EUTurbines

# Connection Network Code
# Feedback from Industry

Brussels
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# Agenda

As operation and connection with RfG have now started in Europe, EUTurbines has collected multiple examples of “what could be improved” for this NC and beyond.

This presentation highlights 5 of the mains concerns:

1. Alignment of NCs and Standards
2. Exhaustive requirements: prevent national decisions to infringe NCs
3. Non-exhaustive requirement: harmonise and justify
4. Transparent implementation at national level
5. Efficient implementation at national level (e.g. compliance).

# 1. Alignment of NCs and Standards

- NC RfG clearly states that “established technical standard should be taken into consideration”.
- NC requirements are still set without formal and thorough consultation with product standards (EN, ISO, IEC, etc).
- Misalignments between well-thought standards and EU Regulation lead to increase cost and complexity.
- Standards and NC would mutually benefit from collaboration to drive the cost of electricity down.

**Recommendations:**

- Improve participation in mutual cooperation/support structures between CENELEC and ENTSO-E, especially of National Representatives of SOs.
- Review national requirements, aiming at harmonisation with standardisation, in view of a revision of the present implementation of the regulation.
- Ensure that studies are not over simplified and respect technology specifies.
- Technical Committees shall be involved in the definition of new requirements (EN, ISO, IEC, etc).

# 2. NC exhaustive requirements implemented exceeding defined values

- In some countries implemented exhaustive requirements with values exceeding the ones set NC RfG exhaustive requirements:
  - Ireland (60 min at 52 Hz)
  - Norway (20 s at 45 Hz, 30 min 53 Hz, 10 s at 60 Hz)
- Obligation to follow the derogation procedure, presenting a justification, national consultation and cost-benefit analysis; information shall centralised at EU level.

**Recommendations:**

- National decisions must comply with NC. NER must signal a deviation from the requirements to SO that have to request a derogation.
- This derogation shall be recorded at EU level (ACER?). This shall be publicly communicated at European level and stakeholders are requested to participate to the process

# 2. NC exhaustive requirements: Example Ireland

- IRELAND

Eirgrid Grid Code rev 7

| | |
|---|---|
| CC.7.3.1.1 | Each **Generation Unit,** shall, as a minimum, have the following capabilities: |
| | (a) operate continuously at normal rated output at **Transmission System Frequencies** in the range 49.5Hz to 50.5Hz; |
| | (b) remain synchronised to the **Transmission System** at **Transmission System Frequencies** within the range 47.5Hz to 52.0Hz for a duration of 60 minutes; |

- NC RFG (EU) 2016/631

< Ireland has a dedicated Chapter on frequencies in The RfG

< Derogation process

Recommended during implementation process

| | | |
|---|---|---|
| Ireland and Northern Ireland | 47,5 Hz-48,5 Hz | 90 minutes |
| | 48,5 Hz-49,0 Hz | To be specified by each TSO, but not less than 90 minutes |
| | 49,0 Hz-51,0 Hz | Unlimited |
| | 51,0 Hz-51,5 Hz | 90 minutes |

# 2. NC exhaustive requirements: Example Norway (requirements submitted to NVE for approval)

- NORWAY

Statnetts forslag til praktisk gjennomføring av EUs forordning for tilknytning av produksjon (NC-RfG) – 20.12.2017

| Frekvensområde | Varighet |
|---|---|
| 45,0 Hz – 47,5 Hz | 20 sekunder |
| 47,5 Hz – 49,0 Hz | 30 minutter |
| 49,0 Hz – 51,0 Hz | Kontinuerlig |
| 51,0 Hz – 51,5,0 Hz | 30 minutter |
| 51,0 Hz – 53,0 Hz | 30 minutter |
| 53,0 Hz – 57,0 Hz | 20 sekunder |
| 57,0 Hz – 60,0 Hz | 10 sekunder |

Tabell A2: Minimum tidsperioder hvor produksjonsanlegg skal være i drift for ulike avvik fra nominell frekvens.

- NC RFG (EU) 2016/631

< Norway is part of the Baltic

< Recommended RfG value or derogation process

| | | |
|---|---|---|
| Baltic | 47,5 Hz-48,5 Hz | To be specified by each TSO, but not less than 30 minutes |
| | 48,5 Hz-49,0 Hz | To be specified by each TSO, but not less than the period for 47,5 Hz-48,5 Hz |
| | 49,0 Hz-51,0 Hz | Unlimited |
| | 51,0 Hz-51,5 Hz | To be specified by each TSO, but not less than 30 minutes |

< it is not cost free for the industry and manufacturers!

