

Implementation Network Codes

WG Belgian Grid
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Overview

- 1. Implementation Network Codes: status**
- 2. Public consultation on maximum capacity thresholds types B, C and D PGM**
- 3. The further process on implementation NC**
 - Workshop planning and agenda
- 4. Non-NC driven changes to the Federal Grid Code**
 - Position Paper CDS

Status NC adoption – Summary

= changes since last WG Belgian Grid

Network Code	Status	Best guess(!) for “entry into force”
Market codes:		
Capacity Allocation and Congestion Management (CACM)	Entered into force	14/08/2015
Forward Capacity Allocation (FCA)	Entered into force	16/10/2016
Electricity balancing (EB)	Approved in Comitology (16/03/2017)	Q4 2017
Connection codes:		
Requirements for generators (RfG)	Entered into force	17/05/2016
Demand Connection Code (DCC)	Entered into force	07/09/2016
HVDC (HVDC)	Entered into force	28/09/2016
Operational codes:		
Operational Security (OS)	Published in the Official Journal of the EU (25/08/2017)	14/09/2017
Operational Planning & Scheduling (OPS)		
Load Frequency Control & Reserve (LFCR)		
Emergency & Restoration (E&R)	Approved in Comitology (24/10/2016)	November 2017

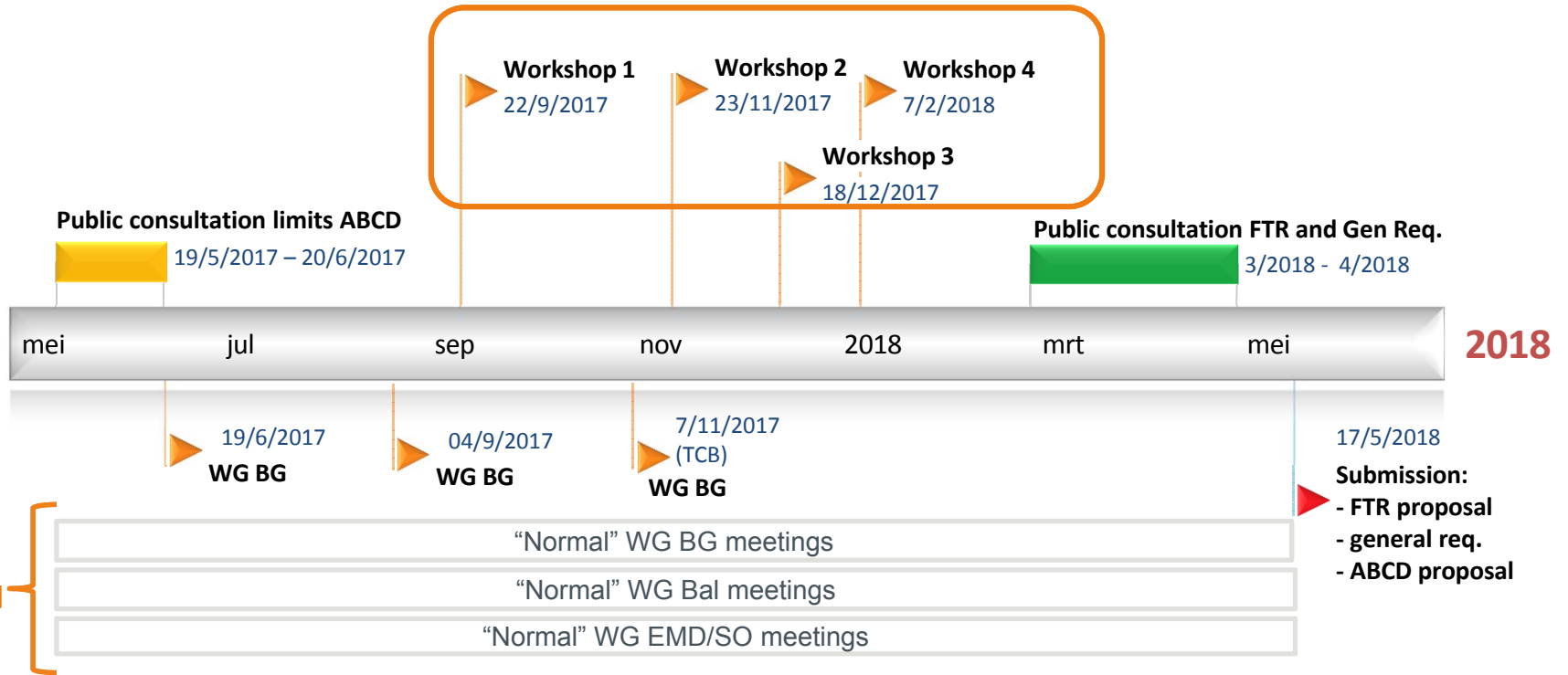
Merged in one guideline

Implementation Network Codes: status

Indicative planning and agenda workshops with focus on Federal Grid Code and general requirements

- Task Force “Implementation Network Codes” has ended.
- 4 dedicated workshops for discussing:
 - Federal Grid Code impact and amendment proposals
 - Progress on general requirements
- All interested parties are welcome.

