elia doesn't mention any duration for this kind of derogations. **BGA considers that these derogations should give as much certainty and stability as possible, as logically nobody questions these derogations**. The derogation should be equivalent to a permanent measure that cannot be questioned. Clearly the duration of 5 years – as proposed by Elia for the group 250 kW –1 MW – is completely inappropriate here.

Type B

Threshold of 250 kW

Elia proposes the value of 250 kW for the lower threshold of type B.

For BGA it is still not clear why Elia proposes exactly the value of 250 kW, and not e.g. 300 kW, 500 kW or even 1 MW. **The consultation document gives a rather poor motivation**.

- Communication and information exchange

  Elia describes this requirement as the need of mainly DSO's to heave better knowledge of the power flows in the MV network so that they can predict them. BGA understands this reasoning, but doesn't derive from this the need to be able to control installations in a remote way. The motivation doesn't imply a heavy and expensive remote control because a simple Programmable Logic Controller (PLC) can do the required job. A PLC controller is indeed a simple tool for monitoring that can provide the required information. Can this interpretation be confirmed by Elia?

  In any case BGA is opposed to imposing expensive tele control boxes to all installations as from 250 kW as the cost is always for the generator and will be – especially for smaller machines – substantial. **The threshold for imposing remote controlling should remain set at 1 MW, irrespective of the thresholds that are set in the framework of the NC RfG**.

- Electrical protection schemes and settings

  Electrical protection schemes are asked for by the DSO's since many years in the connection process and the DSO's give settings for the protection of the local grids. **As electrical protection schemes are required even today for generators as from 10 kW, BGA doesn't see the need to tailor the A/B threshold to this requirement.**

- System Restoration

  BGA understands the need of the DSO's to guarantee that during system restoration the offtake in a substation does not change significantly and therefore have 'control' of the production that is present on the feeder. **But, BGA doesn't see the motivation why this is exactly crucial as from 250 kW on.** What is the reasoning to have this requirement from 250 kW on? Moreover, PV production and cogeneration units are often imbedded production units, so what will be the actual control on this units? And how is offtake dealt with? Does the same threshold of 250 kW apply?

BGA considers the choice of 250 KVA by Elia as rather arbitrary and mainly based on the limit for remote control of active power in the Walloon Grid Code (see also Elia slides with the reasoning on the boundaries). This is contradiction to the limit in the Flemish Grid Code that is using 1 MVA (actually 1 MVA or lower). **The difference between the two regional grid codes demonstrates the arbitrary nature of this decision.**

Derogations for PGMs between 250 kW and 1MW

BGA welcomes that Elia acknowledges that the group of PGM's between 250 kW and 1 MW should not have completely the same requirements as type B > 1MW, at least for requirements with respect to robustness. Elia therefore proposes the following derogations:

- 14(3)a&b – Fault Ride Through (FRT);
- 17(3) – Providing post-fault active power recovery (SPGM);
- 20(2)b&c. – Providing fast fault current;
- 20(3)a&b. – Providing post-fault active power recovery.

Elia states that the initial duration of the derogation is intended to be set at 5 years. After this period a reassessment of the need for the derogation will be performed.

In consultation document Elia doesn't provide clarity on what happens for a new installation with capacity between 250 kW and 1 MW that has applied these derogations and for which the derogations are not prolonged. For BGA the process of derogations should not imply that the installation should fulfill the requirements after all. Such approach would have a severe retroactive impact and would undermine all advantages given by the derogations for this group. **BGA therefore assumes that the requirements via the derogations remain valid at least until the end of the technical lifetime of the PGM** (see point 12 of the criteria for granting derogations as decided by the regulators in April 2017). This assumption seems to be in line with the NC RfG that only accepts retroactive changes to existing installations after a CBA performed by the TSO and approved by the regulator.

The duration of 5 years should, according to BGA, only mean that it is possible that new installations that are built after this period of 5 years, might not be able to benefit from the same derogations any more. In this respect, **it is important to fix the elements that determine which derogation regimes are applicable on a certain installation**. For BGA, the moment of signature of the final and binding contract for the purchase of the main generating plant should count. This is in line with art. 4.2b of the NC RfG.

