

European Network Codes

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Requirements for Generators

EirGrid and Soni DS3 workshop

on Commissioning and Testing

Dundalk 19th November 2012

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Reliable Sustainable Connected

Topics



- Network Codes overview
- Expected enforcement period
- Operational Notification Procedures
- Derogations
- Compatibility with existing standards
- Retroactive Application

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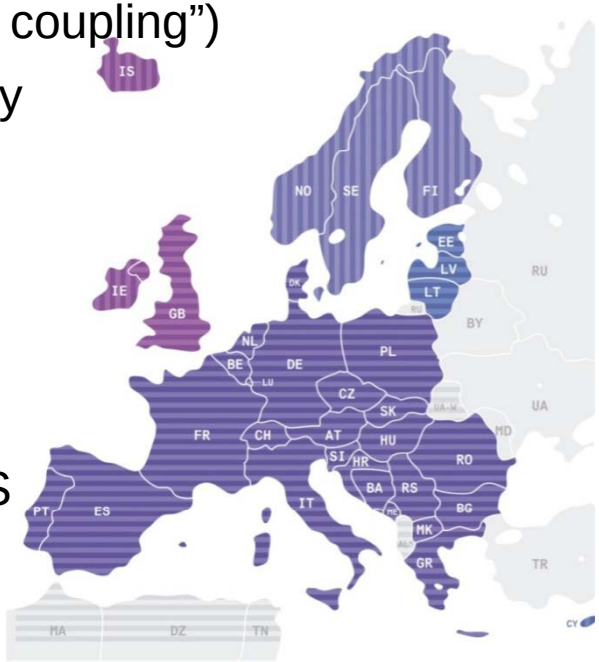
ENTSO-E has significant role in delivering European energy and climate change objectives

Key activities set out in Regulation 714/2009 (on cross-border electricity trade, part of the 3rd Internal Energy Market Package)

- Deliver **network codes**
- Deliver **network plans** European / regional view of system needs (“TYNDP”)
- Deliver crucial aspects of **market integration** (“market coupling”)
- **R&D Plan** (fully included in EEGI – European Electricity Grid Initiative, part of the SET Plan)

Through its members deliver the **infrastructure** to:

- enable markets to function,
- secure energy supply,
- meet climate change objectives through connecting RES



Represents **41 members from 34 countries**

EC / ACER / ENTSO-E high priority list
version 8 May 2012

	Deliverable	Scoping Phase		ACER FG draft		ENTSO-E code drafting		ACER evaluation	Comitology
		Start	End	Start	End	Start	End		Start
	Products/legislation relevant for effective implemention of the IEM								
Electricity	FG on capacity allocation and congestion management			Q1/11	Q2/11				
	NC on capacity allocation and congestion management [1]					Q3/11	Q3/12	Q4/12	Q1/13
	NC on forward markets					Q4/12	Q3/13	Q4/13	Q1/14
	Regional progress, setup and testing (incl. AESAG process and Regional Initiatives Work Program)								
	EC comitology guideline on governance								Q1/13
	FG on grid connection			Q2/11	Q2/11				
	NC on Requirements for Generators connection					**Q3/11**	**Q2/12**	**Q3/12**	**Q4/12**
	NC on DSO and industrial load connection					Q1/12	Q4/12	Q1/13	Q2/13
	NC on HVDC connection					Q1/13	Q1/13	Q1/14	Q1/14
	FG on system operation [2]			Q2/11	Q4/11				
	NC on operational security					Q1/12	Q1/13	Q2/13	Q3/13
	NC on operational planning and scheduling					Q2/12	Q1/13	Q2/13	Q3/13
	NC on load-frequency control and reserves					Q3/12	Q2/13	Q3/13	Q4/13
	NC on operational training								
	NC on requirements and operational procedures in emergency								
	FG on balancing	Q3/11	Q4/11	Q1/12	Q3/12				
	NC on balancing [3]					Q4/12	Q3/13	Q4/13	Q1/14
	EC comitology guideline on transparency								Q3/12
	FG on Third Party Access								
	NC on third party access								
	NC on data exchange and settlement								
	Possible Guidelines/FG on incentives to TSOs to increase cross-border	Q3/12	Q4/12						
	Possible Guidelines on investment incentives to TSOs	Q3/12	Q4/12						
	EC Comitology Guideline on tariffs	Q3/12	Q4/12						

