

ENTSO-E Public Workshop on NC HVDC

NC development, stakeholder engagement, and interactions
with other codes

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What is a Network Code?

A set of rules applying to one aspect of the energy sector

Which are developed by ACER, ENTSO-E & Market Participants

And become legally binding after the Comitology process

Hence they will have the same status as any other Regulation

What do Network Codes aim for?



Enabling renewables

Creating clear connection rules.

Providing harmonisation to benefit manufacturers.

Creating markets to reduce risks.

Ensuring security of supply

A coordinated approach to system operations.

Greater optimisation to enhance efficiency.

More flexible markets (e.g. balancing).

Enhancing competition

A single market design across Europe (in all timescales).

Promoting cross border trade & enhancing liquidity.

Reducing risk for all market players

What are the topics covered by Network Codes?

Connection Related Codes

- Requirements for Generators (RfG)
- Demand Connection Code (DCC)
- **HVDC Connection Code (HVDC)**
- Connection Procedures (CP)

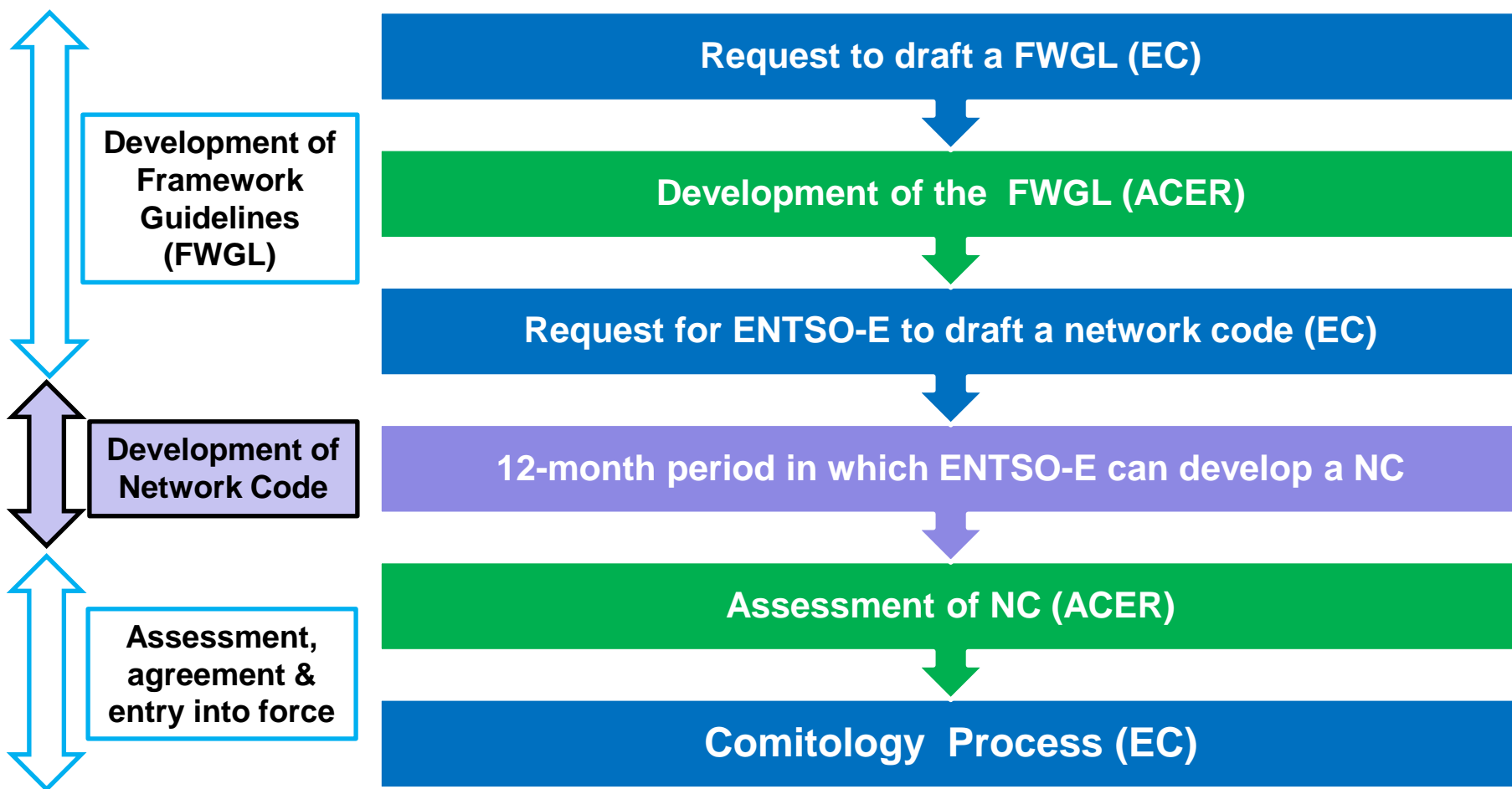
System Operation Related Codes

- Operational Security Network (OS)
- Operational Planning & Scheduling (OPS)
- Load Frequency Control & Reserves (LFCR)
- Operational Procedures in an Emergency (EP)
- Staff Training (ST)

