

WORKSHOP WITH STAKEHOLDERS ON THE CONNECTION NETWORK CODES NATIONAL IMPLEMENTATION GUIDANCE DOCUMENTS



ENTSO-E Secretariat – Ground floor
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29 February 2016

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ENTSO-E Stakeholder Workshop

CONNECTION NETWORK CODES NATIONAL IMPLEMENTATION GUIDANCE

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Brussels

29. FEBRUARY 2016

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Welcome

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Legal Background

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Objective of the Workshop

Connection Network Codes - State of play

NC RfG : EC adoption 26. June 2015; European Parliament and Council scrutiny since November 2015

NC DCC : EC adoption 16. October 2015, scrutiny pending

NC HVDC: EC adoption 11. September 2015, scrutiny pending

Non-binding guidance on implementation

1. No later than six months after the entry into force of this Regulation, the ENTSO for Electricity shall prepare and thereafter every two years provide non-binding written guidance to its members and other system operators concerning the elements of this Regulation requiring national decisions. The ENTSO for Electricity shall publish this guidance on its website.
2. ENTSO for Electricity shall consult stakeholders when providing non-binding guidance.
3. The non-binding guidance shall explain the technical issues, conditions and interdependencies which need to be considered when complying with the requirements of this Regulation at national level.

Implementation guidance

Focus

- Non-exhaustive requirements of all CNCs

Purpose

- To provide technical information/guidance for the decision-making on specifications for non-exhaustive requirements

Addressees

- ENTSO-E members (TSOs) and other system operators (DSOs and CDSOs)

Framework

- Consultation of stakeholders

Timeline

- 6 months after CNC entry into force – presumably autumn 2016

Stakeholder interaction in providing implementation guidance

ENTSO consults stakeholders at several stages

- Identification of topics for implementation guidance
 - Survey to learn stakeholders' priority topics in December 2015 – January 2016)
 - To define content of the identified priority topics - **Today!**
- Consultation of draft Implementation Guidance Documents (IGDs) scheduled for summer 2016

Objectives of the workshop

- Elaborate further on the priority topics for implementation guidance identified by the stakeholder survey
- The objective is to identify the content of each of the priority topics, i.e. „bullet points under each headline”
- What shall be addressed by the IGDs
- The objective is **not** to find solutions like specifications of non-exhaustive requirements

- Priority topics will be presented next – workshop is limited to these issues
- Equal time is allotted to work on each topic

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The logo graphic for Entso-e, featuring three overlapping circles in shades of blue and purple, with a yellow 'e' inside the central circle.

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OUTCOMES OF STAKEHOLDERS' SURVEY

ENTSO-E supports the CNC implementation

Helge Urdal, ENTSO-E

CNC Implementation Project Team Leader

ENTSO-E's Workshop with Stakeholders on the Connection Network Codes national implementation guidance documents.

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1 ENTSO-E suggested guidance topics

2 Stakeholders' topics priorities

3 Additional topics proposed by stakeholders

4 Four new topics based on your input

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1. The Stakeholder survey questions

- Please prioritise the following topics according to your own priority:
(i) very important (ii) important (iii) less important (iv) of no relevance
- Points 4 3 2 1

Initial topic list was defined by TSOs containing:

- Making non-mandatory requirements at European level mandatory at national level
- CBAs
- Parameters for non-exhaustive requirements
- Compliance, test and monitoring
- Reactive power on TSO-DSO interface
- Reactive power requirement for PPMs & HVDC converters at low / zero active power
- Rate-of-change-of-frequency withstand capability
- Post fault active power recovery

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1. The Stakeholder survey questions

Topics continued

- Fault current contribution from PPMs & HVDC converters
- Interactions between HVDC controllers
- Need for Synthetic Inertia for frequency regulation
- Frequency related parameters for non-exhaustive requirements
- System restoration requirements
- Instruments, simulation, models & protection for non-exhaustive requirements
- Voltage related parameters for non-exhaustive requirements
- Determination of the thresholds for Types B, C & D power generating modules

• Other topics that are highly relevant to you and are suggested to be addressed in the ENTSO-E guidance documents?