Moreover, it is crucial that derogation regimes are without disruption to ensure that investors are not confronted with a vacuum. It should also be known sufficiently upfront if the derogations will be requested again by Elia and if they are granted or not by the regulators. As the time to go through the process will not be negligible, and taking into account the time to come to an investment decision, **Elia should start the procedure of renewal sufficiently in upfront, e.g. 2 years**. Taking this into account, BGA consider a 5 year validity of the derogations as a short period and propose to extend the period with some years. In order to facilitate investments in production units, it is important to reduce all uncertainty about the technical requirements imposed to the units.

BGA furthermore pleads for a stakeholder consultation when Elia would doubt about requesting a renewal of the derogations and ask that Elia accompanies its decision with a cost benefit analysis.

As already mentioned before, the impact of the categorization goes beyond the NC RfG and the other connection codes. These impacts need to be carefully assessed and – if necessary – derogations have to be applied for. The Emergency and Restoration Network Code foresees for example that as from category B an installation can be considered as an 'identified significant grid user' which includes amongst other requirements the obligation to have a 24/24 hours functioning communication system: BGA proposes to ask for a derogation for this requirement.

Technical requirements

With respect to category B units BGA welcomes that:

- the BGA proposals were considered as regards the reactive capability and voltage control requirements for PGM and SPGM;
- a simplified compliance process based on manufacturers' certificates or simulations instead of specific tests would be proposed for FRT characteristics of category B PGM and possibly also for other requirements;
- no requirements for information exchange will be put on existing PGM's, only on new PGM's.

BGA is also positive about the approach for PGMs with respect to the injection of reactive fault current during voltage dips. The need for this service is indeed related to the characteristics of the network at the connection point. Therefore Elia will not request this functionality of all the PPMs. The characteristics and activation of the service will be agreed upon with the relevant TSO during the connection procedure. **BGA also welcomes that Elia will take into account what capability is available on the market**: BGA understands that this case by case approach is possible following art. 20.2 (b) of the NC RfG. BGA assumes the same approach for reactive fault current injection for type C and D, including offshore PGM's.

BGA does want to point out that even if the class derogation from FRT requirements for the subcategory 250 kW to 1MW PGM's would be obtained, **a FRT requirement imposing a Critical Fault Clearing Time of 200ms remains very challenging for the remaining part of category B. BGA remains very worried** about the impact of such a requirement on the level playing field for production installations.

Asynchronous generators

BGA would like to ask Elia to apply for another general derogation, i.e. a derogation on the reactive power requirement for asynchronous generators as for asynchronous generators (e.g. (μ)CHP's) the reactive power is uncontrollable.

Type C

PGM's connected ≥ 110 kV

BGA pleads to treat installations of type C but connected ≥ 110 kV not as a type D, but as a type C. This follows the same approach as Elia suggest for type A and B.

The current Elia proposal will have the following consequences:

- It will result in discrimination between units connected to the lower voltages and units connected to the 110kV grid or beyond, e.g. because the latter units are embedded in an industrial site.

- The FRT requirement of 200ms (CFCT) @ 0.3 p.u. remaining voltage is already very ambitious for most SPGMS. The requirement of type D in which 200 ms @ 0 p.u. should be withstand by the installations, is very demanding and not even always possible. BGA fears that this would deteriorate the investment climate for units > 25 MW on industrial site, whereas this is now considered as a segment with a lot of potential for investments in renewable generation.

- In some regions, e.g. in 'Boucle de l'est', generators are imposed to connect to 110 kV. This leads to more expensive connection costs, but being subject to the requirements of type D is making this involuntary situation even worse.

Threshold between B and C

Elia proposes a threshold between B and C of 25 MW. **For BGA this threshold should be put at 50 MW** instead for the following reasons:

- In particular combined with the proposal in which type C units > 110kV are considered type D, this threshold would place a more than acceptable burden to the PGM's with maximum capacity between 25 and 50 MW and connected >= 110kV. Especially the requirements on FRT and reactive power of type D are problematic for most of the smaller units.

- Large cogeneration units are often in the range of 25 to50 MW, e.g. the LM6000 being a typical gas turbine used in cogenerations. Cogeneration units are often imbedded in industrial sites and therefore have little relevance for the grid. It seems therefore exaggerated to impose requirements of type C to these installations.

Elia doesn't mention the topic of substantial modernization whereas this has an impact on the choice of the threshold between B and C. In case of a substantial modification, existing units of type C need to comply with the NC RfG.

