



**EUTurbines Input:  
ACER Public Workshop on  
amendments to the grid connection network codes**

Online  
25 October 2022



## Main areas of concern for EUTurbines

---

1. Requirements for pump-storage hydro PGMs
- 2. Determination of significance of PGMs**
- 3. Requirements for mixed customer sites with generation, demand and storage**
4. Requirements for type A PGMs
- 5. Significant modernisation**
- 6. Technical requirements for storage**
7. Electromobility
- 8. Simulation models and compliance monitoring**
- 9. Advanced capabilities for grids with high share of PPMs**
10. Requirements for weather hazards resilience
11. Technical requirements for active customers / energy communities
12. Requirements for units providing demand response services



## Determination of significance of PGMs

---

- Thresholds should be more similar as the type definition includes the requirements for the generating unit. This requires a definition of the requirements associated to the types (and eventually to the technology).
- Type D requirements based on voltage threshold, shall be derogated based on generating unit capacity (or more in general removed).



# Requirements for mixed customer sites & Technical requirements for storage



- Mixed customer sites:
  - Introduce a better definition of the requirements for PGMs which do not export power or that have a limited exchange of power with the grid.
  - Clarify the reference requirements (capacity) in the RfG.
  
- In Mixed Customer Sites storage solutions can support generating units fulfilling requirements at the connection point. In these cases the storage solutions should be regarded as part of the generating unit.
  
- Energy Storage:
  - Use the text proposed by the Expert Group “Storage”
  - The definition should not be limited to electricity, but extended to energy storage in general (eg P-to-X-to-P, alternative fuels, etc).



## Significant modernisation

---

- 🕒 Use text proposed by the Expert Group “Criteria for Significant Modernisation” as starting point.
- 🕒 Provide a clear definition when a new certification will be necessary, taking into account that for already existing generation units an economically viable solution at plant level is formulated. Modifications of the “old” generating unit and CBA when renewing existing units may not imperil the project feasibility.
- 🕒 Estimate costs associated with the investment and life-time operation including modernisation.
- 🕒 Normal maintenance activities should not trigger new requirements
- 🕒 Limited modifications of generating unit components should trigger new requirements only for the specific part affected



## Simulation models and compliance monitoring

---

- EUTurbines had already made proposals, including text amendment proposals. Use these plus the expected recommendation from EG HCF.
- Unnecessary and unsustainable costs, eg for the development and validation on multiple software platforms, have to be avoided. Define a minimum level of harmonisation or foster the integration of models developed on different platforms.
- Protect the know-how and proprietary information of manufacturer-specific models (eg encrypting, black box, NDA, use of model library.)



## Advanced capabilities for grids with high share of PPMs

---

- 🔴 New requirements shall recognise the technical evolution. Limitations of the capabilities of gas turbines and engines must be taken into account.
- 🔴 A clear definition of stability criteria is necessary.
- 🔴 Foresee only basic requirements - detailed requirements should be developed by technical committees.
- 🔴 Advanced capabilities shall not trigger additional requirements for synchronous generators.



## Single Point as Source of Information & Requirement Harmonization

---



- 🔗 Ensure the availability of all relevant information in one place - accessibility to requirements and compliance information is considered essential.
- 🔗 EUTurbines made a proposal based on the results of a series of public workshops. (“Procedural Improvement CNC Amendment Proposal” available as Annex to GC ESC meetings on the 07/12/2021)





## Improvements to the applicable rules and procedures & Second Language for relevant documents

---

- Use simulation models for extended compliance verification
- Generate a units family definition
- Possibility to use tests already carried out on similar units to prove compliance (and skip repeating costly tests)
- Have a second language - language can be considered an obstacle in the understanding of requirements or compliance process.
- EUTurbines made a proposal based on the results of a series of public workshops (“Procedural Improvement CNC Amendment Proposal” available as Annex to GC ESC meetings on the 07/12/2021)



## Improving and empowering monitoring

---

- 🕒 Exhaustive requirements are considered a minimum common ground and should be introduced on national level without deviations
- 🕒 Should the system operator plan to define additional requirements, it should be mandatory to use a defined derogation process
- 🕒 Several monitoring reports indicated that even exhaustive requirements are not implemented as they are at national level. Due to the many exceptions, RfG 2.0 shall be improved to tackle such infringement, for cases without approved derogation request.
- 🕒 EUTurbines made a proposal based on the results of a series of public workshops (“Procedural Improvement CNC Amendment Proposal” available as Annex to GC ESC meetings on the 07/12/2021)



# ROCOF



- 
- The understanding is that 1 Hz/s on a rolling window of 500ms is a limit value for the system safety.
  - ROCOF is directly linked to inertia definition and therefore the above value is considered a target value for all stakeholders.