

Review of VSC HVDC Connection for Offshore Wind Power Integration - DTU Orbit (08/11/2017)

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Voltage Source Converter (VSC) High Voltage Direct Current (HVDC) connection has become a new trend for long distance offshore wind power transmission. It has been confirmed by a lot of research that the maximum distance of a High Voltage Alternative Current (HVAC) sub-marine cable transmission system is limited due to surplus charging current of the cables. The VSC HVDC transmission system has the ability to overcome the limitation and offers other advantages over the HVAC transmission system. This paper is to review the VSC HVDC transmission technology and its application for offshore wind power integration. Firstly, the main components, configuration and topology of the VSC HVDC transmission system are described. Secondly, the converter control system and control strategies are presented. Following that, the capabilities of the VSC HVDC technology are described. Finally, the focus is given on the control methods of the VSC HVDC transmission system for fulfilling grid code requirements concerning Low Voltage Ride-Through (LVRT) and frequency regulation.

General information

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