Offshore Functional Design to Support Project Aquila

March 2023

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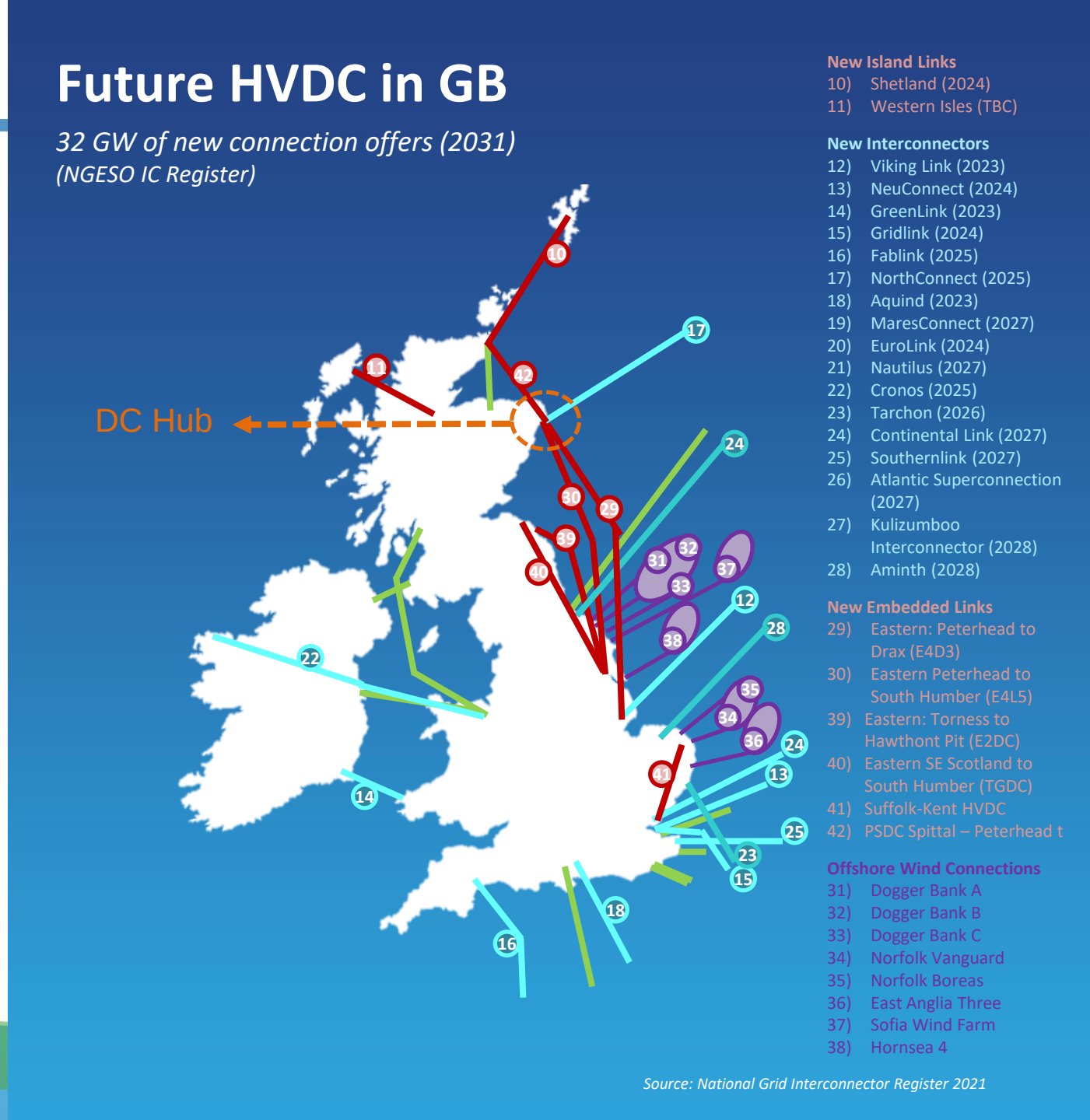
The National HVDC Centre

