

Offshore wind farm electrical design: a review

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Abstract— Wind energy will be indispensable as Europe advances towards a low carbon energy future. Offshore locations in the North and Baltic seas are expected to host large arrays of wind farms that plan to export formidable amounts of electricity to the continent. The design of such plants is an intricate task where the electrical layout plays a crucial role. This complexity calls for the use of advanced optimization tools to support investment and operation decisions. This paper reviews the main approaches already developed in the literature and discusses their implications.

Index Terms— Offshore installations; wind design optimization; circuit optimization; energy; power system reliability; stochastic optimization

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