3rd Stakeholder Workshop on Dynamic Stability Assessment

Date: 15 May 2019

Time 10h00-16h00

Place: ENTSO-E, Brussels, Belgium | Webcast

Notes & Questions

No	Subject	Questions
1.	**Welcome, introduction and follow-up** - Presentation of participants - Overview of workshop program - Clarification of expectations for the WS - Follow-up on pending issues from last Stakeholder WS on DSA & MI - Regional response on SO GL art 39(3) from RG CE, RG Nordic and RG GB IE/NI	All participants were asked to register online prior to the workshop and the workshop agenda was shared prior to the meeting here. Participants can join the meeting physically or via webcast. More than 30 participants in today's meeting. Knud Johansen as Convenor opens the session and welcomes all participants. A round-the-table is done to introduce all physical and remote participants briefly and participation is recorded in the list of participants. There is no representative from GB in today's workshop. The agenda of today's meeting is confirmed. ***Questions raised by the participants:*** • Eric Dekinderen (VGB): What are the limits of a stable system and what are the major threats (e.g. system split)? Answer: The questions will be addressed during the presentation of RG CE. • Marios Zarifakis (VGB): Besides inertia, short-circuit power and distance to synchronous inertia should be considered in regards of dynamic stability. Answer: short-circuit power is covered by other articles in the SO GL. **Clarification of expectations for the WS** The Convenor clarifies the expectations for today's workshop and follows-up on outcomes from the last stakeholder workshops based on the information provided in the presentation 190515_DSA_3rd Stakeholder Workshop (workshop slides). A discussion started on the inertia minimum requirements presented in the 2nd stakeholder workshop on 10 December 2018 ***Questions raised by the participants:*** • Marios Zarifakis (VGB): The criterion of 2 Hz/s is not sufficiently defined.

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		• Jakub Fijalkowski (EC): Inertia might be worth mentioning in the TYNDP as crucial to system stability. Answer: Mentioning inertia in the TYNDP is endorsed. **Follow-up on pending issues from last Stakeholder WS on DSA & MI** In reply to the 2nd stakeholder workshop on 10 December 2018, the Convenor presents draft replies from the questions raised by stakeholders. The presented draft Questions & Answers on the principles for DSA reference scenarios in RG CE triggered further discussions. It is acknowledged that the scope of the principles for DSA reference scenarios in RG CE is not concluding in all details and that the system size needs to be considered, carrying the discussion. **Regional response on Art. 39(3) SO GL from RG IE/NI (GB not present)** Marta Val Escudero (Eirgrid) notes that the current operational practice fulfils the requirements of Art. 39(3) SO GL. The current practices and next steps to meet 2020 target of 40% RES-E are outlined in the respective slides the consolidated workshop slides (in the IE-NI part). ***Questions raised by the participants:*** • Marios Zarifakis (VGB): Power plant operators might arbitrage between operational metrics and ancillary services based on economic reasons. • Eric Dekinderen (VGB): Does synthetic inertia exist for wind turbines in Ireland? Answer: Yes, the requirements are non-discriminating and hence technology open. • Luca Guenzi (EUTurbine): In the operational metrics presented, the frequency security limits are not shown. What is the reason? Answer: So far, no changes in frequency security limits are foreseen. Currently a study is performed considering high frequency deviations. • Gunnar Kaestle (B.KWK): How to compare measured inertia - in energy units or time constants? Answer: The approach in Ireland has historically grown. • Luca Guenzi (EUTurbine): Is the mentioned inertia value an average value? Answer: The inertia values are all-island values. • Luca Guenzi (EUTurbine): What are the rational for the mentioned requirements? Answer: RG IE/NI will check this and get back to you. **Regional response on Art. 39(3) SO GL from RG Nordic** Harry Kuisti (Fingrid) presented the overall conclusion on the need for defining a minimum inertia for RG Nordic according to SO GL Article 39(3). Based on the continuous monitoring of the actual inertia and the various analysis done for RG Nordic states that for the current system a definition of a minimum inertia is not needed.

