



Connection requirements for generators to distribution grid – C10/11 - CENELEC

26 Oct 2016 – Elia WG Belgian Grid



Context & Objective (1/2)

Ongoing debates in Elia TF Network Code Implementation

- Focus on connection codes
- Topic-wise discussion
 - Significant grid user, reactive power, ...

Active involvement for DSOs w.r.t. connection requirements for type A/B generators

- Existing Synergrid prescription C10/11 must be made compliant with network codes
 - Also other evolutions to be integrated, eg scope: 36kV–distribution systems, storage ...
- Scope C10/11: requirements for connection of generators to public distribution grid

Context & Objective (2/2)

Stakeholder feedback on Network Code Implementation Process (*Elia special workshop - Genval, 6 sept 2016*)

- ask for global overview of connection requirements
- where possible: harmonization with other European Member states

Therefore, Synergrid

- will publish first consultation version of renewed C10/11, compliant with NC
- with European CENELEC document as most important reference

Next slides: short introduction to C10/11 + process, and to CENELEC

C10/11 – structure

New structure: based on categorisation of generators instead of topics

Three parts – *based on three CENELEC docs*

- $\leq 10\text{kVA}$ (\rightarrow CLC/EN 50438-1:2015)
- Low voltage distribution grid & $> 10\text{kVA}$ (\rightarrow CLC/TS 50549-1:2015)
- High voltage distribution grid & $\leq 25\text{ MVA}$ (\rightarrow CLC/TS 50549-2: 2015)

Reminder

- Network code RfG is no exhaustive set of connection requirements – only with relevant impact on transmission system
- C10/11 also deals with requirements related to local grid concerns
 - e.g. one or three-phase connection of small generators

C10/11 envisaged consultation process

Public consultation expected end 2015 *(depending on approval Synergrid Techn. Committee)*

Earlier, Synergrid engaged **not to “bypass”** ongoing work in TF NCI *(TF NCI 26/4) ...*

...but we see **added value** in publishing (informal) consultation version now

- to give global overview of all envisaged capabilities & to collect first feedback;
- because other topics than network code matters need revision/formalisation;

Note: some specific articles in C10/11 will be marked as depending on final decision A-B threshold

We are open for suggestions w.r.t. further procedure & timing for **formal consultation & regulatory approval process**

- but we aim for final approval in 2017
- ultimate deadline = 2 years after publication RfG (RfG Art 4.2 & 7.4) = April 2018

Note: meanwhile a formal consultation will be done, to integrate storage devices in scope C10/11

Relation C10/11 – CENELEC documents

Synergrid wants to refer as much as possible to European references:

CENELEC Norms (EN) and Technical Specifications (TS), that are

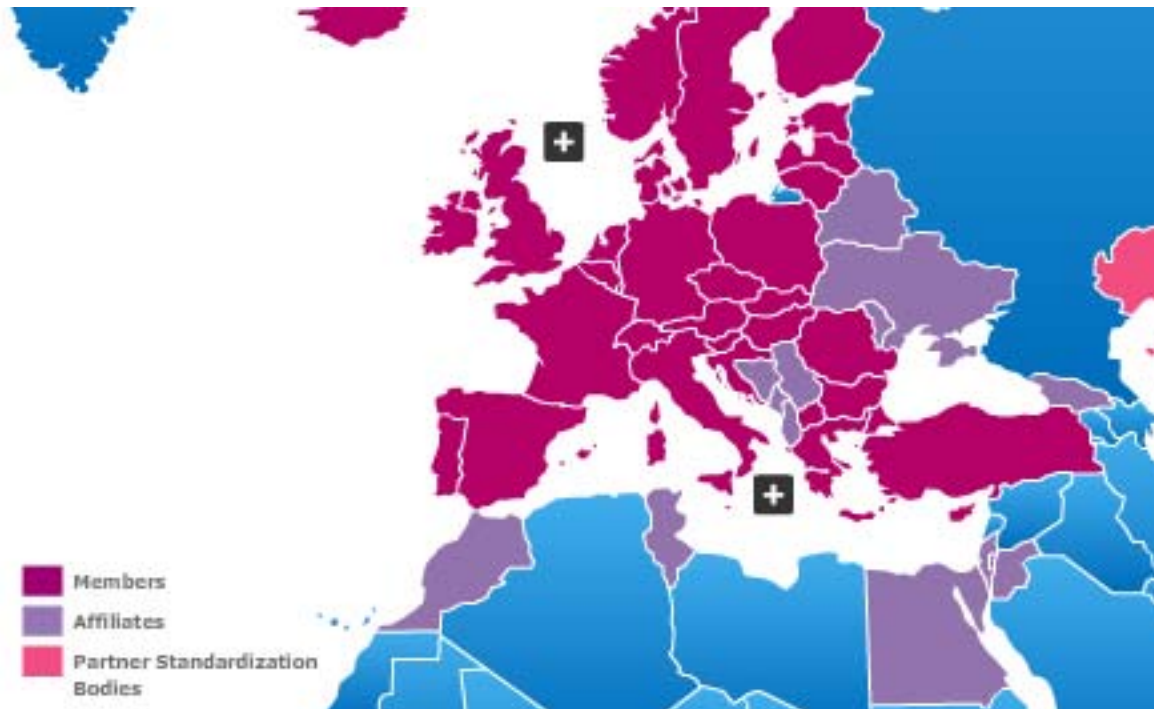
- compliant to RfG
 - subdivided in more logical technical categories (LV / MV) and enriched with standard requirements for local issues
- discussed on European level between experts from various organisations
 - = the right platform for discussion on realistic technical capabilities
- aim to support competitive European manufacturer market

Advantages for manufacturers, generator users and system operators

- competitive manufacturer market, especially for mass products (A/B generators)
- connection process & compliance testing: based on **type tests & certificates**

About CENELEC

- CENELEC = European Committee for Electrotechnical Standardization
- 33 members: national standardization bodies from EU MS&other
- www.cenelec.eu and www.cencenelec.eu



Technical specifications vs European Standard

(extract from CENELEC website)

EN (European Standard) carries with it the obligation to be implemented at national level by being given the status of a national standard and by withdrawal of any conflicting national standard

A Technical specification (TS) is established and approved by a technical body by a weighted vote of CENELEC national members. Technical Specifications are established with a view to serving, for instance, the purpose of:

- publishing aspects of a subject which may support the development and progress of the European market,
- giving guidance to the market on or by specifications and related test methods,
- providing specifications in experimental circumstances and/or evolving technologies.

CENELEC references

- Involved CENELEC Technical body: **CLC/TC8X**
 - See [link](#) for scope, structure, action plan...
- **Involved standards/specifications**
 - **EN 50438**: *Requirements for the connection of micro-generators in parallel with public low-voltage distribution network,*
 - **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*
- **Evolutions:**
 - ongoing revisions & “upgrade” of TS to EN
 - will be taken into account in new C10/11

Conclusion

Revision & restructuring of C10/11 is being prepared

- RfG compliant
- based on CENELEC references

“Early” consultation is planned for ensuring stakeholder involvement

- Aim to conclude in 2017
- Firm deadline: April 2018

Meanwhile:

- consultation to formally integrate storage devices in scope C10/11
- follow-up of CENELEC evolutions