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Steps to Enforcement



Draft Code produced by ENTSO-E

RfG July2012

ACER approved code to EC

Est. 3mths

RfG End of 2012

EC Comitology process

Est. 24 mths

RfG End of 2014

National Legislation – Grid Code

Up to 24 mths

RfG End of 2016

RfG in Force

Est. 2017 Onwards

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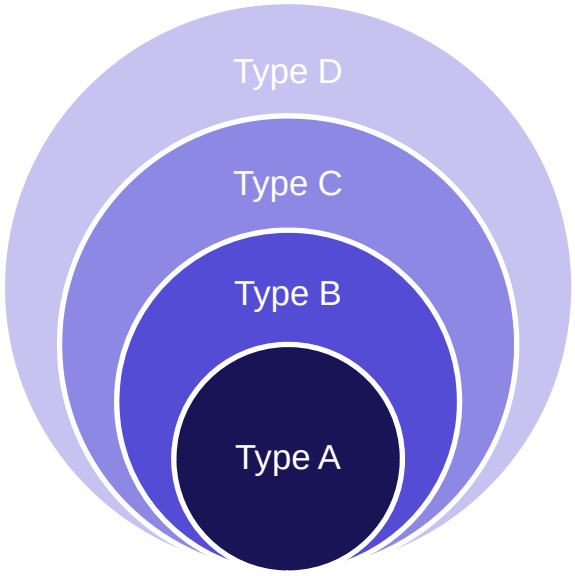
Applicable Generators

Generators connected at 110kV+ or above 10MW

Generators above 5MW

Generators above 0.1MW

Generators above 800W





How is the connection of new Generator units notified?

ACER Framework Guideline on Electricity Grid Connection

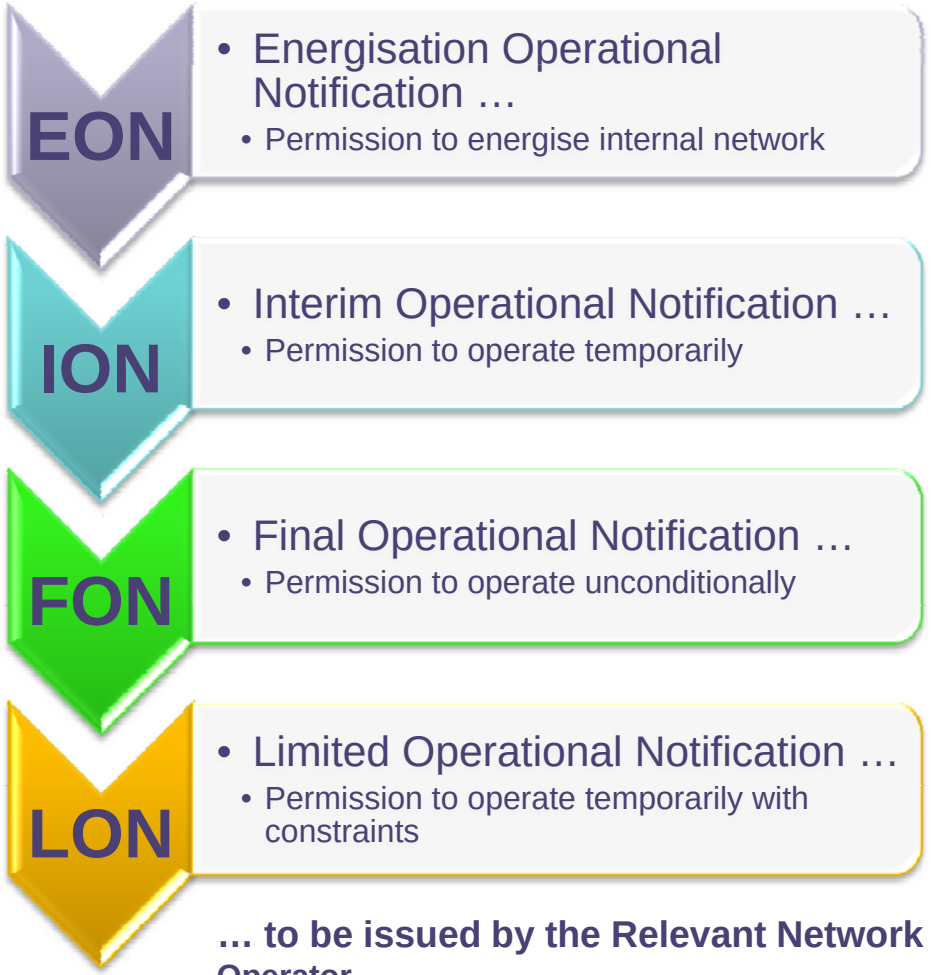
"The network code(s) shall contain provisions committing TSOs and DSOs to publish and transparently communicate the detailed procedure for the initiation of new connection, including, inter alia, required documents, timing, methodologies, responsibilities, etc. This information shall also address the relevant grid access issues, which will be dealt with in more detail in the future Framework Guidelines for grid access."