All workshop material will be distributed prior to the workshop allowing preparation by all parties + everything will be published on elia.be



Normal UG Working Groups can work in support of FTR workshops, e.g. for discussing topics for which it is too early to discuss concrete amendment proposals (e.g. non-NC “wish-list”).

Indicative planning: workshop with focus on FTR and general requirements

Workshop	Topics to be presented
Workshop 1 22 Sept 2017	<ol style="list-style-type: none">1. Federal Grid Code: mainly connection related aspects, such as: See later2. Technical discussion 'general requirements'
Workshop 2 23 Nov 2017	<ol style="list-style-type: none">1. Feedback from previous workshop2. Federal Grid Code: mainly market related aspects, such as:<ul style="list-style-type: none">• Balancing, BRP, ancillary services, access• CACM/FCA• CDS (aspects not related connection – based on Position Paper CDS)• Metering• Definitions• Ad hoc points3. Technical discussion 'general requirements'

UG involvement: FTR workshops

Workshop	Topics to be presented
Workshop 3 18 Dec 2017	<ol style="list-style-type: none">1. Feedback from previous workshops2. Federal Grid Code, mainly on connection, DSO<ul style="list-style-type: none">• Connection-related aspects (continued from workshop 1)• CDS (connection-related aspects)• Storage requirements• HVDC• DSO aspects• E&R• Ad hoc points3. Technical discussion ‘general requirements’
Workshop 4 7 Feb 2018	<ol style="list-style-type: none">1. Feedback from previous workshops2. Track change proposals<ul style="list-style-type: none">• Definitions (& generalities)• Ad hoc points3. Technical discussion ‘general requirements’

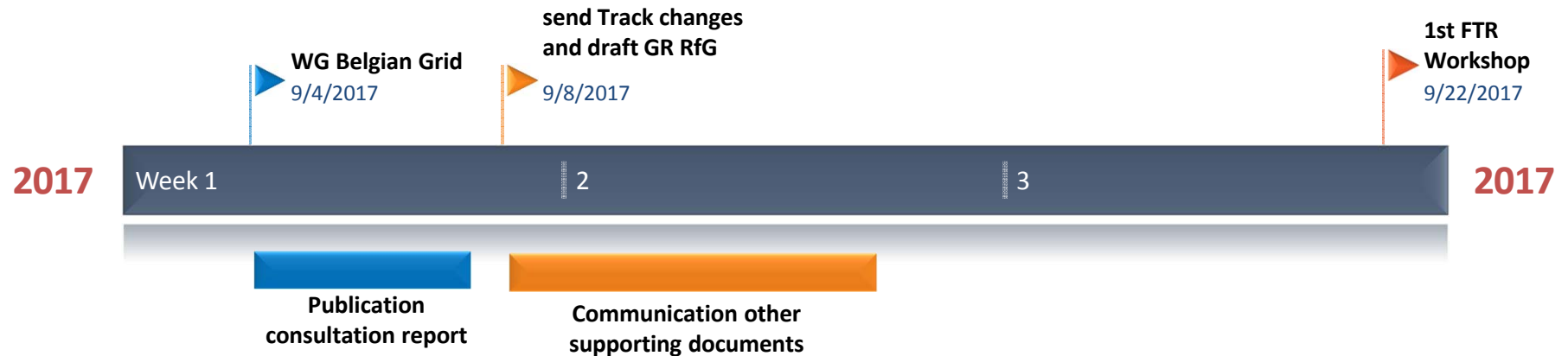
Preparation 1st FTR Workshop – Connection aspects