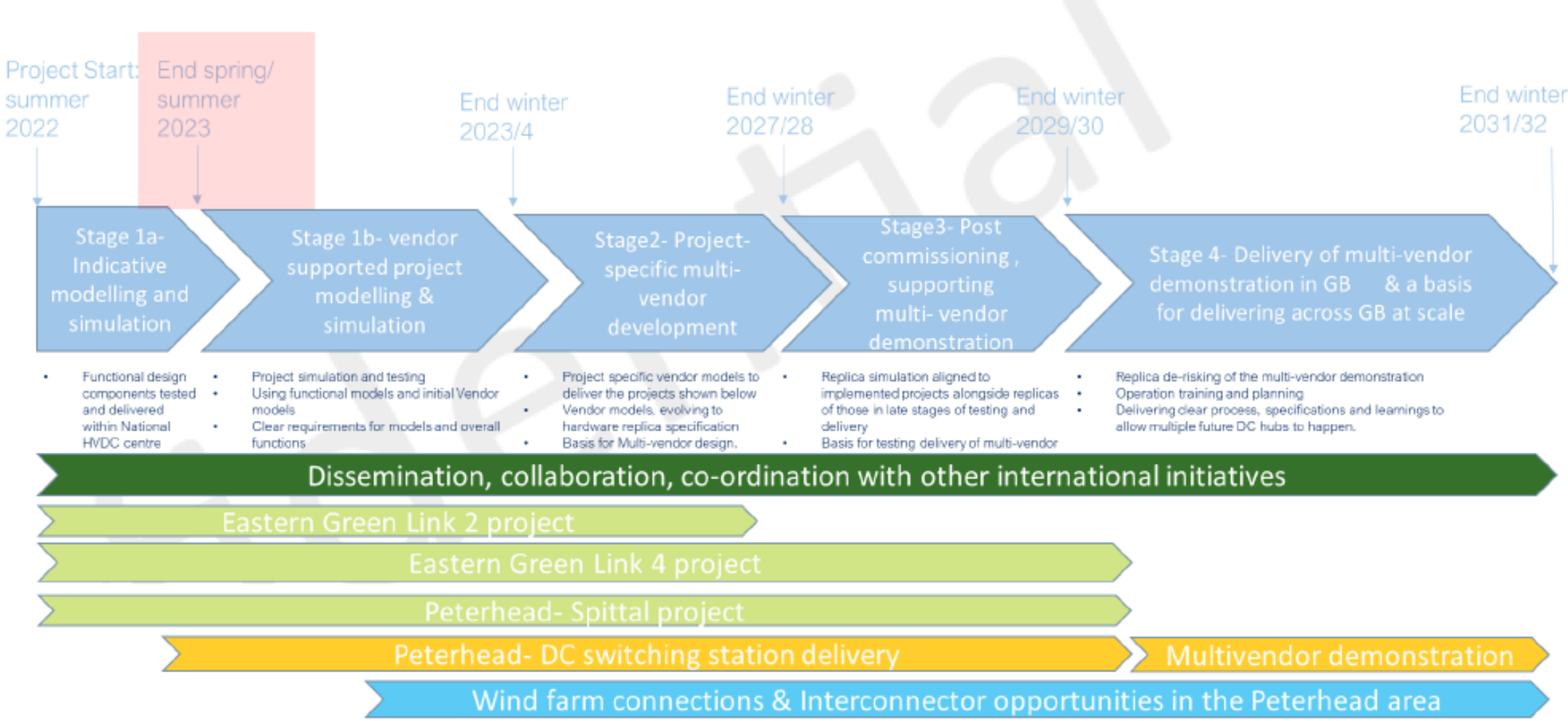
Scottish & Southern Electricity Networks

Offshore Functional Designs (Funded by Ofgem and BEIS)