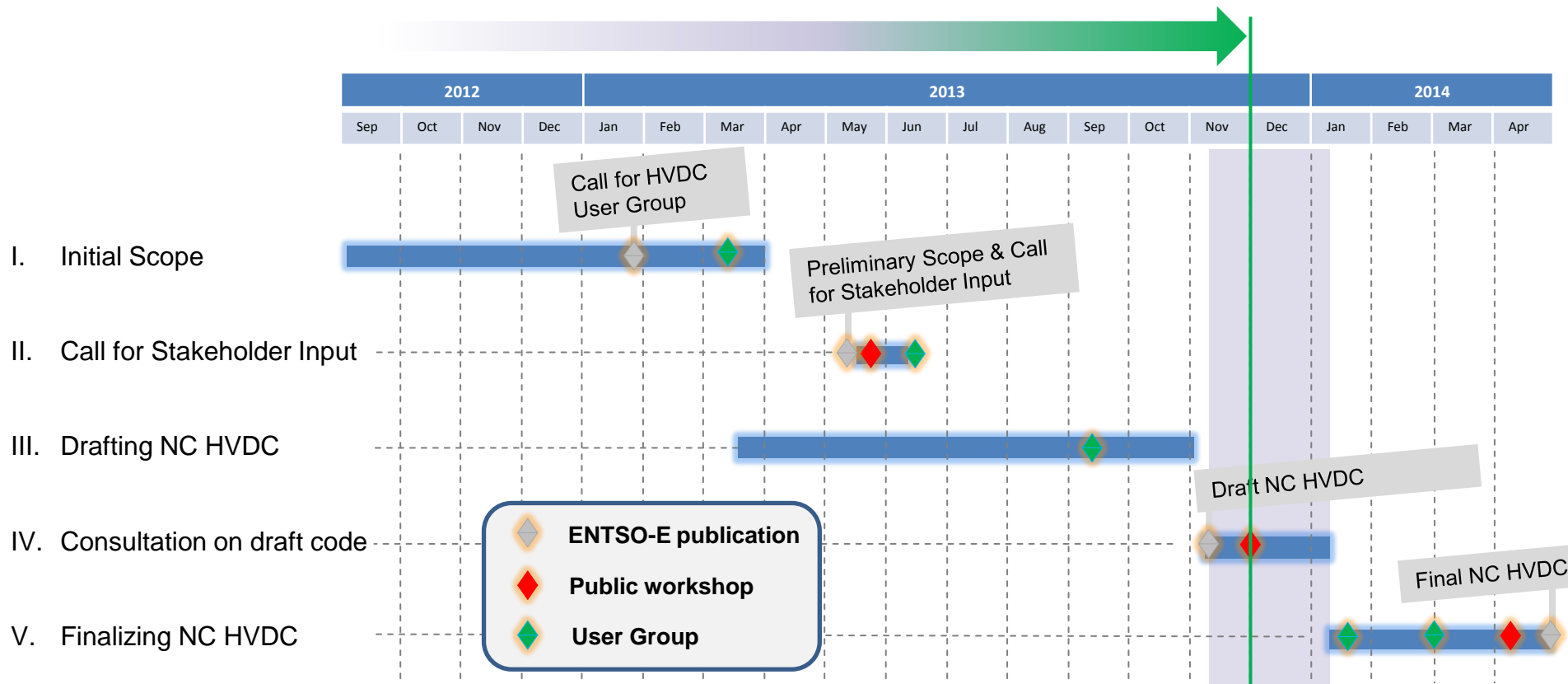
Market Related Codes

- Capacity Allocation & Congestion Management (CACM)
- Forward Capacity Allocation (FCA)
- Balancing Network Code (BAL)

How are network codes developed?



How is NC HVDC developed?



How is NC HVDC developed?

ACER's framework guidelines & other Network Codes



Call for Stakeholder Input & NC HVDC Preliminary Scope



Full draft NC HVDC (in consultation now) and set of supporting documents:

Explanatory Note

Frequently Asked Questions

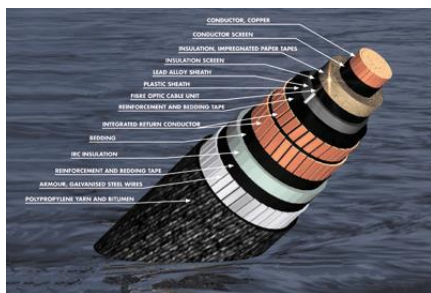
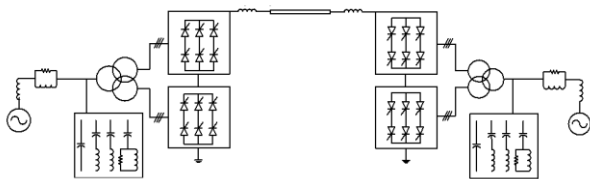
Requirement Outlines



Final NC HVDC

How are stakeholders involved in the process?

Various means for involvement according to level of detail and technical interest



NC HVDC User Group

Written consultations

Public workshops

networkcodes.entsoe.eu

What was the outcome of the first Call for Stakeholder Input?

NC RfG / DCC as reference point

- Be cognisant of inherent additional capabilities
- Clarify need for deviations

Agreement on 'Significant User' classification

- Dual objective of NC HVDC being forward looking and avoiding obstacles for future grid investments
- What is the exception? What should be mandatory for all? Where is flexibility for local conditions essential?

Focus on AC-side requirements for all configurations

- NC HVDC strengthens present best practices, reflects power system scenarios and enables grid development plans
- Complimentary with ongoing work in CIGRE/CENELEC

Technology-neutral approach of the code

- Further discussion based on draft requirements

How do Network Codes link to each other?



What are the main links of NC HVDC with other codes?

Operational codes:

Tools for coordinated and secure real time system operation across Europe

Connection codes:

Future-proof functional capabilities

Market codes:

Standardized services and products for a competitive pan-European market

Summary

NC HVDC complements earlier connection codes by giving a European frame of forward-looking functional capabilities, and feeds into other operational and market codes

Interaction with wider industry is essential via User Group, workshops and ongoing consultation

Full draft network code is open for public consultation – Your comments are much welcome until 7 January 2014 at <https://www.entsoe.eu/consultations/>

Final NC HVDC, incl. assessment of comments, will be submitted to ACER by end of April 2014

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Thank you for your attention!

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