

Expert group: Requirements for hydro pump-storage hydro power generation modules (EG PSH)

Chair: ENTSO-E, Ralph Pfeiffer

Vice-Chair: VGB, name tbc

Problem Statement

On 11 June 2018, the Grid Connection European Stakeholder Committee (GC ESC) has decided to establish an expert group on requirements for hydro pump-storage hydro modules. The creation of this EG was proposed by ENTSO-E to elaborate on connection network code (CNC) issues, which had been raised by stakeholders during the CNC implementation. The ENTSO-E proposal was based on a stakeholder survey to identify priority topics.

Target (objectives)

The objective of the EG PSH is to identify specific characteristics / constraints for this kind of power generating module for each operation mode (generation, pumping, synchronous compensation), which may have impact on the connection requirements as defined by Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (NC RfG).

Legislative background

NC RfG, Article 6(2) foresees that: “*Pump-storage power-generating modules shall fulfil all the relevant requirements in both generating and pumping operation mode. Synchronous compensation operation of pump-storage power-generating modules shall not be limited in time by the technical design of power-generating modules. Pump-storage variable speed power-generating modules shall fulfil the requirements applicable to synchronous power-generating modules as well as those set out in point (b) of Article 20(2), if they qualify as type B, C or D.*”;

Task description

- Discussions with stakeholders / responses received during consultations / stakeholder interventions at the GC ESC / in workshops have revealed that this provision is probably too generic and in its generality lead to requests for derogations or compliance issues. In particular, a better distinction of the applicability of the RfG requirements in the different operation modes (generating, pumping, synchronous compensation) and different types of pump storage facilities needs to be investigated;
- Challenges in complying with the NC RfG requirements shall be identified separately for each operation mode and, if applicable, technology-dependent (e.g. specific peculiarities of variable speed pumps);
- Clarifications shall be provided on technical capabilities of these power generating modules to be able to comply with operational requirements from SO GL and NC ER; and
- Improvements or mitigation of shortcomings concerning both the requirements and Power Generating Module (PGM) designs shall be proposed.

Deliverable

Report to the GC ESC on specific characteristics / constraints for these kinds of power generating module for each operation mode (generation, pumping, synchronous compensation) and the consequences on connection requirements.

Timing

6 months from 01 October 2018.

Team

The following nominations to participate in EG PSH have been received (name and association):

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|--------------------------|-------------|
| • Hans Abele | ENTSO-E |
| • Ralph Pfeiffer | ENTSO-E |
| • Ioannis Theologitis | ENTSO-E |
| • Jacek Aronowski | EASE |
| • Brittney Elzare | EASE |
| • Klaus Krueger | EASE |
| • Kelvin Sim | EASE |
| • Heinz Berger | VGB |
| • Eric Dekinderen | VGB |
| • Tassi Giannikpoulos | VGB |
| • Klaus Oberhauser | VGB |
| • Thomas Lescarret | EURELECTRIC |
| • Mahder Hoof | EURELECTRIC |
| • Fernando Perán Montero | EURELECTRIC |
| • Christina Flaskühler | BNetzA |

Estimated resource

- monthly webinars;
- 2 f2f meetings; and
- total commitment of 10 days per member.

Target audience

- GC ESC
- Relevant and/or interested stakeholders on the Connection Network Codes