1st FTR workshop 22/09

- **Date:** FRI 22/09: 08:30 – 16:30
- **Location:** Royal Library (Next to Elia Empereur)
- **Attendees:** All parties are invited

Agenda: topics	Content
<p>Federal Grid Code (5h)</p> <ul style="list-style-type: none"> • Thresholds ABCD: categories of grid users • Notion of new installation • Substantial modernization • Embedded generation • Capacity reservation • Connection requirements : global approach for non-exhaustive requirements • Connection requirements : Short-Circuit Power, Robustness & Fault Ride Through, Protection and Control (incl. appendix 2) • Derogation process • Compliance; Connection process • Offshore • Generalities • Ad hoc points 	<ul style="list-style-type: none"> • Elia vision on how to amend the Federal Grid Code • First track change proposals
<p>General Requirements (2h)</p> <ul style="list-style-type: none"> • Introduction to General Requirements • Presentation draft General Requirements proposal, NC RfG 	<ul style="list-style-type: none"> • Deep dive into General Requirements

Planning towards 1st FTR Workshop



Documents 1st FTR Workshop on 22/09

- Public consultation report will be presented in the next days (week of 4th September)
- Track changes and draft GR on RfG will be sent on 9 September (2 weeks before WS)
- Supporting documentation (e.g. slides given more explanation on the proposed track changes) will be communicated round 15 September

Note on language:

- Track changes will be presented in French or Dutch ; translation foreseen for the public consultation. (almost all prepared track changes for the 1st FTR Workshop are in French)
- The general requirements document will be prepared in English and translated in French and English for the public consultation.

General Requirements: introduction

RfG Art. 7(4)
DCC Art. 6(4)
HVDC Art. 5(4)

“The relevant system operator or TSO shall submit a proposal for requirements of general application, or the methodology to calculate or establish them, for approval by the competent authority within two years of entry into force of this regulation”

- **Proposal for General Requirements** = proposal for federal/regional implementation of the non-exhaustive requirements in the Network Codes
- Elia refers to the [ENTSO-E IGD for network codes on grid connection](#) → In this documents all non-exhaustive requirements are mentioned together with the parameters to be defined and the proposing relevant system operator
- **Timing NC:** 2 years after the entry into force of the connection code

	Entry into force	+ 2 years
NC RfG	17 May 2016	17 May 2018
NC DCC	7 Sept 2016	7 Sept 2018
NC HVDC	28 Sept 2016	28 Sept 2018