# 2. NC exhaustive requirements: Recommendations and Actions

- Exhaustive requirements are not subject to public consultation. Associated values (and eventual deviation) are nowhere tracked: derogation process shall be set-up for transparency reason
- EUT recommend ACER to have Member States notifying any additions or deviations from the CNC
- Deviation (or derogation process) can be indicated in the monitoring file
- Deviations should be permitted following a proper derogation process that shall include:

< Technical justification

< CBA

< participation of stakeholder

| | Non-Exhaustive Requirement | | FREQUENCY RANGES | | | |
|---|---|---|---|---|---|---|
| | Comment | *Proposal of requirements of general applications* | | time period for operation in the frequency ranges | Continental Europe 47.5 - 48.5 Hz and 48.5 - 49 | Nordic:45 - 49 Hz |
| IE | **PROPOSAL** | | | 48.5 Hz – 49.0 Hz 90 minutes | | |
| NO | **PROPOSAL** | | | 30 min | | |
| APPROVAL | | *motivation why the* | | | | |

# 3. Non-exhaustive requirements: harmonise and justify

- Manufacturers currently are required to cover simultaneously:
  - 68 non-exhaustive requirements
  - 28 Member States own processes (technical committee, meetings and schedule) and documentation that requires reviewing.
- IGD, Q&A, Workshop, Expert groups have reached their efficiency limit

**Recommendations:**

- Workshops: Ensure SOs participation, introducing a quorum (a minimum nr of participation and ensure that all MS are present).
- Expert groups: Reinforce role of EG and dissemination of results as basis of necessary discussions.
- Consider that the requirements in the regulation are subject to review within the next 2-3 years. It is necessary to identify the entity responsible for the review process.

# 4. Transparent implementation at national level

- What shall all strive for: single point of access (ENTSO-E website) with free and clear access to National rules and process description.
- CNC monitoring file improved, but still insufficient.
  - Industry survey revealed: No improvement from August
  - Contact links don't work. If correct, often delayed or no reply.
- Several infrastructure applications done in the last months without being able to understand "what are the grid requirements in this country?"

**Recommendations:**

- Accountability: National grid operators to respond to EU integrated market requirements.
- Audit and structure national grid requirement portals, ensuring accessibility for all stakeholders
- National Authorities shall involve at least stakeholders participating to GC ESC.

