

The Development and Application of DC Technologies in Renewable Energy Integration

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Abstract

Owing to the development in the field of electronics, considerable technical progress has been made in DC technologies, which have a very promising future for integrating renewable energy into power systems. High voltage DC transmission technologies have been used for integration of large scale renewable energy systems, especially, offshore wind farms. At lower power levels, medium voltage and low voltage DC distribution have also been advised for integration of distributed renewable energy systems. This paper investigates the development and application of DC technologies in renewable energy integration, as well as challenges and counter measures. The progress in international standardization of DC technologies is also introduced.