

Reference: **619**



Type:

Technical Brochures

Title:

HVDC CONNECTION OF OFFSHORE WIND POWER PLANTS

The first wave of HVDC connected offshore wind power plants (WPPs) has been commissioned and many more are planned in the North Sea, along with other sites around the world. VSC-based HVDC has become the preferred solution for large offshore WPPs, with cable distances typically above 100 km (including both offshore cable and on shore cable to the converter terminal) to the AC grid connection point. This is largely due to several technology advantages offered by VSCs, when compared to other HVAC or HVDC options, resulting in a more economically attractive transmission solution. In addition, a number of HVDC submarine cable connections for power exchange between countries are being planned and the possibility of connecting WPPs to these interconnections, and to future HVDC grids, are being seriously considered. The issues associated with expanding a WPP and HVDC connections with equipment from multiple vendors are subjects which need to be developed further, but are outside the scope of this brochure. Compliance with Grid Codes (GCs), which define the performance during normal and abnormal operating conditions, is another subject area in need of further development. Existing GCs are however written for AC connected WPPs, and for an offshore WPP these conditions typically apply only at the AC grid connection point. This raises the possibility of optimizing the overall WPP and the HVDC converter, with potential economic and maintenance benefits. However, if the HVDC connection and the WPP are provided by different vendors, such optimization cannot be done properly unless concerns about IP rights and operation benefits are clearly laid out and understood by all stakeholders involved. Guidelines and recommendation for point to point and multi terminal HVDC connection of offshore WPPs are therefore highly needed and of mutual interest for the HVDC and WTG industries in order to be able to provide the best possible solutions for all stakeholders.

More Informations :**File Size:**1,5 MB **Pages NB:**100 **Study Committee :** B4 **WG (TF):**WG B4.55 **Year:**2015
