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Protection of Future Multi-Terminal HVDC Grids

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Message from the Guest Editor

Multi-Terminal HVDC (MT-HVDC) grids are expected to play a key role in future electricity delivery systems. The main drivers for the development of MT-HVDC grids are the large-scale integration of renewable energy resources, particularly off-shore wind farms, and the promotion of international energy markets through the concept of super-grids. The voltage source converter (VSC) technology, practically implemented as modular multilevel converters (MMCs) based on half-bridge or full bridge submodules, enables the realization of MT-HVDC grids by offering flexibility to change the power flow direction and the possibility of connecting to weak AC systems. This Special Issue covers both MT-HVDC grids comprising more than two terminals and meshed DC paths and MT-HVDC systems comprising more than two terminals but no meshed DC paths. There are a few MMC based MT-HVDC systems in operation while the world's first large-scale MT-HVDC grid, the Zhangbei four-terminal HVDC grid in China, is expected to be operational in 2022.

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Message from the Editor-in-Chief

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