swisselectric

ENTSO-E NC HVDC Connections
Preliminary comments of swisselectric

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Key comments on Preliminary Scope

- Harmonisation – Standards
- Impact on AC Systems
- Roles & transparency

Harmonisation - Standards

Consider current standards – in line with NC RfG, DCC and LFC&R

- Equal treatment of all network users
- Harmonised operation – system security
- Same chances for delivery of ancillary services

→ Justification of new requirements comparing to current requirements and standards

Minimum requirements vs. additional benefits

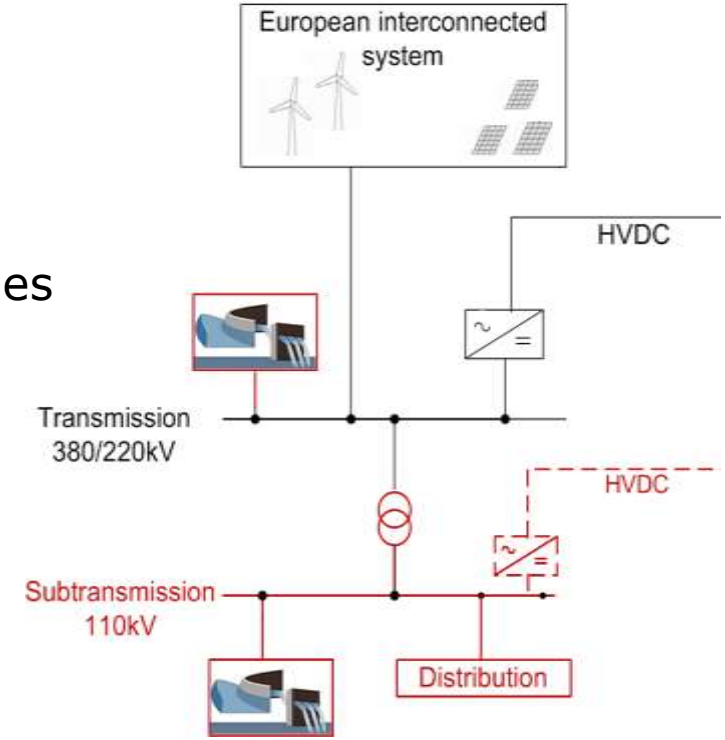
- Optimal use of multi-purpose HVDC schemes
- „Fit for purpose" principle → Require only necessary functions
- Consider the additional cost

→ System intelligence – towards a smart system
→ non-mandatory requirements can be provided as ancillary services

Impact on AC Systems

Ensure the overall system security

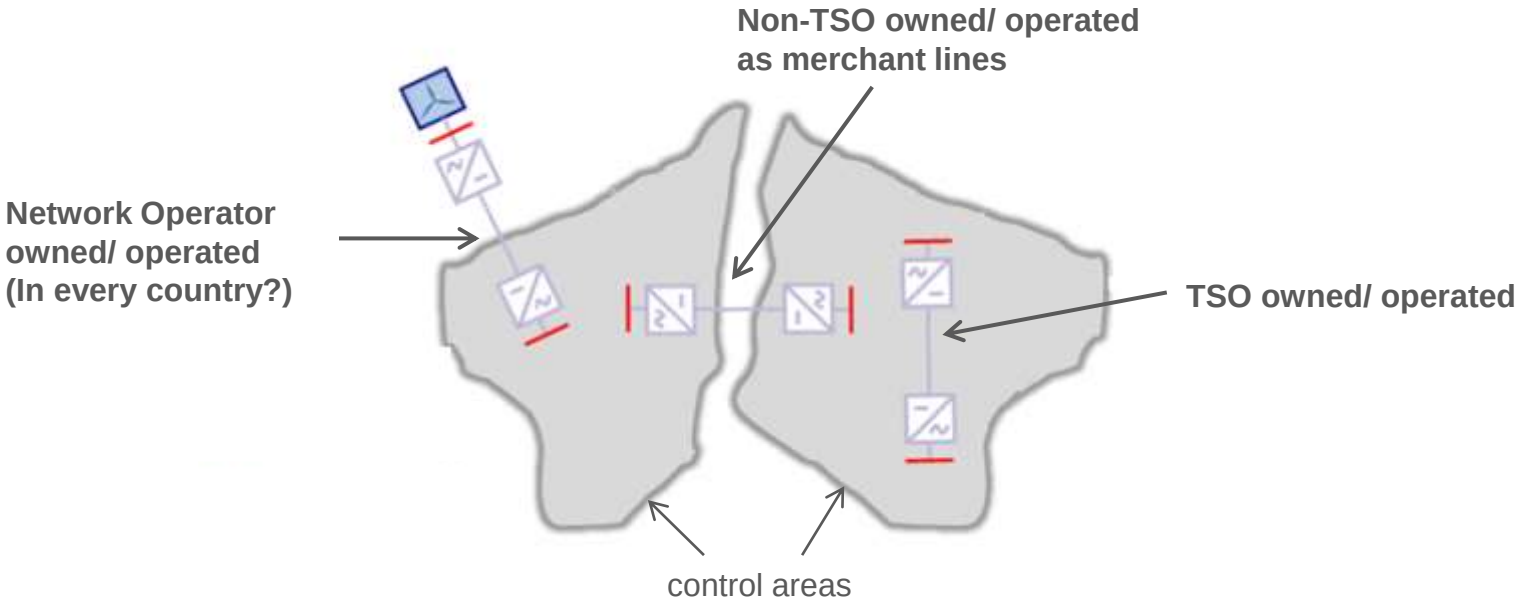
- Power quality standards
  - Harmonics - Filter dimensioning
  - Interaction with synchronous machines
- Lack of short circuit power
  - Fault detection
- Reactive power requirements



Enable DC grids development

→ Need for detailed studies, Working Groups (e.g. Cigré)

Roles & transparency

- Non-discrimination between TSO- and non-TSO owned/ operated HVDC systems
- Optimum between system security and market access → ***Regulatory Authorities***
- „Smart" design of HVDC systems can have an important effect on capacity calculation

  → assure transparency and maximum grid capacity for market participants