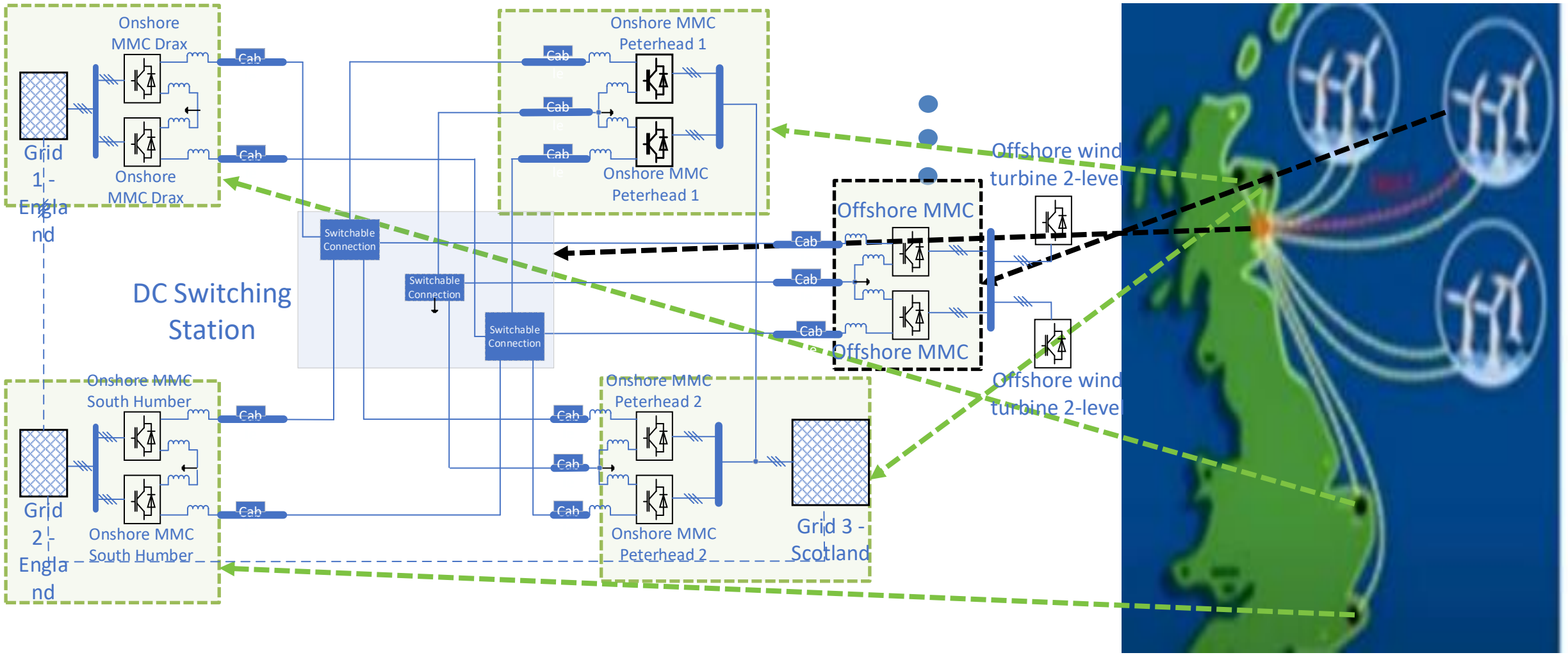
- Context:
  - Enabler of target towards “net-zero”
  - Offshore wind and transmission network
  - High Voltage Direct Current (HVDC)
  - First Multi-Terminal-Multi-Vendor DC network as a business case
  - Support first DC switching station (Project Aquila)
- Objective:
  - Develop component model as building blocks
  - Simulate benchmark system for interoperability design and testing
  - Proof of concept and assessment in functional design
  - De-risk future development and operation
  - Leading to offshore grid code



