

Amendments to ENTSO-E Network Code for Requirements for Grid Connection Applicable to all Generators following ACER's Opinion

Significance Test for Type A Power Generating Modules

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ACER's view on significance of small-scale generation technology

ACER Opinion positively acknowledges

- Technology-neutral approach / importance of uniform application
- Differentiation depending on size

ACER Opinion questions for type A PGMs

- Link between material penetration of small units and aggregated impact
- Potential barriers for new small-scale technologies supporting energy/climate targets

ACER Opinion suggests for type A PGMs

- Enhancement of criteria in the significance test, based on aggregated impact;
- Enhancement of the derogation process, open to equipment manufacturers for consideration at a coordinated pan-European level;
- Or other approaches

Conclusions from stakeholder interaction

- Small-scale generation technologies of Type A have just been successfully developed and entered the market, e. g. micro CHP unit based on linear Stirling engines technologies, and cannot meet the respective RfG code requirements
- Small-scale niche generation technologies may never exceed a significance threshold individually
- RfG code may introduce market entry barriers for commercially available generation technologies “at infancy”
- Acknowledgement of
 - Relevance of accumulated installed capacity of Power Generating Modules of Type A for determining significance with regard to **system security and performance**
 - Need for a **temporary measure**: Development of technical capabilities of generation technologies which are not yet commercially available, shall ensure full compliance with the respective RfG code provisions

Overall Conclusions

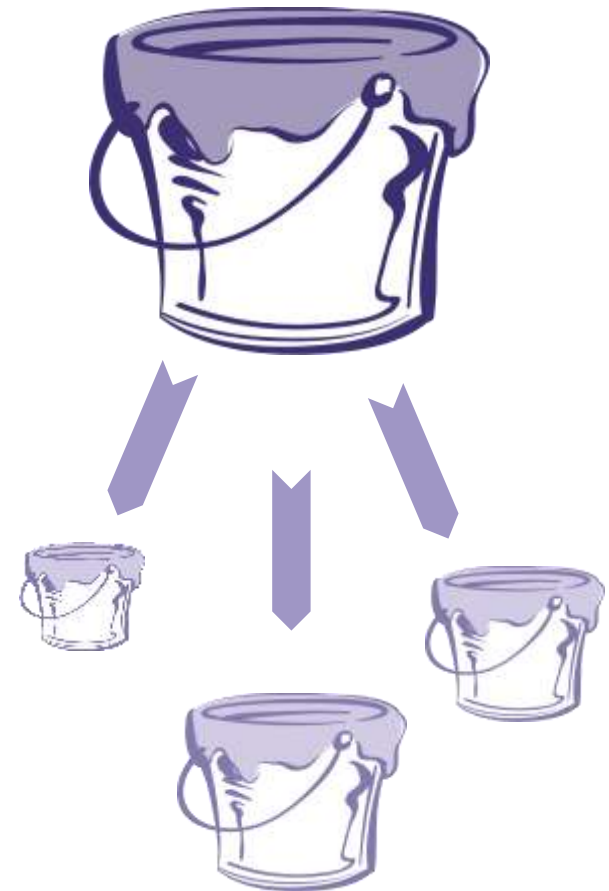
- Assessment of ACER's concerns and stakeholders' arguments reveals that a solution is needed for Type A generation technologies, which are
 - **Commercially viable** technologies; i.e. a technology undergoing technical implementation or beyond market launch
 - **Emerging** technologies “at infancy”; and
 - at a **low level of accumulated market penetration** now and prospected
- Manufacturers concerns in order to safeguard return in recent investments on generation technologies, which do not comply with RfG requirements, because they were not effective at the time of research and development of these technologies, are of **temporary nature**

➔ Network Code amendment (Title 6):

TRANSITIONAL ARRANGEMENTS FOR EMERGING TECHNOLOGIES

Transitional arrangements for emerging technologies (I)

- Admissible volume of non-compliant emerging technologies (significance threshold) to be defined once
- TSOs shall determine within 3 months after entry into force of the RfG code, while respecting Article 4(3)
 - a **maximum level of cumulative Maximum Capacity of Power Generating Modules for emerging technologies** per Synchronous Area (the “bucket”); and
 - its allocation on a per Member State basis.
- The “bucket” represents **the total admissible additional volume of non-compliant Type A generators per Synchronous area** and is shared by Member states by applying the same rules as for allocation of frequency containment reserves within a Synchronous Area



Transitional arrangements for emerging technologies (II)

- **Criteria for eligibility** for emerging technologies
 - it is of Type A;
 - it is a commercially viable Power Generating Module technology; and
 - the accumulated sales of the Power Generating Module technology within a Synchronous Area at the date of application for classification as an emerging technology do not exceed 25% of the maximum level of cumulative Maximum Capacity per Synchronous Area
- Manufacturers can **apply** on a per Member State basis to the National Regulatory Authority within 6 months after entry into force of the RfG code, while demonstrating compliance with the eligibility criteria



Transitional arrangements for emerging technologies (III)

- National Regulatory Authorities in a Synchronous Area shall **approve eligibility in a coordinated manner** within 12 months after entry into force of the RfG code taking into account ACER's opinion
- Manufacturers of Power Generating Modules, qualified as emerging technologies, shall **report monthly sales** to the relevant National Regulatory Authorities
- Qualification per Member State shall be **revoked**, if total sales of eligible emerging technologies exceed the allocated volumes of admissible installed capacity
- After revocation of the approval a Power Generating module, which had been considered as an emerging technologies, will be considered as a **Existing Power generating Module**



Timeline for applicability of NC RfG requirements

t=0

- Entry into force of the RfG Network Code

t+3 months

- Determination of cumulative Maximum Capacity for emerging technologies and national allocation

t+6 months

- Application for consideration as emerging technologies

t+12 months

- NRA approval of emerging technologies with ACER opinion



t+24 months

- New Power Generating Module, if contract of purchase signed after this date

t+30 months

- New Power Generating Module, if no evidence of contract of purchase signed before t+24 months is provided

t+36 months

- Applicability of the RfG requirements

Amending the RfG code by TRANSITIONAL ARRANGEMENTS FOR EMERGING TECHNOLOGIES meets

- ACER's concerns
 - An additional threshold for small-scale generators is introduced to reflect better the rather aggregated than individual impact
- The wider industry's expectations
 - Market entry barriers for emerging technologies “at infancy” are mitigated. Recent investments (R&D, production lines) could be recovered.
- Network Operators responsibilities
 - Impact of accumulated installed capacity of Power Generating Modules of Type A on system security and performance is adequately taken into account



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