ENTSO-E High-Level Communication Plan on Stability Management in Power Electronics Dominated Systems (PEDS)

Version 2 | 19 April 2022

From: RDIC & PCG

**Detailed communication plan**

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| **Objective of the paper**: The Stability Management in Power Electronics Dominated Systems (PEDS) high level communication paper gives an overview of the scope of both well-known and new stability phenomena and their impact and needed actions based on the most recent work at ENTSO-E. On this basis, it is intended to communicate a common position among TSOs, create awareness among their stakeholders and communicate the way forward on a high level. An action plan is presented on how TSOs shall proceed in the field of research, development and innovation, including shorter-term actions to reduce risk and improve system resilience with regards to system instabilities. |
| **Key messages:**The power system is continuously developing and, as the pace of the energy transition picks up, challenges with the stability management in power electronics and hybrid AC/DC networks are becoming more apparent and urgent. In recent years this has led to a growth in already known stability phenomena due to the reduction of inertia, and the introduction of new stability phenomena. The latter are related to the effects of the fast-acting power electronics devices.* **The assessment and control of grid stability require consistent methods for analysis**, especially for new stability phenomena and processes for data exchange (e.g., CGMES-Format). In particular for system-wide stability challenges related to well-known, voltage, angle and frequency stability phenomena, a Pan-European assessment and control approach are needed. A European approach is a key to avoiding divergent national approaches that may jeopardise system operations and product development. An overall European approach is also essential to ensure a coordinated response to incidents with large impact.
* In order to keep up with the pace of the energy transition, **a fast and harmonised process is needed for the further development of network codes.** This is the basis for the deployment of new capabilities such as grid forming. Future connection requirements and developments in modelling and analysis techniques will allow to cope with new local stability phenomena related to control interactions and resonances.
* With high-RES integration and the growth of PE driven devices, **new technical capabilities and system services are changing the system and making it necessary to define new resilience requirements** (e.g., for system splits, wide-meshed offshore grids, sector coupling, etc.). System services contribute to maintaining system stability in daily operation and during incidents like disconnection of supply or system splits. Therefore, it is important to develop markets and regulations to make the most efficient resource with sufficient capabilities available.
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| **External Communication SPOC:** Håkon Borgen, Norela Constantinescu |
| **Content reference SPOC:** Knut Hornnes, Íris Baldursdóttir |
| **Target audience:** Based on the stakeholder analysis and actions presented in the PEDS Paper the target audience is: Policy makers, RD&I Institutions, Ancillary Service Market Operators, Generators, DSOs, Flexibility Service Providers, Cross-sectors, Manufacturers & Vendors. |
| **Quotes (from External Communication SPOC or other High-Level Representatives)** **that can be used in press releases/external communication:**”The number of power-electronically coupled devices in the energy system will increase significantly as Europe reaches the decarbonization targets. Stability management challenges in the power system are becoming more apparent and urgent. Significant RD&I efforts and stakeholder collaborations are needed to accelerate the uptake of new technologies for stability management. TSOs are willing to be the driving force to support a resilient grid, throughout the energy transition “, Håkon Borgen, Chair of RDIC |
| **Key graphs/visuals/master slide deck that can be used for external communication:** Yes, as planned for the shorter version of the paper, which is intended for publication. |

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| **Dissemination plan**  |
| **ACTIONS AND CHANNELS** | **Target Audience** |
|  | **ENTSO-E Members** | **Stakeholders** Ancillary Service Market Operators, Generators, DSOs, Flexibility Service Providers, Cross-sectors, Manufacturers & Vendors | **Institutions**,EC – focus on RD&I Institutions |
| * Publish the paper on ENTSO-E’s website.
* Inform about the paper publication in ENTSO-E’s newsletter.
* Share via social media channels (LinkedIn).
* Inform members via the Top Management Members Brief.
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| * Approach European Commission to present and exchange on the need for relevant funding schemes addressing stability management challenges.
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| * Present the paper at the InnoGrid 2022 conference, 29 June.
* Explore the possibility of a webinar on stability management for external stakeholders or in combination with another subject.
* Look for other suitable events to present the content and key messages of the paper.
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| * Present the stability management workstream and the paper content in ENTSO-E’s Independent Advisory Council.
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