PROMOTioN
PROGRESS ON MESHED HVDC OFFSHORE TRANSMISSION NETWORKS

Online Workshop

Harmonization of HVDC systems

Best practices and potential for standardization

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Part 1
HVDC switchgear and protection systems
Time: Wednesday | 17 June 2020 | 10:00–13:00
Location: ***Microsoft Teams Meeting***

Part 2
HVDC systems control and grid codes
Time: Friday | 19 June 2020 | 10:00–13:00
Location: ***Microsoft Teams Meeting***

Project facts

33 partners

11 countries

4.5 years
(2016 – 2020)

Total budget
€ 42 million

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691714.

TSO's

- TenneT – Taking power further
- SSE
- Energinet.dk
- Rte
- Svenska Kraftnät
- EirGrid

Vendors

- ABB
- Mitsubishi Electric
- Siemens
- GE
- Prysmian Group
- SCiBreak – Enabling the Supergrid
- MHI Vestas Offshore Wind

Wind Developers & Consultants

- DNV·GL
- Tractebel Engineering – GDF Suez
- Deutsche WindGuard
- Ørsted
- equinor

Academia

- RWTH Aachen University
- University of Aberdeen
- Universitat Politècnica de València
- KTH Vetenskap och Konst
- DTU
- KU Leuven
- TU Delft
- rijksuniversiteit groningen
- European University Institute
- University of Strathclyde

Associations, Institutes & Foundations

- Stiftung Offshore Windenergie
- Carbon Trust
- T&D europe
- FGH
- SuperGrid Institute

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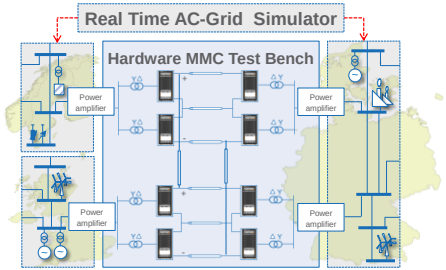
Demonstrators