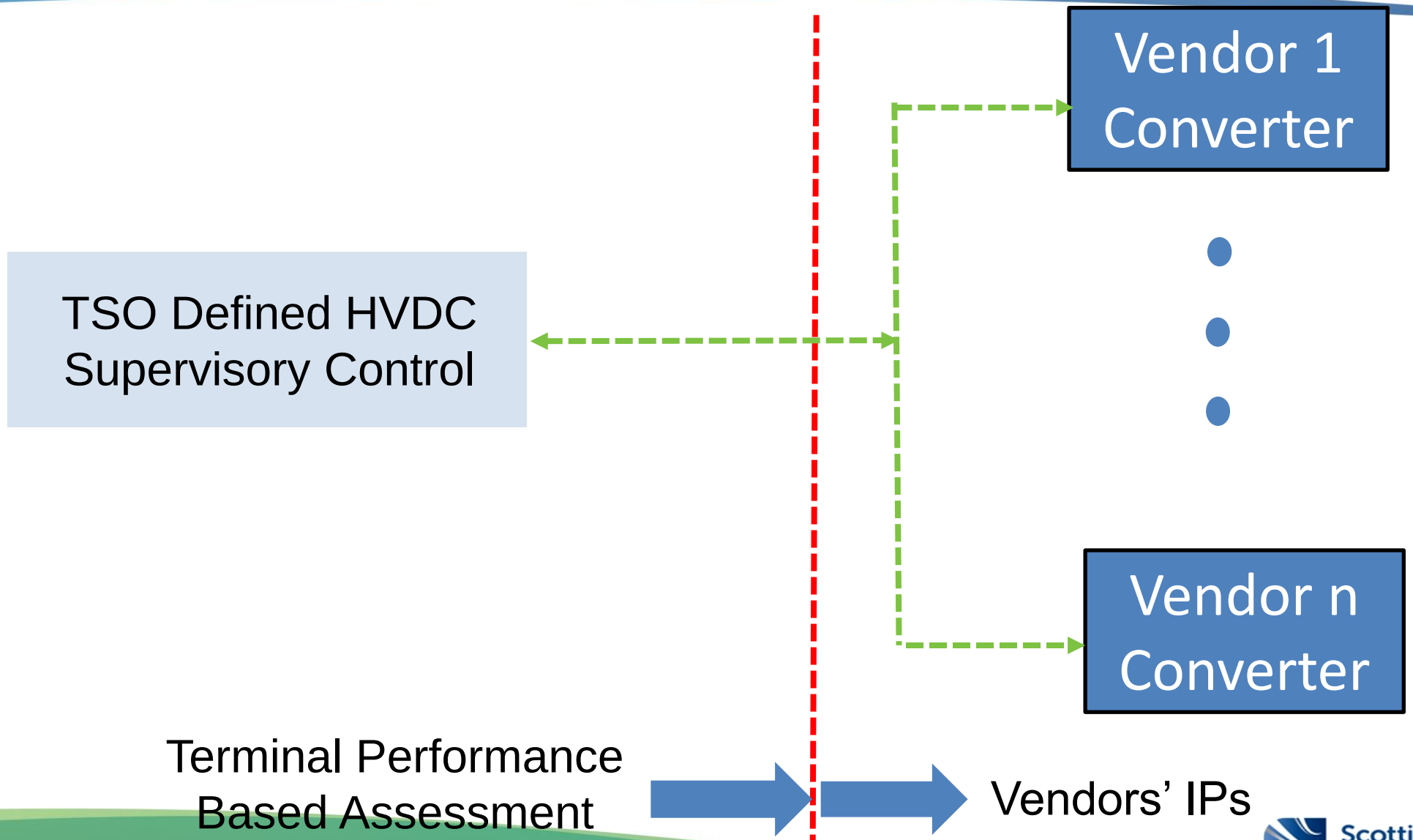
Project Aquila - where are we?



Illustrative Schematic of Offshore Grid Model



Enabling Interoperability of Multi-Terminal-Multi-Vendor HVDC

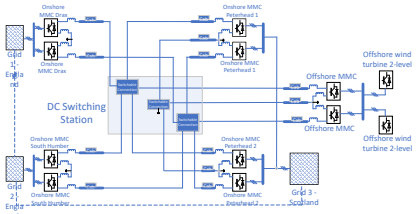


Simulation Test of an Offshore MTMV-HVDC Network

The National HVDC Centre

Modelling

Upload



Operate

Monitor and Analysis

Computing the model for 100,000 ~1000,000 times per second…

RTDS Technologies

Swap benchmark control with vendor's control solution

SIEMENS

MITSUBISHI ELECTRIC

ABB

Scottish & Southern Electricity Networks

Thanks for listening.

Any questions, please?

- For further information, please visit **www.hvdccentre.com** ; OR email: **info@hvdccentre.com or dong.chen@sse.com**

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