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Network Code on HVDC Connections

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NC HVDC User Group Meeting
Brussels, 2014-03-10

Methodical Issues

- Definitions (Article 2)
 - Important basis, has been extended
 - Reuse and adapt existing terminology (eg. the International Electrotechnical Vocabulary at www.electropedia.org)
 - Dynamic cross reference to NCs not yet passed?
- Interface Point / Connection Point
- DC-connected Power Park Modules vs Synchronous Modules?
- Scope (Article 3)
 - HVDC Systems connecting Synchronous Areas
 - or Embedded HVDC Systems
 - Criterium: Energy Balance of Synchronous Area affected
 - Objective: Energy conditioning AC -> DC -> AC

General Issues

- Significance test
 - Classification by Voltage Level of the Connection Point
 - DC link with Connection Point at MV excluded?
- DC-connected Power Park Modules
 - Two corresponding AC/DC interfaces connecting two Syn. Areas
 - May merge e.g. to a North Sea Offshore Grid
 - Difference to Offshore Power Park Modules in RfG?
- Register of Derogation
 - Central database or distributed database with central query to improve transparency

Detailed Issues

■ Frequency Measurement

- ROCOF: average of the timespan of 1 second
- But also needed for other purposes (e.g. Frequency Response)
- DCC Art. 23 gives minimum requirements on accuracy
- Measuring delay (state of the art is 120-180 ms for 5-10 mHz accuracy)

■ Maximum Current / Maximum Capacity

- Current is the limiting factor of power electronics
- Should be taken into account more often
(eg. Priority to Active or Reactive Power Contribution in Art. 21)