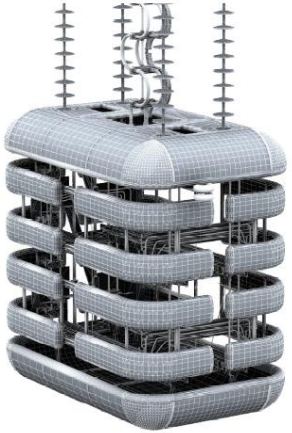


HVDC network control

MMC test bench
RWTH Aachen
Aachen, Germany

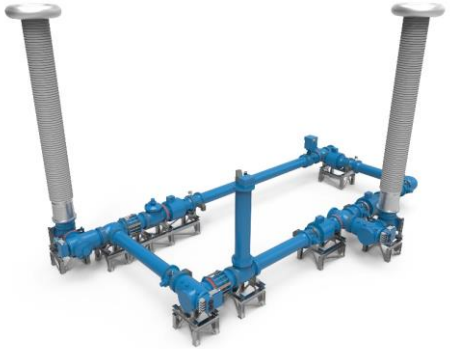
HVDC network protection

Multi-terminal test centre
SSE Transmission
Glasgow, UK



HVDC circuit breakers

KEMA High Power Lab
Arnhem, Netherlands



HVDC gas insulated system

KEMA High Voltage Lab
Arnhem, Netherlands
Lead: ABB

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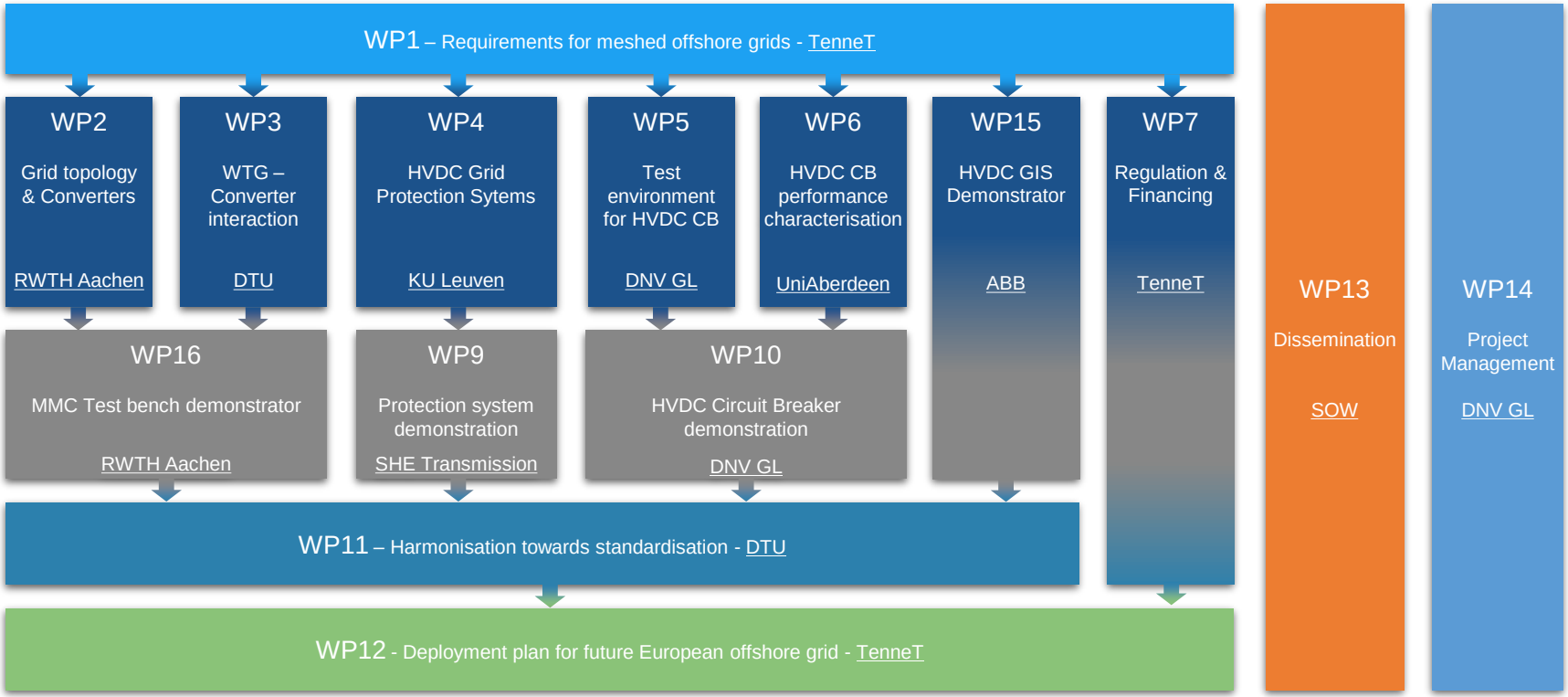
Work packages