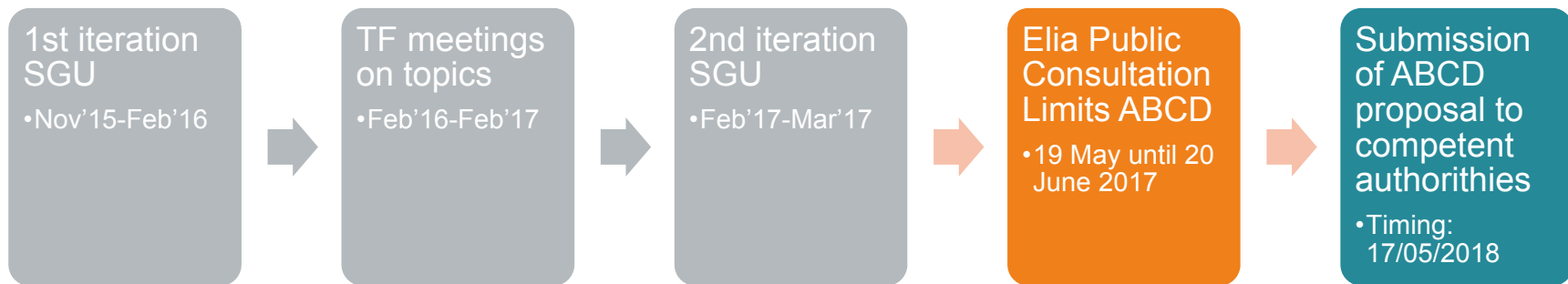
Elia will submit on **17 May 2018**:

- Adaptation proposal FTR
- Proposal on limits ABCD
- General requirements RfG + DCC + HVDC

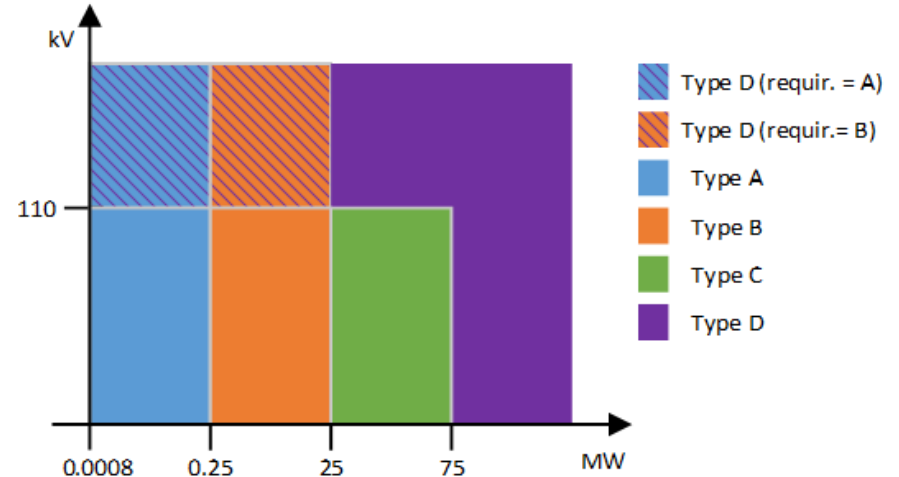
- Elia cooperates with (C)DSOs to seek alignment

1. Public consultation: maximum capacity thresholds types B, C and D PGM

Public consultation: maximum capacity thresholds types B, C and D PGM



- Consultation on proposal following NC RfG Art. 5(3)
- Consultation period 19 May – 20 June 18:00
- Consultation responses can be communicated via the form on the Elia website (documents can also be uploaded):
 - [public consultation webpage](#)
- The public consultation webpage contains a reference to the public consultation document



General overview: consultation feedback

- **Feedback received** from BGA, Febeliec and the Public DSOs (Eandis, Infrax, ORES, Resa and Sibelga)
- Various comments received on the implementation of the **non-exhaustive requirements**, although not strictly in scope of this consultation
- **Additional argumentation has been asked by Elia to DSOs with regard to thresholds A/B**

	Elia	BGA	Febeliec	Public DSOs
Thresholds A/B	0.25 MW	1 MW	1 MW	0.25 MW
Thresholds B/C	25 MW	50 MW	25 MW	25 MW
Thresholds C/D	75 MW	75 MW	75 MW	75 MW
Type D \geq 110kV	Derogation from type D requirements for types A and B \geq 110 kV	Type C \geq 110 kV should be considered Type C instead of D	Type C \geq 110 kV should be considered Type C instead of D	Agreement with Elia proposal

Thresholds A/B : 250kW – Main comments

[BGA]+[FEBELIEC]

- Choice of precise value of 250kW is arbitrary
- Impact of communication costs is too high for units between 250kW and 1 MW
- Uncertainty to forecast the future, current system needs (1MW) should be used until more certainty is provided.