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Outcome - Stakeholder Survey–Priority scores

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Topic	Priority ranking
Rate-of-change-of-frequency withstand capability -	1
Guidance on compliance, test and monitoring -	2
General guidance on parameters for non-exhaustive requirements -	3
Post fault active power recovery -	4
Frequency related parameters for non-exhaustive requirements -	5
Determination of the thresholds for Types B, C & D power generating modules -	6
Voltage related parameters for non-exhaustive requirements -	7
Instruments, simulation, models & protection for non-exhaustive requirements -	8
Guidance on making non-mandatory requirements at European level mandatory at national level	9
General guidance on CBAs -	10
Need for Synthetic Inertia for frequency regulation -	11
System restoration requirements -	12
Reactive power requirement for PPMs & HVDC converters at low / zero active power -	13
Fault current contribution from PPMs & HVDC converters -	14
Reactive power on TSO-DSO interface -	15
Interactions between HVDC controllers -	16

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3.1 Additional guidance topics proposed by Stakeholders' in survey

DSO topics:

Clarification of real time data & communications including redundancy.

Guidance on Art 14

System restoration type B – conditions for reconnection

CEDEC welcomes stakeholder involvement, particularly re DCC. Guidance crucial for home appliances, enabling demand side flexibility. Instrumental to ensure internal market principle. Distinct guidance for each of 3 CNCs. Encourage national authorities to involve manufacturers. Guide TSOs towards harmonised approach, incl. rqmts & certification. Ensure alignment with existing international standards or in ongoing international / European standardisation work. Provide list of direct and indirect rqmts for residential consumers owning smart appliances (with demand side flexibility) reminding national authorities to take account of EU legal framework.

Eurelectric: information exchange between TSO & SGU (DSO connected). Rqmts for real time data & basic info.

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3.2 Additional guidance topics proposed by Stakeholders' in survey

Consultants:

Q requirements – use of excessive default values. (T6.1 and 6.2)

Guidance on FRT tclear (caution in use of 0.25s),

Definition of Connection Point re applicability of rqmts (at CP or unit?)

Derogations. Can derogation in one nation allow derogation in another without CBA?

Clear timeline for implementation of articles in each code

Re compliance, how linked to standards? How to work in practice?

Guidance doc covering all definitions within various codes.

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3.3 Additional guidance topics Manufacturers

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Unit definition in RfG

Cumulative nature of FSM & LFSM in RfG

Single site to observe implementation in different countries

LVRT rqmts & the unnecessary cost on gen sets

Timetable not accepted (most power plants need 1.5-2 years from order to commissioning)

Complaint about RfG adding cost for high volume manufacturers. Regions should be identified where cross border trading is common (HU: may suggest application only here?)

GTs: Certification & testing. Role of European & other international bodies in relation to national bodies - before defining national rqmts. Set rqmts lower to reduce risk (e.g. maintain P with falling f)

Harmonisation between CNCs & international technical standards – discrepancies should be addressed – how harmonisation will be achieved. IGD?

Guidance should remain general non-binding ensuring coherent implementation on issues of key relevance at EU level.

Clarity on mandatory at national level, what date effective, retrospectivity & on refurbishment. Specify non-exhaustive swiftly, transparent and start without delay.

French small combustion engine assoc: Align to standards, harmonise, clarify “Authorised certifier” – could manufacturer’s lab become AC? Should consider known technology limits such as FRT re sync alternators.

French assoc of equip. manufacturers: Repeat of above. Standards key to access to world markets.

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3.4 Additional topics - Developers / Plant owners

Most important goal for all is HARMONISATION, including small units

Strange that code does not define replacement / modernisation of Types A & B.

Need reading committee to remove code errors

Other respondents:

Dk: ENTSO-E could propose how national regulations look. Maybe they should all be the same?
MS own interpretation does not support internal market / reduce connection costs

How to achieve harmonisation for non-exhaustive rqrmts & prevent disturbance to level playing field.

RoCoF withstand capability. Very important for Type 1 / less important Type 2.

Acceptance & extension of existing Grid Code certificates (e.g. German 5 years), limit costs.

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4 Discussion

Additional guidance topics selected in response to Stakeholders' requests

- Harmonisation
- Real time data & communications including redundancy.
- Special issues for Type A

Topic added by ENTSO-E:

- Voltage stability in a converter dominated system

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ENTSO-E NEXT STEPS

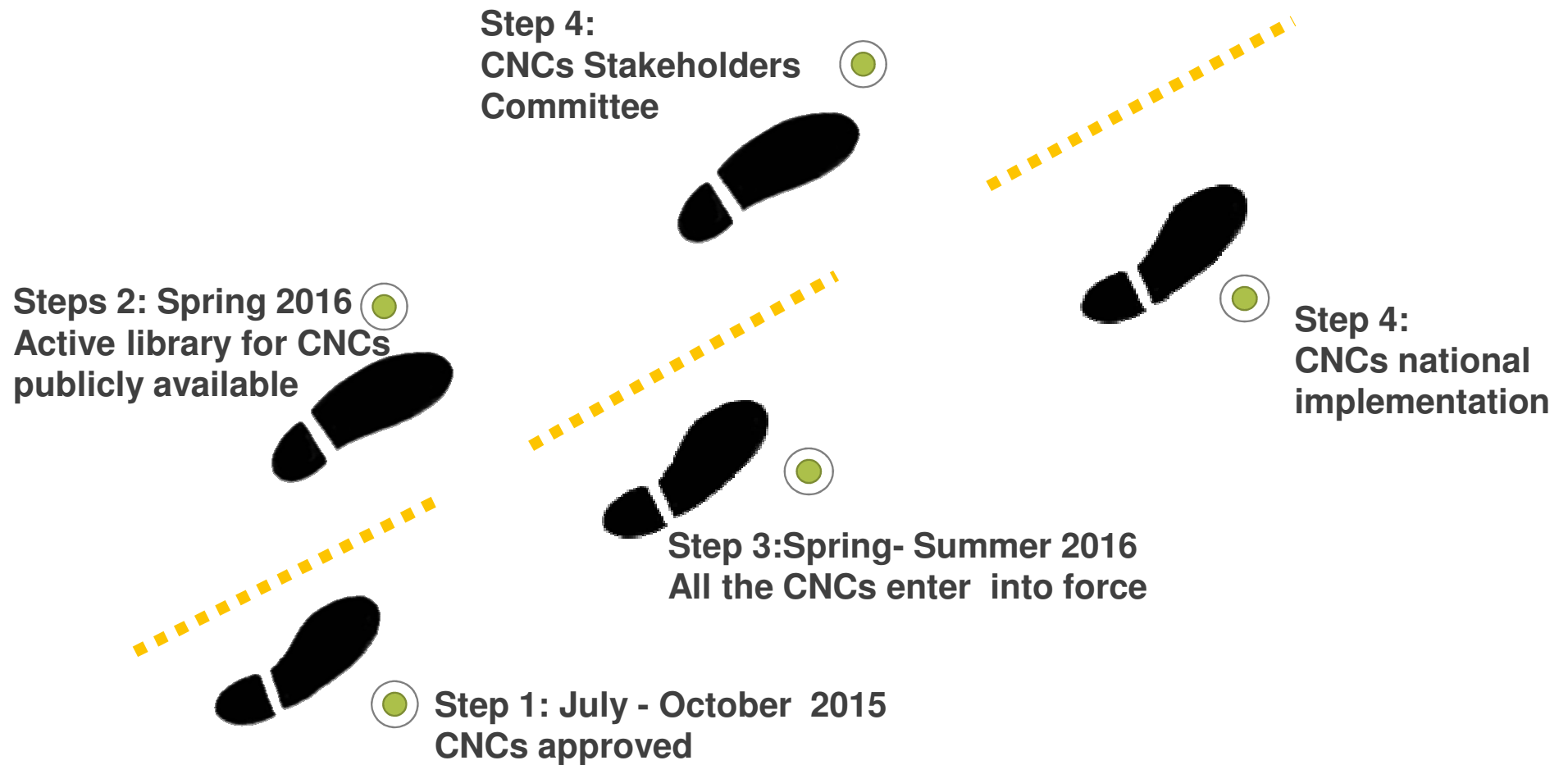
Irina Minciuna

**ENTSO-E's Workshop with
Stakeholders on the
Connection Network Codes
implementation guidance
documents**

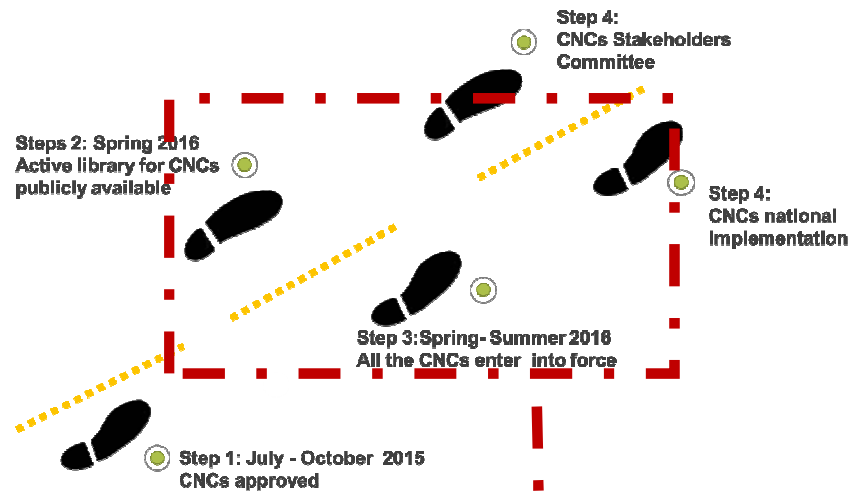
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CNCs implementation - next step