Again BGA is of the opinion that it is not such a strong case to motivate the threshold of 25 MW mainly with the conformity with the current legislation. Network Codes are an opportunity to harmonize current regulation within (regions of) Europe and between best practices. Therefore, it is to BGA irrelevant to make choices for network code implementation based on current regulation (grid codes, laws and decrees). Furthermore, coordination between similar member states and control areas is needed as much as possible. **It makes logic sense that similar systems demand similar requirements of their grid users and that the level playing field for grid users isn't distorted.**

BGA welcomes that for SPGM the aggregated installed capacities per site will not be considered to categorize PGM, except in the case of indivisible set of installations.

Not mentioned by Elia, **but also important for the categorization between type B and C (and also in general an issue for type C and D) is the requirement for type C and D SPGM as regards reactive power absorption**: -35% is seen as very stringent for a unit (high risk for operator, possibly without return). BGA hopes sincerely that the -20% still under investigation – as mentioned by Elia in the slides presented on 21.02.2017 at the final TF 'INC' on RPM&VC – will be chosen.

BGA is pleased that, at least for the time being, no requirement on synthetic inertia will be set.

Type D

For the sake of clarity, we would like Elia to confirm that offshore wind parks will be considered type D automatically, even though individual units have capacities smaller than 10 MW.

Febeliec answer to the Public Consultation by Elia on the thresholds for the maximum capacity for electricity generation units of type B-C-D

Febeliec would like to thank Elia for this final opportunity via a public consultation to react to the topic of the thresholds for the maximum capacity for electricity generation units of type B-C-D, after already having participated to all the meetings of the Task Force Implementation Network Codes and having provided ample input during those meetings as well as during bilateral and multilateral meetings with Febeliec representatives on specific topics related to the consultation at hand. Febeliec wants to stress that it is the representative of the industrial energy consumers, including the closed distribution systems operated by its members, and as such is directly and highly concerned by the proposed thresholds, as many of the generation units covered by the codes and the thresholds are connected in demand facilities and/or closed distribution systems of its members, with potentially very important impacts both on the cost for its members as well as their operations.

Febeliec greatly appreciates the work that has been done by Elia during the abovementioned meetings and believes that through the endeavor of Elia as well as all other involved stakeholders, not in the least Febeliec itself, convergence on a wide range of sub topics has been reached. Febeliec would also like to thank Elia for its willingness and openness to have discussions on all topics considered relevant by the stakeholders, either in plenary sessions or in bilateral meetings, allowing to present all the relevant viewpoints and elements, to come to a better understanding of all the issues.

Nevertheless, Febeliec still wants to raise its major concerns with the proposal at hand, without necessarily diving into all the detailed and technical arguments that have been presented and discussed during all the above-mentioned meetings and exchanges. This is especially necessary as even though Elia has taken note of all the input provided by the involved stakeholder, the current proposal is still "only" an Elia proposal and not necessarily a consensus proposal that reflects the position of each and every individual stakeholder.

Febeliec wants to stress explicitly the importance of the thresholds upon which is being consulted, as they will not only define, based on the Requirements for Generators (RfG) Network Code, the required capabilities of all generation units, but also, through the Operational Network Codes System Operation Guideline (SOGL) and Emergency & Restoration (E&R) Network Code, on their operation. Applying a more stringent obligation under the RfG Code, applicable only to new generation units unless a positive and validated Cost Benefit Analysis (CBA), will also create additional (more stringent) obligations for **all** units[1] in this category, new **and** existing, which is in its principle inacceptable for Febeliec as this would

[1] Febeliec also refers to the minutes of the first meeting of the Elia Task Force iCAROS of June 7th 2017: "*Febeliec expresses doubt on the need of such data exchange for Elia on PGM as small as 0.25MW (part of the PGM type B). Elia understands the expressed concern but points out that for TSO-connected PGM B this is a legal requirement imposed by the GL SO: the task force cannot put into question the need for a design compliant to this rule but should discuss the implementation of a pragmatic solution*". Elia presents this as an inevitable requirements, but this is only the case for all units above 1MW. All units, including the existing, between 250kW and 1MW will only be subject to these requirements because of Elia's proposal for a more stringent threshold, which will lead to

imply a retro-active application of obligations, which could be quite onerous. Elia has itself indicated that the purpose is not to make data exchange retrospectively applicable, but only to existing PGMs where existing capability is usable without additional investment costs, as noted down in the final proposal of the slides of the session on Significant Grid Users of 27/03/2017. Such approach would thus not only negatively impact the future investment climate of Belgium but also deteriorate the competitiveness of the current investments as compared to other Member States as well as the rest of the world. As a result, Febeliec can formally under no circumstance agree with more stringent thresholds than the upper limit allowed by the RfG code, even despite the (non-quantitative) analysis by Elia and the presented list of justifications.