# 3. Implementation process – Survey

| Country | Request for info send [Monitoring file was still upd... | Any reply or available data | Monitoring Update | Info and links on Monitoring File [29.August.2013] | Link to detailed documentation in monitoring file | EN |
|---|---|---|---|---|---|---|
| Albania | NO CONTACT | | NO UPDATE | Link to 4 page in local language | NO | NO |
| Austria | 15./July.2013 | | NO UPDATE | Link does not point directly to rules, very difficult to navigate, link shall be copied and separated to make it work. | no update | NO |
| Belgium | INFO AVAILABLE | | NO UPDATE | YES | Partly [info not approved, links not provided] | YES |
| Bosnia and Herzegovina | 15./July.2013 | | DA | NO | NO | NO |
| Bulgaria | 15./July.2013 | | NO UPDATE | NO | NO | NO |
| Croatia (HR) | 15./July.2013 | 25./July.2013 Answered | EUT replies as information provided | NO | NO | NO |
| Cyprus | NO CONTACT | | NO UPDATE | NO | NO | NO |
| Czech Republic | 15./July.2013 | | NO UPDATE | Links to generic information Downloaded info in the english webpage not working | NO [tried only from the english webpage; download does not work] | YES, but not working |
| Denmark | 15./July.2013 | 15.August.2013 | UPDATED | NO | NO | NO |
| Estonia (EE) | NO CONTACT | | NO UPDATE | NO | NO | NO |
| Finland | 15./July.2013 | | NO UPDATE | YES | YES - ONLY in Finnish [to be recommended that all info are general] | NO |
| France | INFO AVAILABLE | | NO UPDATE | YES | YES [seems to be the final version] | NO |
| Germany | INFO AVAILABLE | | NO UPDATE | YES | YES - Links to VDE | Partly |
| Greece | 15./July.2013 | | NO UPDATE | YES | Partly: ONLY in native language [english webpage provide an error], only threshold defined Parameters not defined | NO |
| Hungary | 15./July.2013 | 27. August.2013 | NO UPDATE | YES | YES - link to word document with links to relevant documentation. Some data are project specific [to be provided by local SO] | YES |
| Ireland | NO CONTACT | | NO UPDATE | | | |
| Ireland | INFO AVAILABLE | | NO UPDATE | YES | Partly - CRU decision with reference document. No Detailed Grid Code available | YES |
| Italy | INFO AVAILABLE | | NO UPDATE | YES | Partly - ONLY in Italian Documents from the Energy Regulator Authority. Recommended to add links to CEI old and TERNA Grid Code | NO |
| Latvia | 15./July.2013 | | NO UPDATE | NO | NO | NO |
| Lithuania | 15./July.2013 | | UPDATED | YES | YES - ONLY in Local language | NO |
| Luxembourg | 15./July.2013 [Creos] | | NO UPDATE | YES | YES - Many references to the German old | NO |
| Macedonia | 15./July.2013 | | UPDATED | NO | NO | NO |
| Montenegro | NO CONTACT | | UPDATED | | | |
| Netherlands | 15./July.2013 | | NO UPDATE | YES | YES - ONLY in local language [TBC all data are in] | NO |
| Norway | 15./July.2013 | | NO UPDATE | YES | YES - ONLY in Local Language. The document associated is quite long and difficult to be read/translated [note on Frequency Larger than RFG page 74] | NO |
| Poland | 15./July.2013 | | NO UPDATE | YES | YES - ONLY in local language | NO |
| Portugal | 15./July.2013 | | UPDATED | NO | NO | NO |
| Romania | 15./July.2013 | 25./July.2013 | NO UPDATE EUT replies as information provided | YES | YES - ONLY in local language, links to three different pdf | NO |
| Serbia | 15./July.2013 | | NO UPDATE | NO | NO | NO |
| Slovakia | 15./July.2013 | | NO UPDATE | YES | YES - ONLY Local language and document referring to non-mandatory, non mandatory requirements | NO |
| Slovenia | 15./July.2013 | | NO UPDATE | YES | YES - ONLY Local language and document referring to non-mandatory, non mandatory requirements | NO |
| Spain | INFO AVAILABLE | | NO UPDATE | NO | Wrong link to Finnish pdf document indicated [probably by mistake] | NO |
| Sweden | 27. November. 2013 | | Reminder sent | YES | YES - ONLY in local language. 12 pages documents regarding the requirements | No |
| Switzerland | INFO AVAILABLE | | NO UPDATE | NO | NO | NO |
| Great Britain/United Kingdom | INFO AVAILABLE | | UPDATED | YES | Link to 3 different pdf document related to RfG and DCC. No direct link to Grid Code. To get there one has to browse the Grid Code page and get to the final docu [Grid Code Last revision dated 1st of August 2013] | YES |

Recommendation:

- ETNSO –E reviews progress at next RfG

# 5. Efficient implementation at national level

| The (very) important list: | Why: |
|---|---|
| ❑ English language (copy) | • Guarantee access for any EU stakeholder |
| ❑ Free access to Rules | • Compliance must not be a question of costs |
| ❑ Coherent structure with NCs (RfG and beyond) | • Avoid mis-understanding and confusion. |
| ❑ Compliance Testing | • Need clear descriptions on compliance tests, with reference to the applicable rules and criteria |
| ❑ Certification | • Need to clearly state whether and under which conditions a certification process is foreseen – at plant and/or at unit level and based on which requirements. |

**Recommendation:** Apply those 5 points as key performance indicators of efficiency and effectiveness of National Level Implementation. Review progress at next GC ESC.

# Conclusions

- **Precondition:** It is essential to keep in mind that we are only at the beginning. This is the first review of the RfG requirements, and this process needs the full attention of all stakeholders involved.
- **Core Topics**: The 5 items as outlined in this presentation are critical for appropriate definition and transposition of NCs in the design operation of the future of the EU electric power system.
- **Core Actions:** Suggestion to proceed and convert the “recommendations” boxes into “action” and to follow on the progress on those 5 items at the next GC-ESC.
- **Monitoring:** The dedicated entities need to take over the full responsibility of the implementation monitoring.

# 4. Contact


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