CNCs implementation - next step



Dec '15-Jan '16
Survey on the guidances' topics

29 Feb '16
'Define the content of each guidance document

Mar - June '16
Draft the guidances

June - July '16
Consultation of the implementation guidances

Sept '16
Publication of the final implementation guidances

ENTSO-E roles regarding the CNCs implementation

ENTSO-E informs

- Externally: public active library
- Internally: internal active library
- Publications and workshops

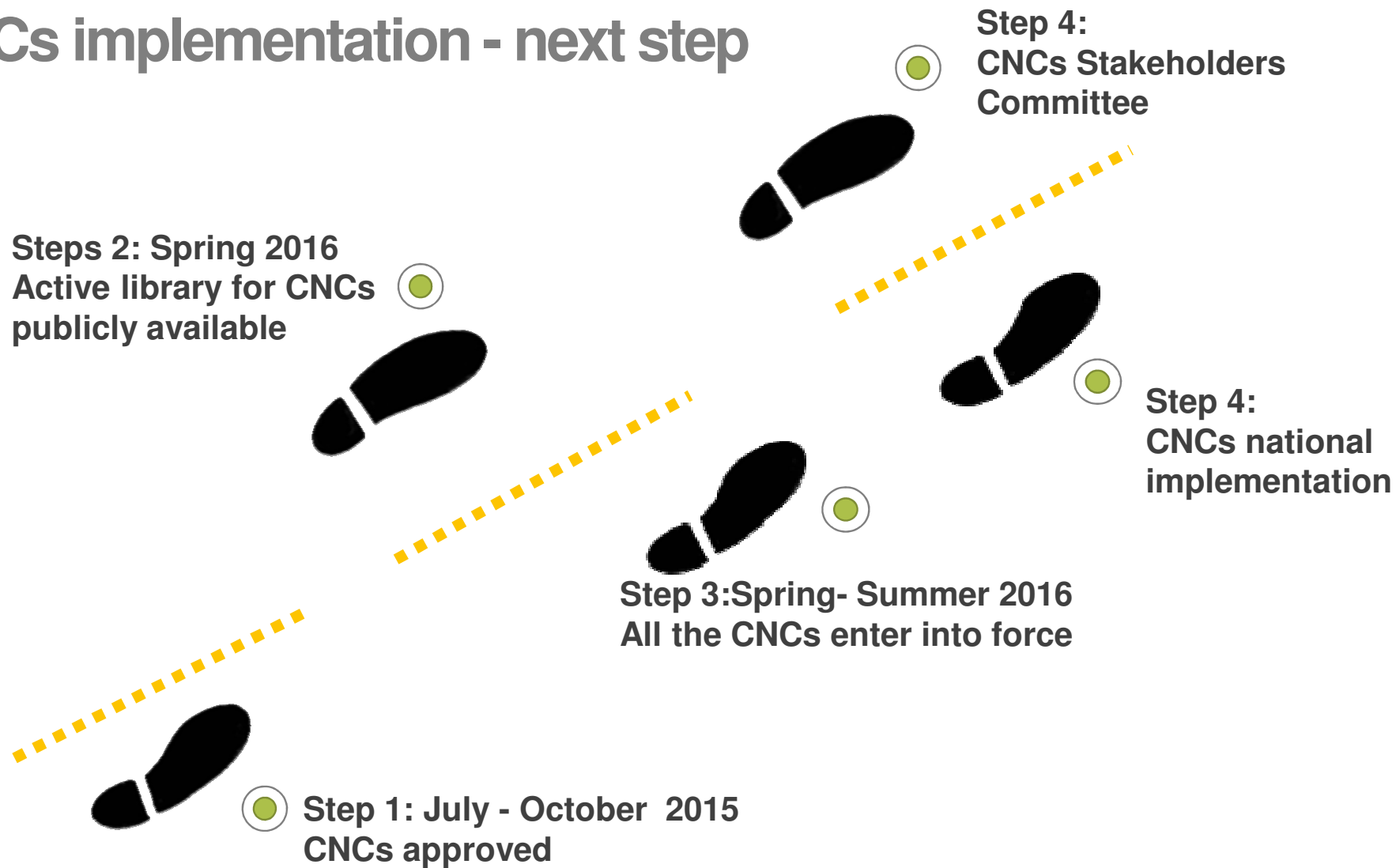
ENTSO-E guides

- Implementation guidance documents

ENTSO-E monitors

- Together with ACER

CNCs implementation - next step



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