Febeliec welcomes the willingness of Elia to try to be as pragmatic as possible in the translation of the obligations imposed by the Network Codes, amongst others for the application of the Network Codes to Closed Distribution Systems. Nevertheless, Febeliec regrets the fact that even though Elia during the meetings of the Task Force Implementation Network Codes as well as during bilateral and multilateral meetings has indicated to proceed according to an evolutionary instead of a revolutionary approach and try to be as pragmatic as possible, as can also be seen in the minutes of the aforementioned meetings, an approach that was highly welcomed by Febeliec, this approach is according to Febeliec not sufficiently reflected in the consultation document at hand. The main concern for Febeliec is that no guarantees are or can be given at this point on the specific application of the technical requirements to its members and as such agreeing with the current proposal without a full understanding of **all** the underlying parameters (e.g. detailed and concrete values for all technical requirements) would result in signing a blank check towards Elia, which is unacceptable to Febeliec and its members.

Process-driven generators

With respect to process-driven generation units, Febeliec remains firmly of the opinion that such generation units should not be subject to the full range of obligations of RfG, based on their specific nature, but should only fulfill the requirements insofar they are able to do so. Febeliec during many meetings also presented clear examples and justification for this case. It would for example be impossible for a process-driven generation unit to provide fault-ride through capabilities in case the grid fault causes the principal process to trip, resulting in the tripping of the process)driven generation unit. Febeliec refers to the provision which allows in case of an industrial site (demand facility or CDS) to define and coordinate with the TSO de required capabilities as well as the operations of such generation units. This provision should be applied. Elia has agreed during the task force meetings as well as during bilateral meetings to analyze each situation on a case-by-case basis, based on the critical aspects of each industrial process, and apply a pragmatic approach. This is however not reflected in the proposal from Elia.

Reasonable balance between the advantages to Elia versus the administrative, technical and financial burden

For Febeliec, a correct balance between the advantages for Elia for system operation versus the financial and administrative and technical burden for the individual grid users should always be maintained. Although Febeliec does believe this is the intention of Elia, it nevertheless has the feeling

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additional costs for the operators of these units as well as the operators of the demand facilities or closed distribution systems where they are connected.

that Elia is sometimes taking unjustified margins and precautions in establishing the thresholds and technical capabilities for generation units, especially in light of the near future. Applying more stringent thresholds for the limit A-B and the limit C-D than the minimal limits imposed by the RfG Network Code according to Febeliec goes beyond such reasonable balance, insofar that no clear near-term risks can be discerned. In its reasoning, Elia refers towards potential future evolutions of the Belgian system, yet proposes to apply already these more stringent thresholds, as opposed to for example the position that France, but also other Member States, seem to follow, where a wait-and-see approach is followed for the immediate future, with a potential more stringent threshold to be applied in the future, based on a better view and clear understanding of the direction of all the evolutions in the electricity (and energy) system. For Febeliec, harmonization on the European level does not mean that Belgium should apply more stringent requirements than imposed by the network codes because some other Member States chose to apply such more stringent requirements,, but rather that a coordinated and sufficiently justified and validated definition of the thresholds should be done, also duly taking into account the potentially huge impact on the costs for grid users and thus their international competitive position.

Concretely, Febeliec asks to apply for A-B a 1MW threshold, until can clearly be proven in the future that a more stringent value should be applied. Febeliec also refers to its comments on the cascading of the obligations related to this categorization from the Connection Codes to the Operational Codes and thus the impact on existing generation units (Cf. above). Moreover, Elia itself also indicates in its proposal upon which is being consulted that an important uncertainty still exists on the expected medium and long term growth for such units and thus their future potential impact on the grid, yet despite this imposes already immediately the more stringent threshold.