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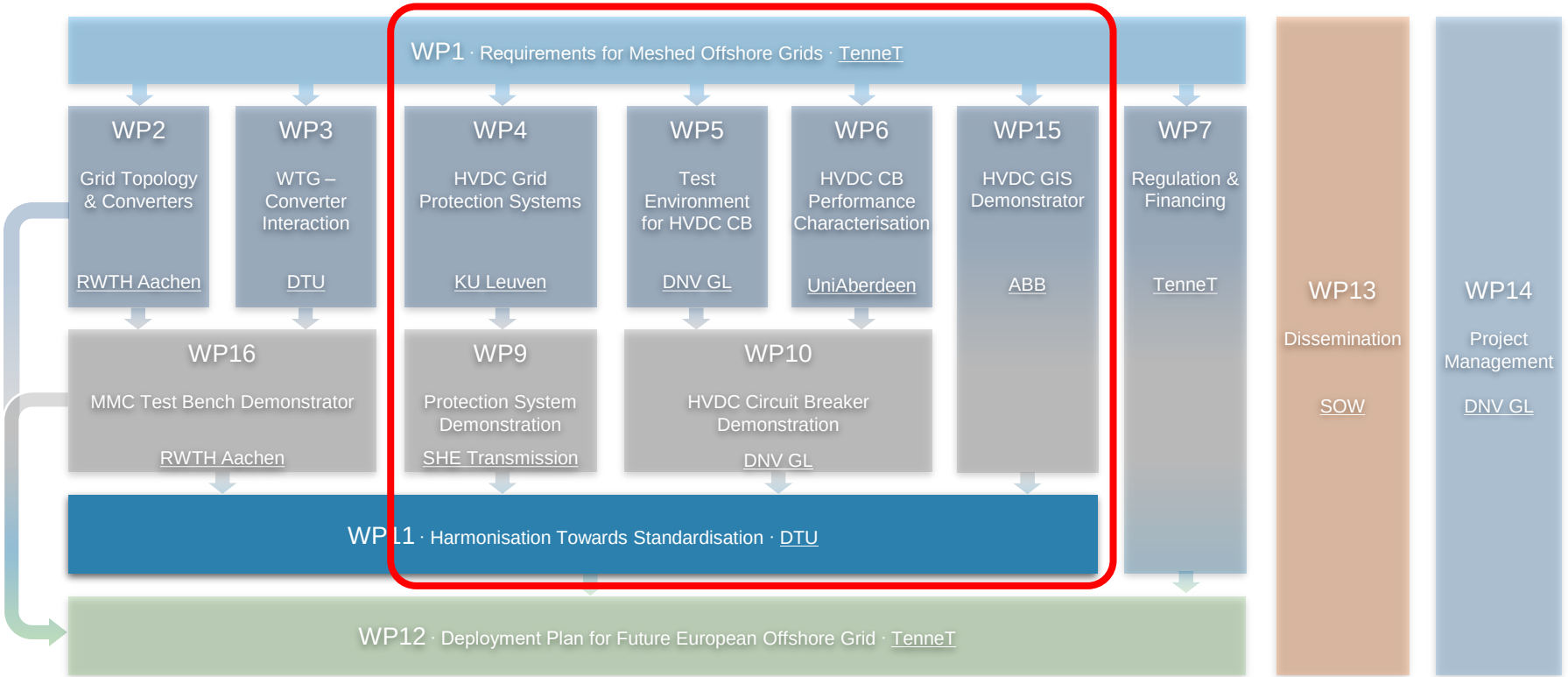
Workshop Harmonization of HVDC systems

