Update on Expert Groups On-going and planned activities

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10th Grid Connection European Stakeholder Committee Meeting

11 June 2018, Brussels



Expert Groups

- High Penetration
- Compliance Monitoring



Who is the EG HP?

- Volunteers from 6 stakeholder groups:
 - TSOs: 2 Representatives
 - Wind Manufacturing Industry: 4 Representatives
 - HVDC Manufacturing Industry: 2 Representatives
 - PV Manufacturing Industry: 1 Representative
 - Power System Analysis tool providers/Consultants: 2 Representatives
 - Academia: 2 Representatives
- Its work is split in two stages
 - Stage 1 (early 2017): Fast Fault Current Injection (FFCI) Initial guidance for use at national level ahead of issue of national documents
 - Stage 2 (2017 2019): High Penetration (HP)

Longer term analysis and input into issues of extreme high penetration

Release draft report for consultation end of 2018.



What is EG HP doing?

- Released two IGDs
- Is currently working on a joint report on grid forming capabilities
 - Reflect a joint position
 - Maybe joint position not possible on each point
- No active research
- Work based on available research results
- Contribution for setting up requirements on grid forming capabilities in future grid/network codes



Way forward for Expert Group High Penetration

- Describe individual aspects of grid forming capability
- Describe design/sizing consequences for PE interfaces
- Describe possibilities and limits of grid forming with respect to size of storage and/or current headroom
- Give brief (!) cost indications related to individual or combinations of grid forming capabilities
- Set up benchmarks for evaluation of compliance including testing
- Publish draft for consultation
- Publish final results



Status of work and members' considerations

Status of work:

- Further work on individual grid forming capabilities
- First inputs expected before summer break
- Draft report for stakeholder consultation by end of 2018

Considerations from members:

- Timeline for introduction of new inverter control
- Need cases expected (TSO studies that lead to new requirements regarding control)
- Requirements as performance specification (allowing different implementations and solutions)
- Agreeing to proposed format of final report (joint document)

Inputs to be considered:

- Links to research projects e.g. Migrate and Osmose
- Projects with focus grid forming were already collected
- Liaison with EG hosted by National Grid



EG on compliance monitoring (EG CM)

- Total \approx 25 experts from 22 companies
- Stakeholder groups represented in EG: Turbine manufacturing industry, wind manufacturing industry, co-generation industry, engineering and certification bodies, utility companies, energy suppliers, DSO association, consultant companies, standardization entities,... (*list to be refined*)

Status of work:

- The joint team CENELEC/WG3 and ENTSO-E/EG CM met end of April
- Deliverable: EN50549-10 report
- Possible adaptations to IGD on Compliance Monitoring
- If required EG CM will have own meetings
- Experts from the EG CM were advised to join WG3 of CENELEC for easier access to the materials
- Future updates can be done jointly by CENELEC/ENTSO-E to the GC ESC



IGDs update



Status of IGDs since last GC ESC

- New IGDs to be published by **June 11**th:
 - Embedded HVDC systems frequency schemes in case of system split
 - Interactions between HVDC systems and other connections
 - HVDC systems default parameters
- Consultation period was finalized successfully with limited number of comments which were addressed by the relevant ENTSO-E experts.
- Material can be found here: <u>https://www.entsoe.eu/network_codes/cnc/cnc-igds/</u>
- The announcement of publication here: <u>https://www.entsoe.eu/network_codes/news/</u>





Overview



Overview plan for next months

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CNCs (RfG, DCC, HVDC)	2018	2019	Consultation period
All/relevant TSOs and ENTSO-E tasks	J F M A M J J A S O N D	J F M A M J J A S O N D	
RfG NC - Cordinate and monitor implementation activities in each country / use of Active Library (transposition)			
DCC and HVDC NC - Cordinate and monitor implementation activities in each country / use of Active Library			
(transposition)			
Prepare Implementation Guidance Documents on frequency related parameters			20/11/17 - 21/12/17
Prepare Implemntaiton Guidance Documents on Cost Benefit Analysis (CBA)			29/01/18 - 02/03/18
Prepare Implementation Guidance Documents on Embedded HVDC systems – frequency settings in case of system split			26/03/18 - 04/05/18
Prepare Implementation Guidance Documents on HVDC systems default parameters			26/03/18 - 04/05/18
Prepare Implementation Guidance Documents on Interaction between HVDC controllers and other connections			26/03/18 - 04/05/18
Expert Group on High Penetration	w		
Expert Group on Compliance Monitoring - in collaboration with CENELEC TC8X/WG3	w		
Engage with standardisation bodies i.e. CENELEC for consistency between the Codes and Standards			
Engage with stakeholders/ACER/EC though Expert Groups and European Stakeholder Committee (tentative	w w		
Monitoring of implementation (regulation compliance)			
Report/Data to ACER on implmentation on RfG and HVDC			
	ENTSO-E Drafting Activity	NRAs Approval pre	eparation
	Consultation	NRAs Approval pu	blication
	w Workshop		
	ENTSO-E Proposal submission	n / Deadline	

Consultation of the report from EG HP by end of 2018 is not included in the above plan

