



Welcome to our Spring newsletter, where we discuss our new EU projects, update on some of our existing projects, announce our Operators' Forum, and close-down the MTTE project.

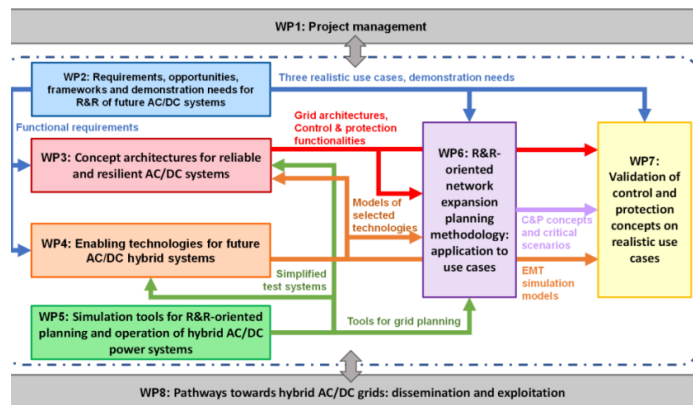
[photograph of the vessel laying the Shetland HVDC Cable]

The Centre Supports Key European HVDC Research Calls

The morning of the 1st April has long had the tradition of providing the odd amusing story, but it seems it can also be the time of welcome news for HVDC developments across Europe. 1st April 2022 saw the award of a number of key research calls that the Centre is set to provide support to.

The largest one being the **HVDC-WISE** project which seeks to enhance reliability and resilience in HVDC Control and Protection design, HVDC specification and associated topologies of design and integration into onshore AC networks; involving 14 partners including 4 TSOs across Europe, academia and research institutions, with a further advisory support from ENTSO-e and manufacturers via T&D Europe.

Within HVDC-WISE, The National HVDC Centre will lead WP2 defining TSO needs for enhanced reliability and resilience, and lead key tests associated with their introduction into GB-scale and North Sea-like networks.

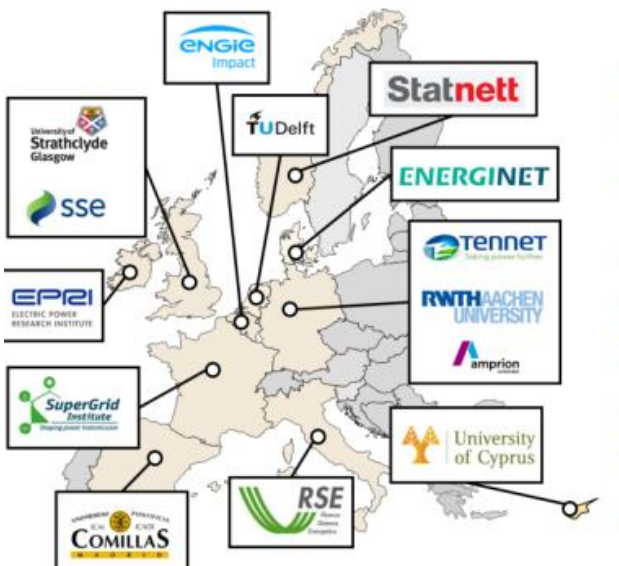


In addition, the Centre is also joining the advisory board of **READY4DC**; defining the requirements for multi-vendor, multi-terminal, grid forming interoperability across Europe, and finally supporting HVDC PhD research within Europe via the **ADOReD** research call.



Busy next 3 years on these fronts, but all important to the development of HVDC in GB and beyond in the years to come.

Ben Marshall



To find our more, please contact us to discuss or to arrange a visit:

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Offshore Functional Design

We have kicked-off the Offshore Functional Design project which will help to inform the ESO, Ofgem and BEIS on the functionality of Offshore grid designs, to expand the capability of transmitting offshore wind power on, for example, the east coast of GB.

At the Centre, we are using real-time EMT simulation tools to combine and develop generic models of the building blocks to illustrate offshore AC & DC networks and test their technical performance via substitution with vendor models.

The project will demonstrate coordination of multiple-terminal offshore network solutions and inform vendors, developers, and onshore system design activities.



Dong Chen

Distributed ReStart Hardware-in-the-Loop (HIL)

The Distributed ReStart project is an Ofgem Network Innovation Competition project, led by National Grid ESO with partners SP Energy Networks (SPEN) and TNEI. It looks at how distributed energy resources can be coordinated and used to restore the power system in the highly unlikely event of a total or partial shutdown of the National Electricity Transmission system^[1].



As part of this project, the HVDC Centre is hosting a controller developed by GE, which is designed to coordinate power restoration from generation and storage embedded within the distribution network. The plan is to use the HVDC Centre's RTDS equipment to simulate realistic distribution network events in real-time and test the performance of the GE controller (Hardware-in-the-Loop testing). The controller needs to send and receive data and signals to locations across the distribution network.

At the Centre, we can also test the robustness of the controller when delays or errors are introduced into the comms channels it relies upon with our Netropy network emulator. Once performance is approved by SPEN and National Grid ESO, the controller will then be put through a live field trial in SPEN's Distribution network.

Fabian Moore

[1] www.spenergynetworks.co.uk/pages/distributed_restart.aspx

2022 HVDC Operators' Forum

This year sees the return of our in-person Operators' Forum at the Centre; which will be themed on: interoperability, lifetime support and delivering the future ambition of HVDC in scale and pace.

There is much to discuss, as this year has seen a step change in HVDC activity, with: c.30GW of HVDC interconnectors forecast into GB, 25GW of Scotwind and over 40GW of offshore wind by 2030.

Date: Tuesday-Wednesday 21-22 June 2022

Time: All day

Details will be posted here:

www.hvdccentre.com/events/

Linda Rowan

End of Discovery Phase for INCENTIVE and Network-DC SIF Projects

The Network-DC project and INCENTIVE projects are nearing close of discovery period activity this April. Network-DC explores use cases and implementing activities unlocking the first use of DC Circuit breaker and associated technologies in GB.

INCENTIVE is investigating the efficient options for stability support that can be provided across multiple devices in conjunction with import of offshore wind.

Each project has produced useful findings, even in this short initial stage, and this really sets up clear recommendations to bring into the future phases. If approved, the next phase for each (alpha) will kick off in September and run for 6 months. This will give us time to delve deeper into the topics highlighted from the discovery phase and give a clear definition of what is required from the end stage (beta) where the main work of these projects will be undertaken.

Ian Cowan

Close Down of the MTTE Project

As you may remember, The National HVDC Centre started life as the MTTE Project (Multi-Terminal Test Environment). This was an NIC (Network Innovation Completion) funded project, which ran from 2014 to 2022.

The project has now been formally closed, and the closed-down report can be found here:

www.hvdccentre.com/library/mtte-project-close-down-report-2022-april/

Simon Marshall

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