



Grid Connection ESC EUTurbines comments

Ljubljana 8 September 2017



- EUTurbines supports the initiatives promoted on specific topics (CBA, frequency stability parameters workshops, etc.)
- EUTurbines expects that cooperation will continue and be further improved
- EUTurbines would like to raise awareness of a number of important issues that need careful consideration and discussion



RoCoF

- Present studies seem still only aimed at defining requirements for generators
- From the generator side, high RoCoFs need to be avoided due to the risk of consequent and cascade trips of generators/prime movers
- EUTurbines recommends that additional studies are conducted, focused on identifying alternative measures to prevent high RoCoFs



RoCoF – How to limit RoCoF

Examples of methodologies that would avoid high RoCoF:

- use and variation of synthetic inertia to improve response time/gain/duration
- load shedding evolution
- more detailed (regional) models that permit would allow to study the effect with a better granularity
- alternative grid operability (development of existing defense plan/ intended island migration)
- differentiate strategies and requirements for frequency increase and frequency decrease: consider ponderate generation disconnection during high RoCoF (or frequency transient) to achive fast response reaction

High RoCoF requirements cannot be considered consolidated based on present studies/documentation



LFSM-O

 EUTurbines recommends that the implementation of requirements takes in consideration technology constraints, including limitations when generation is embedded in an industrial plant (cogeneration, industrial processes, critical processes)



Power Reduction at Falling Frequency

- EUTurbines reiterates the capabilities of their generating units and recommends that generating units' technical capabilities shall be considered by system operators when defining the power reduction capabilities versus falling frequencies.
- EUTurbines recommends the interpretation of Art 13(5) where figure
 2 (Maximum power capability reduction with falling frequency) can
 be overidden by technical capabilities



Power Reduction at Falling Frequency

- Gas Turbines, due to their design, have their power output influenced by different external factors.
- When the frequency drops, the behaviour, due to their intrinsic properties, can be different than described in Art 13 figure 2 (Maximum power capability reduction with falling frequency)





How to Contribute to NC requirements evolution

- Whereas NC requirements need to be revised, EUTurbines calls for an open discussion and the setting-up of an expert team to contribute to the text drafting (not only asking stakeholders to provide comments at the end of the process)
- Ad hoc shared methodology should be set-up even whereas the team will be able to prepare a proposal and recommendation.

This will help avoiding unnecessary polarisation in the drafting process



- EUTurbines gives great value to the IGDs and the work done to develop these documents, describing how to interpret the requirements
- EUTurbines regrets the difficulty to find the latest version of these documents, which often can be confusing and ultimately defeats the purpose of the IGDs.
- The link to the IGDs should be found on each NC dedicated page. Today, different links lead to different IGD versions:
 - the link in the RfG NC leads to the ones released in 2013 here
 - the link from the implementation page leads again to the ones released in 2013 here
 - The ones released in 2016 can be found under "News" <u>here</u>
 - Updated IGDs are found as part of public consultations (e.g. of April 2017 <u>here</u>)
 - "Connection Codes Active library" not easy to find here

IGDs location and document search



- Difficult access The page is not linked to any of the others
- No background information about the IGDs (only possibility is to download)

users.

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- → EUTurbines calls for a dedicated website, where all related activities can be monitored and where the IGDs are clearly displayed (old versions should be adequately archived), and which is easy to find.
- NC website shall include a clear link to IGDs that leads to the <u>actual</u> material prepared and informs whether any activities are ongoing