For the C-D threshold, Febeliec states that those units between 25 and 75 MW connected via a demand facility which is itself connected to a voltage level of at least 110kV should also be considered type C and not type D as is proposed by Elia, as this would otherwise create a discrimination between identical generation facilities merely on the voltage level of the grid to which they are connected and not to their own connection's voltage level nor technical differences between such installations.

Coordination with DSOs

With respect to the coordination with DSOs conducted by Elia, Febeliec wants to stress again that whenever such consultation has only taken place with Synergrid members, of which Elia is one, this does exclude all CDSs and CDSOs. Within the consultation document, Elia refers to RfG stating that article 5(3) of this Network Code was interpreted in a large sense to also include CDSOs, but such interaction has only happened after insistence from Febeliec to provide some coordination and that this only occurred with Elia and not jointly with the public DSOs. Moreover, Elia always states that, based upon also the DCC Network Code, CDSOs are to be considered DSOs (whereby Febeliec explicitly wants to state that the CDSO is indeed a system operator, but also and in the first place is a demand facility). Elia should thus be consistent in its interpretation and include the CDSOs to the consultation and coordination with DSOs, while nevertheless taking into account the specific nature of the CDSOs.

Technical and legal solution: Package deal

With respect to the proposed legal solution of Elia to implement and apply the more stringent thresholds but then apply for only certain requirements less stringent obligations for those generation units between 250kW and 1MW through the use of derogations, Febeliec is not convinced that this

solution should have precedence over the solution of applying the least stringent threshold (1MW) and then through national and regional legislation imposing some extra requirements for the category generation units between 250kW and 1MW. For Febeliec, the "package deal" as proposed by Elia creates, notwithstanding all previous comments on the effect of the cascading of the chosen typology through the Operational Codes, an additional risk for all concerned grid users, as in case for any reason such derogations would not be granted, non-necessary requirements would be imposed. Moreover, derogations are only for a limited period in time, which in itself would also create a risk exposure and thus would affect the investment climate in Belgium.

Without clear and precise guarantees on the above, Febeliec cannot accept the proposal of the "package deal", but remains on its position as always defended and communicated also through all stakeholder meetings to apply at least initially a less stringent threshold, to be evaluated and modified in the future if needed and justified by a detailed cost-benefit analysis. For precision, up until now and despite requests from stakeholders, Elia has never provided a quantitative cost-benefit analysis for its request for more stringent thresholds, allowing it to justify its position, yet implies that grid users should provide an in-depth analysis to justify their diverging position, as can also be discerned in the questions asked by Elia in this consultation. Febeliec would have expected Elia to be able to provide at least a start of a quantitative cost-benefit analysis, as the Elia "package deal" entails applying for derogations, where based on the decision of the regulators on the criteria for granting such class derogations such cost-benefit analyses would have to be provided for each of the requirements for which a derogation should be granted. Febeliec also refers to its publicly available comments to these consultations from the Belgian regulators.

Connection point

Febeliec also asks Elia to provide more clarity on the concept of connection point as to be applied for the RfG and other Connection Codes. Febeliec refers here to the slides presented by Elia for example during the Belgian Grid meeting of 25/01/2017 (slide 9). Febeliec continues to disagree with the position of Elia where identical technical generation unit constellations are to be treated completely differently based merely on the fact whether they are connected to a demand facility or to a CDS. For Febeliec, such distinction entails a discrimination and is not justified by any technical basis. Febeliec can understand the need for coordination with the relevant system operator, whether public DSO or TSO or CDSO, but does not understand nor accept the distinction made by Elia and the implications this has on many levels due to the different application of the Network Codes and thus the application of different capabilities and requirements as well as differences in the operation of these units.

Paragraph 4.1.2: Clarification required

Elia states in this paragraph that "*De eisen voor de gesloten distributienettten (CDS) zullen zoveel mogelijk worden afgestemd op die voor demand facilities en de DNB*". Febeliec would like Elia to provide more clarity on this point, as it is first unclear whether this applies to 4.1.2 or also other parts and second whether this entails applying only the relevant and absolutely necessary requirements and capabilities from either demand facilities or distribution systems and not the combination of both. Subsequently, if only the relevant and absolutely necessary requirements and capabilities are meant by Elia, which these would entail (exhaustive list).