Operational Notification Procedure

Type A: (800W-0.1MW)
Installation document

Type B/C 0.1-10MW [or 110kV]
Power Generating Module Doc
Must provide same info as type D
Can be single stage process

Type D 10MW+ [or 110kV]
Three stage process to right



… to be issued by the Relevant Network Operator

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Operational Notifications



EON

- Grid connection facilities are established
- Operational procedures and responsibilities are agreed

ION

- Data and study review process completed:
  - Itemized compliance statement by the Generators Owner
  - Technical data submitted
  - Type certificates provided where admissible for compliance
  - Simulation models and studies on performance submitted
  - Compliance tests specified
- Duration limited to 24 months maximum
- Achievement of full compliance to be expected in this period

Operational Notifications



FON

- Full compliance achieved
- In case of incompatibility with requirements: derogation granted and compliance with the provisions of the derogation achieved

LON

- Temporary modifications or loss of capabilities with relevance to compliance with the network code
- Equipment failure leading to non-compliance with the network code
- Responsibilities and timescales for resolution (max. 12 months)
- Suspension of FON
- Prolongation by means of derogation

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Are derogations possible and how are they approved?

ACER Framework Guideline on Electricity Grid Connection

"The network code(s) developed according to these Framework Guidelines shall describe the process and criteria for applying for derogation. This process is applicable to pre-existing (and in exceptional cases new) significant grid users."

"The derogation process shall be transparent, non-discriminatory, non-biased, well documented and based on the cost-benefit analysis performed by the TSO."

"The network code(s) may provide that derogation from all or some of the minimum standards and requirements may be granted to classes of pre-existing (and, in exceptional cases, new) significant grid users, non-discriminatorily, without the cost-benefit analysis being performed, if the TSO submits to the NRA a reasoned request and the exemption from the cost-benefit analysis is authorised by the NRA."

Procedure for derogations



- Application to the Relevant Network Operator
- Assessment of the request and submission to the NRA
- Decision by the NRA
- Assessment of the decision by ACER and recommendations to the NRA
- Register of derogations maintained by the NRA

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Existing Grid Code Requirements



Requirements in Title 2 of RfG

- Many type D requirements in line with existing Grid
- Most new requirements already being considered in DS3
- No automatic retrospective application to existing generators

Compliance testing

- Test requirements set out in code
- Alternatives can be agreed with Relevant Network Operator (DSO/TSO)
- EirGrid opinion consistent with existing tests

Operational Notification Procedure

- EirGrid opinion that 3 stage process in line with existing process
- Flexibility in type B, and C allows consistency also