Part 1: HVDC switchgear and protection systems



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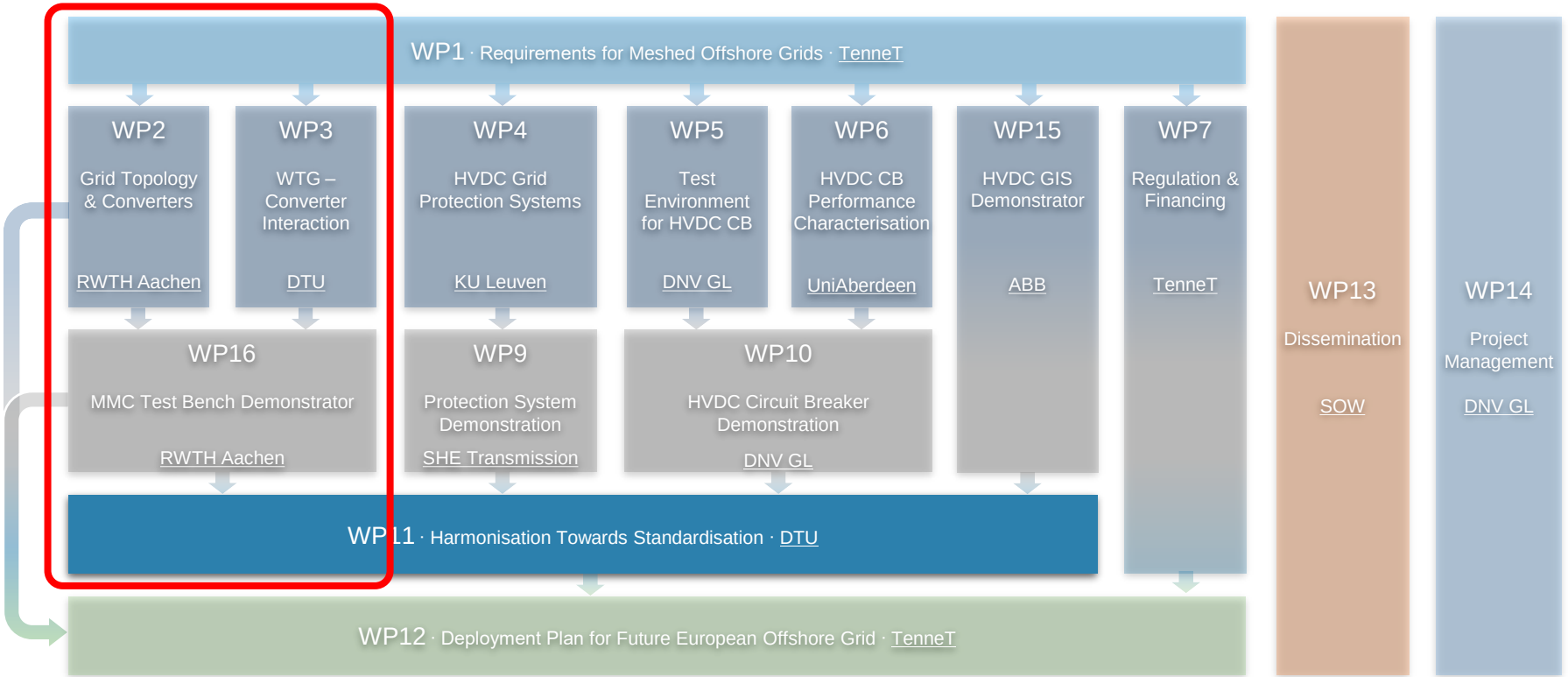
Workshop Harmonization of HVDC systems
Part 2: HVDC systems control and grid codes



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Workshop Harmonization of HVDC systems
Part 1: HVDC switchgear and protection systems

17 June 2020	Program part 1: HVDC switchgear and protection systems
10:00 – 10:15	**Introduction to the workshop** *Poul Sørensen, DTU*
10:15 – 10:30	**HVDC Protection Systems - Towards Harmonisation** *Geraint Chaffey, KU Leuven*
10:30 – 10:45	**Development of circuit breaker standards** *Rene Smeets, KEMA*
10:45 – 11:00	**Harmonization of GIS** *Uwe Riechert, ABB and Hong He, Kema*
11:00 – 11:15	**Cable systems for HVDC power transmission** *Hong He, Kema*
11:15 – 11:30	**HVDC Standardisation Activities of TC17/SC17A/SC17C** *Mark Waldron, National Grid*
11:30 – 11:45	**Landscape of HVDC Grids Standardization in IEC** *Kyoichi Uehara, Toshiba*
11:45 – 12:15	**Discussion** *Moderator: Poul Sørensen, DTU*

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Discussion – HVDC switchgear and protection systems

- Discussion points - under the heading HVDC switchgear and protection systems:
  - Additional questions and discussions to presentations
  - Future R&D needs to support standardization of HVDC switchgear and protection systems
  - Need to propose new standardization work for HVDC switchgear and protection systems?
  - Any other issues regarding standardization of HVDC switchgear and protection systems

- How to participate in discussion:
  - 6 presenters are free to take the word
  - Other participants, please write in chat

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APPENDIX

DISCLAIMER & PARTNERS

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