Reactie van de DNB's op de consultatie door Elia met betrekking tot het voorstel voor drempelwaarden voor de maximumcapaciteit van elektriciteitsproductie-eenheden van het type B, C en D

Vooraf

Deze reactie wordt aan Elia verstuurd in naam van de Belgische distributienetbeheerders/werkmaatschappijen Eandis, Infrax, Ores, Resa en Sibelga (hierna: "de DNB's").

Ondersteuning van de Elia-voorstellen

Zoals vermeld door Elia in zijn consultatiedocument ondersteunen de Belgische DNB's de door Elia voorgestelde drempelwaarden voor de generatortypes, en de globale aanpak.

Met de voorgestelde drempelwaarden zijn de Belgische DNB's weinig tot niet betrokken door technische vereisten voor generatortype C en D.

Voor wat betreft de generatortypes A en B, ondersteunen de Belgische DNB's volledig de door Elia voorgestelde concrete invulling van de technische vereisten, maar wensen de aandacht te vestigen op enkele aspecten die van belang voor de Belgische DNB's, namelijk de Europese standaarden.

Belang van Europese standaarden

Naast de Europese netwerkcodes, , wensen de DNB's het belang te benadrukken van de mogelijkheid om Europese standaarden voor machines te kunnen gebruiken.

Zoals al op eerdere gelegenheden aangegeven (ondermeer de Elia Task Force Network Code Implementation) pleiten de DNB's ervoor om Europese CENELEC–publicaties als referentie te gebruiken voor de aansluiting van productie-installaties op het distributienet.

Vandaag bestaan er volgende drie CENELEC publicaties die nauw verwant zijn met de aansluitvoorschriften voor productie-installaties:

- Europese Standaard EN 50438: Requirements for the connection of micro-generators in parallel with public low-voltage distribution network,

- Technische Specificatie TS 50549-1 and -2 : Requirements for the connection of generators above 16 A per phase to the LV distribution system and to the MV distribution system

Deze publicaties bevatten een bredere beschrijving van technische specificaties die belangrijk zijn voor aansluiting op een distributiesysteem, met inbegrip van lokale aspecten. De scope van deze publicaties is dus niet beperkt tot de items die tot de scope van de Europese netwerk codes behoren.

Momenteel is bij CENELEC een proces lopende om deze publicaties te herbenoemen en te herwerken, te aligneren met de Europese netwerk codes, en om hen allen het statuut van Europese Standaard (EN) te doen verkrijgen. CENELEC ambieert om dit proces in 2018 af te ronden. Het statuut van Europese standaard impliceert dat de nationale standaardisatiebureaus zich engageren om deze te implementeren als standaard op nationaal niveau, en om geen conflicterende standaarden uit te vaardigen [1].

Het gebruik van deze Europese standaarden heeft volgende meerwaarde:

- De zekerheid dat meerdere internationale fabrikanten installaties zullen kunnen leveren, tegen een competitieve prijs, die technisch geschikt zijn om aan te sluiten op de Belgische distributienetten

- De vereenvoudiging van het proces van aansluiting en indienstname van installaties (waarvoor minimale vereisten ook zijn vastgelegd door de network code): bij het gebruik van Europese standaarden zal de conformiteit met de aansluitvoorschriften maximaal kunnen geverifieerd worden op basis van gestandaardiseerde procedures (die overigens nu ook door CENELEC in opmaak zijn), waardoor complexe en specifieke testen bij oplevering kunnen vermeden worden.

CENELEC gebuikt, voor de afbakening van hun publicaties, andere drempels dan de netcode RfG (namelijk: Laagspanning of Middenspanning, in plaats van een vermogenwaarde voor type A of B), die technisch gezien voor distributienetten ook logischer zijn. Dit maakt dat sommige concrete technische onderwerpen bij CENELEC mogelijk anders ingedeeld worden dan bij de netcodes. Maar dit verhindert niet dat generatoren, die zijn ontworpen volgens de CENELEC publicaties, voldoen aan de minimale vereisten van de Europese netcodes.

De DNB's zijn dan ook van mening dat het in het belang van zowel stakeholders als netbeheerders is om, voor de aansluiting van productie-installaties op het distributienet, te kunnen refereren naar deze Europese standaarden.