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2.	**Coffee & Tea break**	
3.	**Principles for DSA coordination in RG CE acc. To SO GL art 38(2)** Coordination of DSA in the region. System models for DSA in the region. **Question and answer session on DSA coordination - RG CE**	**Enclosed document:** Respective CE part of the consolidated workshop slides. **Regional response on Art. 39(3) SO GL from RG CE** Hans Abildgaard presented the assessment of the need for defining a minimum inertia in the RG CE synchronous area. For normal and alert operation, the assessments illustrate that for the current system no need has been identified for defining a minimum inertia in RG CE with the current generation and demand portfolio. ***Questions raised by the participants:*** • Eric Dekinderen (VGB): Where are the shown reports? Answer: You will find the reports on the ENSTO-E website via the links in the RG CE presentation. **Regional response on Art. 38(2) SO GL from RG CE** Hans Abildgaard (Energinet/SPG) explains, that the current dynamic model in RG CE offers the advantage of calculating many scenarios in a short period of time. The nodal model as backup is currently under development and requires parametrisation. In RG CE, each TSO develops an individual DSA concept for his control area and involves neighbouring TSOs if necessary. To avoid false conclusions system design settings are based on a single-bus model. ***Questions raised by the participants:*** • Carmelo Mosca (ENTSO-E): What are the fundamental differences between the current dynamic model and the nodal model? Answer: More generator models are included, the threshold for detailed information is lowered and the underlying scenarios are updated. The model is available on the ENTSO-E website. • Luca Guenzi (EUTurbine): What are the actions derived from the model calculations? Answer: The outcomes of the models and therefore the actions might differ.
4.	**Lunch**	
5.	**Principles for DSA coordination in RG Nordic acc to SO GL art 38(2)** Coordination of DSA in the region. System models for DSA in the region. **Question and answer session on DSA coordination - RG Nordic**	**Enclosed document:** Respective Nordic part of the consolidated workshop slides. Harri Kuisti (Fingrid) mentions that DSA is already a part of transmission capacity calculation and operational planning. A coordinated methodology will be gradually introduced and included in the Nordic System Operation Agreement. Off-line studies are already possible and, in the future, nearly real-time DSA becomes possible.

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		Questions raised by the participants: • Eric Dekinderen (VGB): Where are the shown reports (and maybe further) available? Answer: You find the reports on the ENSTO-E website. • Luca Guenzi (EUTurbine): Where does the statement "Over frequency is better than under frequency" come from? Answer: "Over frequency is better than under frequency" is a qualitative statement and not based on the simulation. • Deepak Ramasubramanian (EPRI): Do power plan operator need to validate the provided model? Answer: Some studies and tests are performed and show that quality models are very close to reality. System protection schemes also play a significant role. Models might be validated by TSOs. • Deepak Ramasubramanian (EPRI): How do you handle diverging models from different power plant operators? Answer: Each power plan operators applies industrial standards in modelling. Individual model might vary due to local characteristics. EPRI is invited to share their models via Ioannis Thomas Theologitis (Ioannis.Theologitis@entsoe.eu).
6.	**Principles for DSA coordination in RG GB/IE/NI acc to SO GL art 38(2)** System models for DSA in the regions. **Question and answer session on DSA coordination - RG GB / IE / NI**	**Enclosed documents:** Respective IE-NI part of the consolidated workshop slides. Marta Val Escudero (Eirgrid) explains that SONI (System Operator Northern Ireland), Eirgrid (System Operator Ireland) and semo (Market Operator All-Island) are part of the Eirgrid Group. All-Island Operational Metrics are monitored jointly in the Integrated Energy Management System. Static and Dynamic Security Assessment are performed on an All-Island basis. Wind Dynamic Security Assessment Tool (WSAT) performs dynamic stability assessments on an All-Island basis and therefore is compliant with Art. 38(2) SO GL requirements.
7.	**Coffee & Tea break**	
8.	**Question and answer session on DSA in general**	Any remaining questions also after today's discussions will be processed and addressed in coming stakeholder workshops or preferably via the European Stakeholder Committee. ***Questions raised by the participants:*** • Eric Dekinderen (VGB): How are risks occurring with synthetic inertia mitigated in IE/NI? Answer: Ancillary services have evolved, and corresponding requirements will be shared with you after the meeting.
9.	**Conclusions and wrap up of workshop**	Today's presentation will be shared in a consolidated way after the workshop. Convenor thanks all participants for the provided information and active engagement.