European Network of
Transmission System Operators
for Electricity

entsoe

Harmonisation

ENTSO-E guidance document for national implementation for network codes on grid connection

16 November 2016

ENTSO-E AISBL • Avenue de Cortenbergh 100 • 1000 Brussels • Belgium • Tel + 32 2 741 09 50 • Fax + 32 2 741 09 51 • info@entsoe.eu • www. entsoe.eu

Contents

ENTSO-E AISBL • Avenue de Cortenbergh 100 • 1000 Brussels • Belgium • Tel + 32 2 741 09 50 • Fax + 32 2 741 09 51 • info@entsoe.eu • www. entsoe.eu

DESCRIPTION

Code(s) and Article(s)	NCs RfG, DCC and HVDC All articles with non-exhaustive requirements for which a national choice is requested (see tables in IGD Parameters on non-exhaustive requirements) and also articles with different exhaustive requirements depending on the synchronous area or the country in which the affected Grid User, TSO or DSO is located.
Objective	This IGD provides broad guidance to Network Operators in context of national implementation of the 3 CNCs on how in principle to deal with the diverging views arising from • On the one hand defined by the scope of the Connection Network Codes (CNCs) as per Regulation (EU) 714/2009 limiting content to aspects which have a cross-border impact. • On the other hand desire to go further driven by many stakeholders, notably manufacturers particularly if dealing with the volume end of the markets such as low rating, low voltage connections, to go further and define cross Europe standardized solutions.
NC Frame	The national implementation needs to be tailored to manage and make best use of local system characteristics (network, load, generation portfolio and technology). Implementation of CNCs should deliver enough level of harmonization in order to facilitate market integration in Europe while ensuring secure system operation taking into account the local systems characteristics. The CNCs therefore provide an appropriate level of harmonization of requirements within the above context. Network Codes do not exclude collaboration between relevant parties. For example, collaboration on frequency-related requirements is reasonably recommended at synchronous area level, while specification of reactive power capabilities may in some contexts require collaboration at regional level. A significant level of harmonization has been achieved through the exhaustive requirements within the CNCs and, in certain cases of non-exhaustive requirements, through the setting of ranges and boundary values. Nonetheless, the end value for non-exhaustive requirements has to be defined nationally, for that purpose it should be clarified the relationship between European Codes and National Legislation: • When it is set a range or boundary values within a CNC, National Legislation can´t, while respecting the subsidiarity principles of the EU, fix values under the minimum or higher than the maximum established in the CNCs ranges.

ENTSO-E AISBL • Avenue de Cortenbergh 100 • 1000 Brussels • Belgium • Tel + 32 2 741 09 50 • Fax + 32 2 741 09 51 • info@entsoe.eu • www. entsoe.eu

- It should be taken into account what level of definition and what kind of values within the different requirements should be under the focus of the harmonization considering also their potential local effect. The CNCs is legislation that aims in crossborder issues, so it has to prevail the spirit of the norm and understand harmonization as a principle that can be pursued without undermining national specific values that can be more accurate and helpful for solving locally issues.

Further harmonisation beyond what is justified to facilitate market integration can be pursued as follows:

- By System Operators voluntarily collaborating where there are no national / local system reasons to select different approaches. Providing CNC implementation guidance can be helpful in this context.
- By both System Operators and Stakeholders discussion within the framework of European Stakeholder Committee Meeting The ENTSO-E's Active Library offers a website that can be used to find references and current practices regarding the CNC implementation in any EU country.
- By System Operators identifying differences between existing standards and the requirements in the 3 CNCs and supporting the standards organisations to efficiently remove any inconsistencies.
- By stakeholders working with the international standards organisations to further optimise the practical ways of meeting the requirements of the CNCs and their national implementation. This is particularly pressing for the high volume, low rating equipment (such as Type A Power Generating Modules (PGMs) in NC RfG). For high volume Type A devices the current practice is to demonstrate compliance against standards rather than against CNCs. Therefore success of implementation of CNCs in this area is particularly dependent upon standards being up to date and reflecting the CNC requirements and their national implementation. ENTSO-E is supporting this effort and System Operators are encouraged to do likewise. More information regarding Type A devices compliance against CNC can be found in the IGD -Special issues associated with type 'A' generators-.

Link to ACER Framework Guidlines	ACER Framework Guidelines do not state specific provisions regarding the need or precedence of pursuing a full harmonization of requirements.
Further information	ENTSOE RfG and DCC Justification Outlines:

ENTSO-E AISBL • Avenue de Cortenbergh 100 • 1000 Brussels • Belgium • Tel + 32 2 741 09 50 • Fax + 32 2 741 09 51 • info@entsoe.eu • www. entsoe.eu

(examples and references)	http://www.acer.europa.eu/Media/News/Documents/121221-DCC%20-%20Justification%20Outlines.pdf http://www.acer.europa.eu/Media/News/Documents/120626%20-%20NC%20RfG%20-%20Justification%20outlines.pdf Further IGDs providing information on decision making at national level including coordination and collaboration with others: • IGD Making non-mandatory requirements at European level mandatory in a country • IGD Parameters of non-exhaustive requirements • IGD Special issues associated with type 'A'

INTERDEPENDENCIES

Between the CNCs	This file covers the current 3 CNCs.
With other NCs	There is a strong relation between the harmonization of technical capabilities in the CNCs and harmonization within System Operation Guidelines. E.g. the set of specific technical capabilities in the field of very fast active power Demand Response (DR) controls may allow sharing in future of these services with few differences in their way of application across Europe allowing market mechanisms with common harmonized principles.

COLLABORATION

TSO – MS- NRA	Encourage development of appropriate standards.
TSO – generator owner – DSO- CDSO	General support and collaboration to progress international standards reflecting the requirements of the CNCs.

ENTSO-E AISBL • Avenue de Cortenbergh 100 • 1000 Brussels • Belgium • Tel + 32 2 741 09 50 • Fax + 32 2 741 09 51 • info@entsoe.eu • www. entsoe.eu