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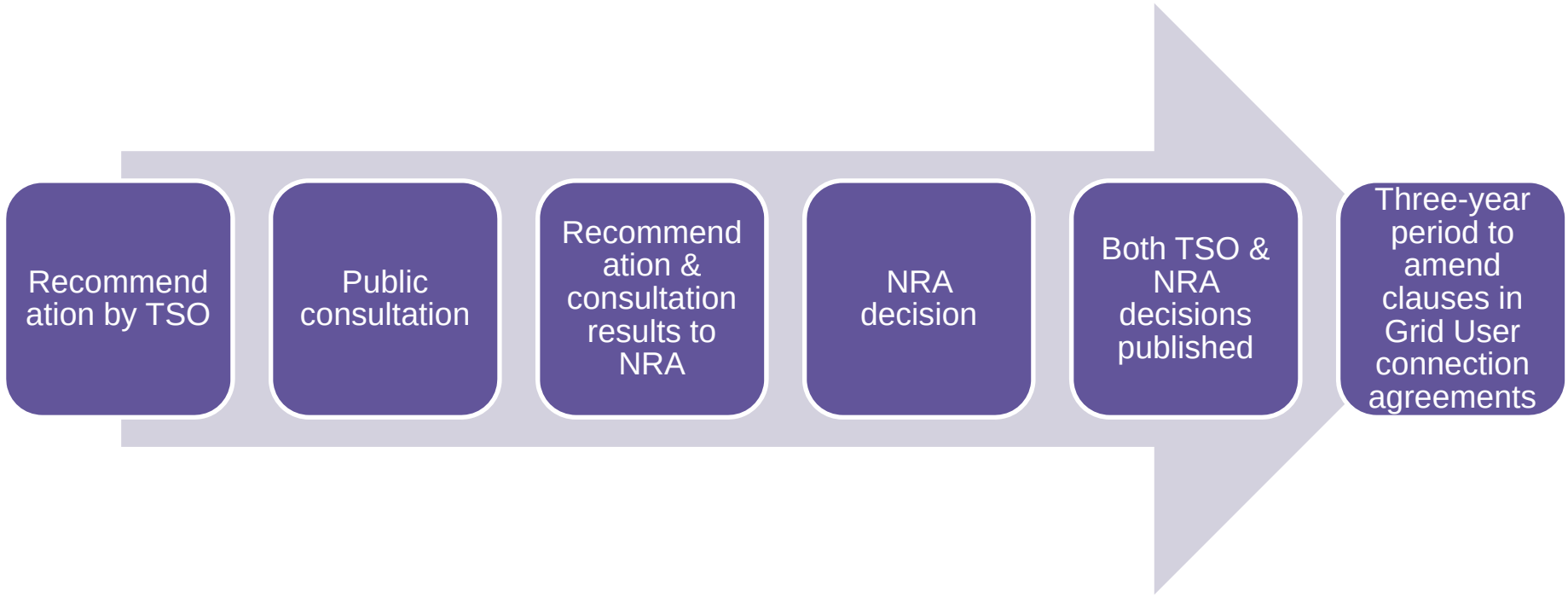
Retroactive application

Modernisation/replacement of existing generators move to new standards otherwise...

If TSO considers necessary and CBA justifies retroactive application for a user or a class of users





Thanks for your attention

Any questions



What is defined as modernisation/replacement?

RfG Codes states for Type C and D (5MW upwards):

"With regard to changes to, modernization of or replacement of equipment of Power Generating Modules, any Power Generating Facility Owner intending to change plant and equipment of the Power Generating Module that may have an impact on the grid connection and on the interaction, such as turbines, Alternators, converters, high-voltage equipment, protection and control systems (hardware and software), shall notify in advance (in accordance with agreed or decided national timescales) the Relevant Network Operator... and shall ... agree on these requirements before the proposals are implemented with the Relevant Network Operator in coordination with the Relevant TSO.

"The Relevant Network Operator shall have the right to request that the Power Generating Facility Owner carries out compliance tests and simulations ... after any failure, modification or replacement of any equipment that may have impact on the Power Generating Module's compliance with the requirements under this Network Code."