[FEBELIEC]

- Strong impact on investments and on Belgian competitiveness
- No CBA performed for the choice of the limit

[BGA]

- Clarification for derogations
- Preference for the legal option based on 1MW which does not depend on the unsure outcome of derogations

Threshold A/B : 250kW

Stakeholder feedback:

- Choice of precise value of 250kW is arbitrary
- Impact of communication costs is too high for units between 250kW and 1 MW
- Incertitude for the future → Current system needs should be used instead (1MW)

Elia vision

→ 250 kW is not arbitrary

- Following the ENTSO/e guidelines (IGD), **existing regulation** forms the basis of the choice of the thresholds
 - Standards (e.g. CENELEC) are designed based on the voltage level
 - 250kVA is the current BE limit for LV/MV connection
- In line with other **EU TSOs** (e.g. DE), the limit is chosen in line with **connection criteria between LV/MV**
 - Units connected to MV have larger impact/interaction on the system management as closer to HV

Threshold A/B : 250kW

Elia vision (continued)

- Reducing the **number of categories** and thresholds at a national level is important for interpretation, readability of the codes and compliance verification
- In line with other EU TSO current proposals*, 250kW is of supporting the request of the stakeholders to create a **level playing field** at EU level

*/\ FR uses 1MW and after 3 years will go towards 250kW as the cost of comm is then expected to be cheaper.

➔ **Cost of communication < 1MW**

- Elia would like to encourage the discussion particularly within stakeholders and DSOs (public DSO and CDSOs) to clarify this and to look for the most efficient solution that takes into account the needed requirements for measurement of quality, response time, (cyber)security, interoperability and availability on the market through possible alternative technical solution.
- Elia is exploring the possibility to find a solution and use an adapted communication protocol based also on proposals or experiences from other countries.

Threshold A/B : 250kW – Derogations

Stakeholder feedback:

- [BGA] What happens at the end of the derogation period to the unit that have been installed and have benefitted from the derogation? Should they be retrofitted by default?
- [BGA] Can ELIA clarify 2 years in advance of the end of the derogation if they will renew the derogation or not?

Elia vision:

- Technical and legal interpretation: at the end of derogation the unit is considered as existing and will thus not need to be compliant with the derogated requirements, unless a CBA shows this (retroactive application). → this is needed to give security to the investment
- Elia commits to communicate significantly in advance to stakeholders if a derogation will be renewed or adapted.

Threshold B/C : 25 MW– Main comments

[BGA]

- Existing legislation/regulation is not relevant to choose a limit
- Threshold should be 50 MW as some units (i.e. GE LM6000) have issues with FRT requirements
- Reactive capacity of type C (and D) SPGM is too stringent

Threshold B/C : 25 MW – Existing legislation

Stakeholder feedback:

[BGA] Definition of the threshold at 25MW based on existing legislation is not sufficient motivation and EU harmonization should have been taken into account

Elia vision:

- The **ENTSO/e IGD** on the choice of the threshold limits suggests the existing legislations as part of the motivation to choose a limit
- The principle of '**evolution vs revolution**' has been used by ELIA in the choice of this limit
- Most of **neighboring countries** have chosen limits also taking into account existing legislations
- Most neighboring countries are in the range chosen by ELIA

Threshold C/D : 75MW & 25MW with connection point >110kV – Main comments

[BGA] + [FEBELIEC]

- Discrimination due to absence of voltage level in some regions
- Discrimination based on the type of connection for the same unit connected to the same voltage level depending on the type of connection (industrial site or CDS)
- FRT issues for small generators (25MW<75MW connected to voltage higher than 110kV)

Threshold C/D : 75MW & 25MW with connection point >110kV - Discrimination

Stakeholder feedback

- [BGA] “Boucle de l’Est” is discriminatory as there is **no possibility to connect to voltage levels <110kV**