De DNB's roepen dan ook Elia en de regionale regulatoren - bevoegd voor de regulering van de aansluitvoorschriften op distributienetten - op om de toepassing van deze standaarden mee te faciliteren, in een juridisch stabiel kader.

De DNB's vragen zich ook af hoe de transitiefase zal verlopen in het geval dat de netwerk codes moeten toegepast worden terwijl de Europese standaarden nog niet beschikbaar zouden zijn. Kunnen we hier een pragmatische benadering verwachten?

De DNB's zijn hierbij uiteraard bereid om desgevraagd verdere informatie te geven en te overleggen over de meest geschikte manier & timing om dit te bewerkstellingen.

[1] Zie website cenelec:
https://www.cenelec.eu/standardsdevelopment/ourproducts/europeanstandards.html

Annex II: legal analysis consultation proposal

This memo analyses the legal implications of choosing a lower limit for certain categories of Significant Grid Users combined with derogations instead of applying higher limits between those categories and imposing additional requirements within certain categories.

1. Context

The Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (the "RfG NC") sets out the requirements that shall apply to new power-generating modules which are considered as significant in accordance with this RfG NC.

According to art. 5(2) RfG NC, power-generating modules within the following categories shall be considered as significant:

> (a) connection point below 110 kV and maximum capacity of 0,8 kW or more (type A);
>
> (b) connection point below 110 kV and maximum capacity at or above a threshold proposed by each relevant TSO in accordance with the procedure laid out in paragraph 3 (type B). This threshold shall not be above the limits for type B power-generating modules contained in Table 1 [i.e. 1 MW in Continental Europe];
>
> (c) connection point below 110 kV and maximum capacity at or above a threshold specified by each relevant TSO in accordance with paragraph 3 (type C). This threshold shall not be above the limits for type C power-generating modules contained in Table 1 [i.e. 50 MW in Continental Europe]; or
>
> (d) connection point at 110 kV or above (type D). A power-generating module is also of type D if its connection point is below 110 kV and its maximum capacity is at or above a threshold specified in accordance with paragraph 3. This threshold shall not be above the limit for type D power-generating modules contained in Table 1 [i.e. 75 MW in Continental Europe].

The TSO shall make a proposal of thresholds in accordance with the principles of art. 5(2) of the RfG NC to its NRA which shall decide on its approval.

2. Different options

A same technical solution can be achieved through different options, such as:

- proposing a higher limit in terms of maximum capacity thresholds between two categories of grid users and complement this with more stringent technical requirements via national grid codes or contracts for (some) units falling under this limit (Option A). Under Option A the limit between category A and B would be set at 1 MW and additional requirements (that would normally only be imposed on PGMs of category B) would be imposed on the PGMs of category A between 250 kW and 1 MW.
- putting a lower limit in terms of maximum capacity thresholds and then seek derogations for (some) units above this limit via the procedure described in the RfG NC (Option B). Under Option B the limit between category A and B would be set at 250 kW and certain derogations would be asked for PGMs of category B between 250 kW and 1 MW.

Both options are analyzed hereunder from a legal perspective.

3. Legal analysis

The proposed limits between categories A and B under both options (i.e. 1 MW under option A and 250 kW under option B) are compliant with the RfG NC. However, it is believed to be legally more indicated to go for Option B instead as for Option A.

The legal reasoning behind this statement is as follows: by foreseeing requirements for a certain category of grid users, the RfG NC harmonizes what is considered necessary at the EU level for the application of the said requirement. It can thus be considered it is not deemed necessary to apply the requirements to other categories of grid users. Foreseeing connection requirements from a higher category on a lower category of grid users (eg type B requirements on type A PGMs) can only be considered valid if certain conditions are met. Indeed, adoption of additional requirements at national level can only be allowed if (to be assessed on a case-by-case basis):

- the principle of non-discrimination is respected. In other words, you need an objective reason why to differentiate between different users that are in a same category;
- it is fully compatible with the objectives of the requirements normally applicable for the concerned category of PGMs pursuant to the RfG NC (it will not be easy to demonstrate that imposing requirements of category B to PGMs of type A are fully compatible with the objectives of the requirements normally applicable to category A PGMs);
- it is allowed by the aims linked to the technical requirement as formulated in the whereas of the NC RfG and the specific requirements;
- it is demonstrated that it does not affect cross-border trade[11], unless it is demonstrated that the measure at national level merely details the requirement of the RfG NC. The criteria "does affect cross-border trade" is interpreted usually pretty broadly by the European Commission (in order not to limit the applicability of the network codes) (again, this will be very difficult to demonstrate);
- it is only to complement and render EU law more efficient and cannot be in contradiction to EU law (principles of direct effect and supremacy of EU law).