Elia vision

- Choice of voltage level is motivated by techno-economical optimization of the grid to maximize hosting capacity of renewables and minimize asset costs
- Effective connection level is defined in a case by case way in a orientation/detailed study

Threshold C/D : 75MW & 25MW with connection point >110kV - FRT requirement

Stakeholder feedback:

- [BGA] Limit should be 50MW for technical reasons related to **FRT requirements** of for example LM6000 generators, they may not be compliant with FRT as not relevant for the system

Elia vision:

- ELIA sees an **important tendency** of reduction of large generators and volume of smaller units. These are becoming more and more important for the SOS of the Belgian system, also when connected electrically closer to transmission system..
- **LM6000 is only a technology and specific vendor.** The NC covers the needs of the overall power system. If the issue with FRT is only related to a specific generator model , an ad-hoc derogation can be requested to the TSO on a case by case approach.
- The current discussion with **BGA did not show the impossibility to respect the current FRT requirement for type C units**, including the LM6000.

Threshold C/D : 75MW + 25MW with connection point >110kV - Discrimination

Stakeholder feedback:

- [BGA]+[FEBELIEC] **Discrimination based on the type of connection for the same unit connected to the same voltage level** depending on the type of connection (industrial site or CDS)
- [BGA]+[FEBELIEC] **Units between 25 and 75 MW connected to 110kV** should be considered of type C and not D

Elia vision:

- View of TSOs share the need for exception for type A+B

Use of standards

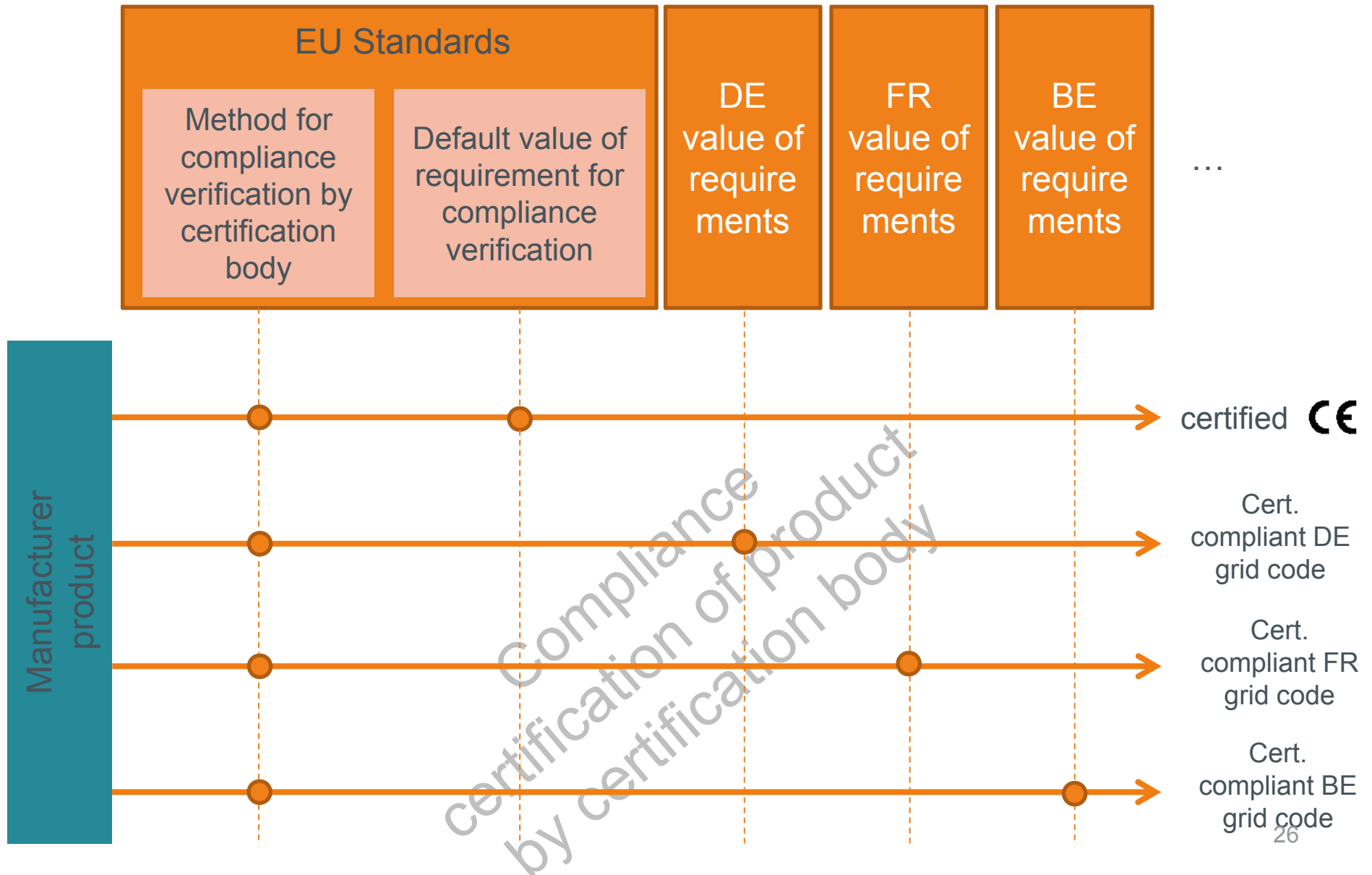
Stakeholder feedback:

- DSO prefer the **use of default values of EU standards** (CENELEC) to ease also the compliance monitoring of units connected to DSO networks. These standards are still being discussed and will be ready by 2018.
- DSOs ask Elia and regional regulators to **create a stable legal framework to facilitate 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.

Elia Vision:

- Legal analysis shows that law text prevails on standards.
- ELIA encourages and support discussion between DSOs and regulators to look for a pragmatic solution for the transitory period (e.g. use of existing standard values closest to Belgian proposal).

Recall on process for compliance certification with standards and national grid codes



Non-NC driven changes to the Federal Grid Code – Position Paper CDS

Next steps before WS 23/11

Proposal of Planning :

- 22/9: official approval of Position Paper CDS by Users' Group, after last comments
- September – October: preparation of a global proposal for new Title CDS
- Begin November: presentation of the proposal in WG BG
- 9/11: send track-changes of the proposal to Users' Group (2 weeks in advance)
- 23/11: 2nd Workshop: discussion on the proposal for Title CDS

Last Changes post Meeting WG BG 19/6

Meerdere activeringsniveaus – Statuut 2

- Principe: CDS-beheerder heeft de mogelijkheid om een 1/3 partij als toegangshouder aan te duiden en zelf geen toegangscontract af te sluiten. Voor de toegangspunt(en) van CDS op het Elia-net, moet er een bijlage 14 van het toegangscontract ondertekend worden door CDS-beheerder, toegangshouder en Elia.
- Ondersteunende diensten leveren aan Elia: CDS-beheerder zijn eigen toegangshouder moet zijn (vertrouwelijke informatie verstuurd wordt aan de verschillende marktspelers en Elia. Hij moet zijn eigen toegangscontract afsluiten en bijlage 14 van het toegangscontract tekenen).

Regels betreffende algemene verplichtingen – Verduidelijking

Niet bedoeling om in FTR bijkomende algemene verplichtingen op te leggen die nu nog niet bestaan of geen enkele bron hebben (op wettelijk ofwel hogere Europese rechtsregels richtlijn, netwerk codes, REMIT). Precieze inhoud van dit luik van het FTR zal in praktijk bekeken worden indien de artikels van de nieuwe algemene titel zullen geschreven worden.

Reconciliatieproces – Verduidelijking

Weinig van toepassing gezien realiteit van CDSsen : AMR meters ; 6M voor correctie van fouten in allocatie (zie nieuwe footnote)