It will not be easy to demonstrate that those conditions are fulfilled. As a consequence, Elia considers the Option B, i.e. the approach of seeking derogations via the process described in art. 63 of the RfG NC, as legally more indicated, even though the conditions of art. 63 of the RfG NC needs to fulfilled (eg.: providing a detailed reasoning, demonstration that the requested derogation would have no adverse effect on cross-border trade and a cost-benefit analysis) and approval of the CREG is required (however, this need of obtaining approval by the CREG gives also more legal certainty once this approval has been given). This option B is also more in line with the spirit of the Network Codes.

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[11] See art. 8(7) of Regulation 714/2009: "*The network codes shall be developed for cross-border network issues and market integration issues and shall be without prejudice to the Member States' right to establish national network codes which do not affect cross-border trade.*"

Elia has not the power to grant derogations nor to decide on regulated contracts (eg connection contract) or other regulated requirements. Nevertheless, Elia and the DSOs make the commitment to take the necessary actions to file and advocate for the necessary derogations as described in its proposal.

	Description in English	Description en français	Beschrijving in het Nederlands
AVR	Automatic Voltage Regulator	Régulateur automatique de tension	Automatische spanningsregeling
CBA	Cost-Benefit Analysis	Analyse Coût-Bénéfice	Kosten-Baten Analyse
CDS	Closed Distribution System	Réseau fermé de distribution	Gesloten Distributiesysteem
CDSO	Closed Distribution System Operator	gestionnaire de réseau fermé de distribution	beheerder van gesloten distributiesysteem
DCC (NC)	Demand Connection Code	Demand Connection Code	Demand Connection Code
DSO	Distribution System Operator	Gestionnaire de réseau de distribution (GRD)	Distributienetbeheerder (DNB)
E&R (NC)	Emergency & Restoration	Emergency & Restoration	Emergency & Restoration
FRT	Fault Ride Through	tenue aux creux de tension	Fault-ride-through
HV	High Voltage	Haute tension (HT)	Hoogspanning (HS)
IGD	Implementation Guidance Document	Document d'orientations non contraignantes sur la mise en œuvre nationale des codes de réseaux (Implementation Guidance Document)	Begeleidend niet-bindend document over de implementatie van de netwerkcodes (Implementation Guidance Document)
LV	Low Voltage	Basse tension (BT)	Laagspanning (LS)
LVRT	Low Voltage Ride Through	Low Voltage Ride Through	Low Voltage Ride Through
MV	Medium Voltage	Moyenne tension (MT)	Middenspanning (MS)
NC	Network Code	Code de Réseau	Netwerkcode
OEL	Over Excitation Limiter	imiteur de surexcitation	Overbekrachtingsbegrenzer
PGM	Power Generating Module	Unité de production d'électricité	elektriciteitsproductie-eenheid
PLC	Programmable Logic Controller	Programmable Logic Controller	Programmable Logic Controller
PPM	Power Park Module	parc non synchrone de générateurs	power park module
PSS	Power System Stabilizer	stabilisateur de puissance	power system stabiliser
RES	Renewable Energy Sources	Sources d'énergie renouvelables (SER)	Hernieuwbare energiebronnen (HEB)

RfG (NC)	Requirements for Generators	Requirements for Generators	Requirements for Generators
RTU	Remote Terminal Unit	Remote Terminal Unit	Remote Terminal Unit
SGU	Significant Grid User	Utilisateur significatif du réseau	Significante netgebruiker
SO GL	System Operations Guideline	System Operations Guideline	System Operations Guideline
SPGM	Synchronous Power Generating Module	Unité de production d'électricité synchrone	Synchrone elektriciteitsproductie-eenheid
TSO	Transmission System Operator	Gestionnaire de réseau de transport (GRT)	Transmissienetbeheerder (TNB)
UEL	Under Excitation Limiter	Limiteur de sous-excitation	Onderbekrachtingsbegrenzer