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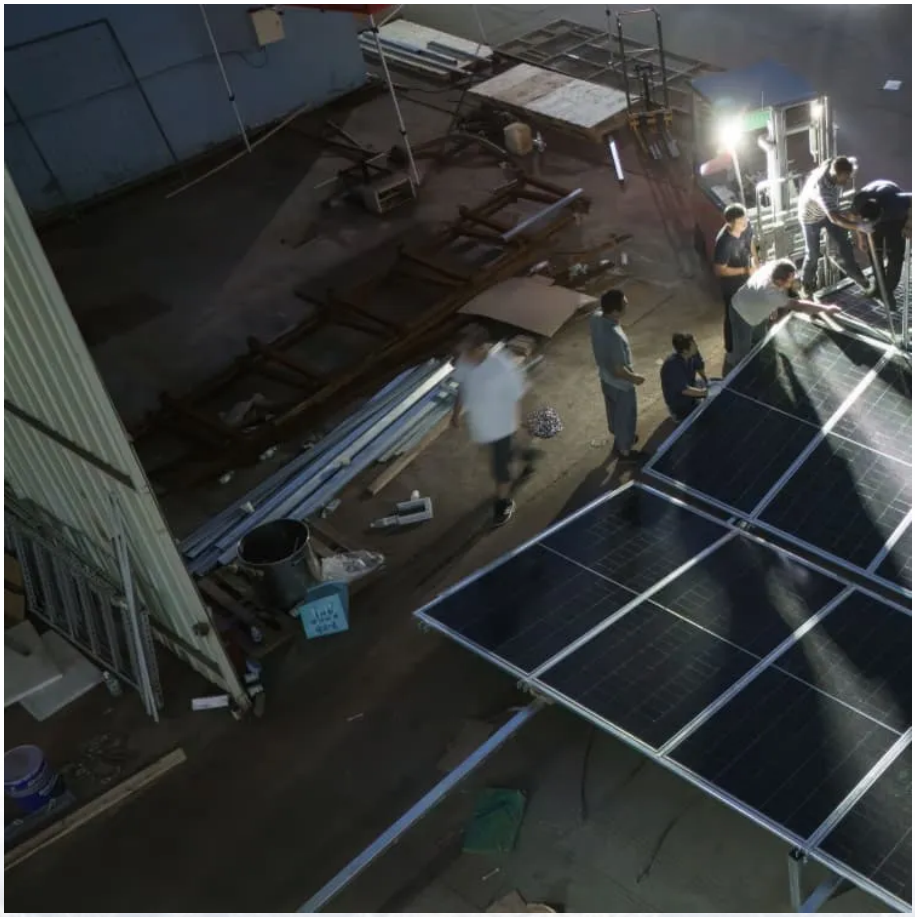
Communication base station wind power high frequency and low frequency



Overview

Can low frequency AC transmission connect a large offshore wind farm?

Abstract— This paper investigates the feasibility of using the low frequency AC transmission (LFAC) system, e.g. fraction of 50 Hz or 60 Hz, for connecting the large offshore wind farm to the grid by modelling and simulation.

What technologies are used in offshore wind power transmission?

There are two mature technologies for offshore wind power transmission: high-voltage alternating current (HVAC) transmission and high-voltage direct current (HVDC) transmission. The power frequency high-voltage AC transmission (HVAC) method has relatively simple structure, mature technology, and rich engineering experience.

What is the architecture of an offshore power system?

The architecture of an offshore power system has been proposed in , where a number of topologies and configurations have been described for connecting Offshore Wind Power Plants (OWPPs) to the onshore grid. Currently, the commonly accepted technologies for offshore transmission connections are High Voltage AC (HVAC) and High Voltage DC (HVDC).

Which topology is best for inverter of offshore wind power transmission?

Due to the limitation of grid-type wind turbines, BTB-MMC and M3C are the topological solutions that can be maturely applied to offshore wind power transmission. However, BTB-MMC is less economical, so this article recommends M3C topology as the first choice for inverter of offshore wind transmission.

What are the possible solutions for offshore wind farm connection?

As shown in Fig. 1, possible solutions for offshore wind farm connection can be conventional HVAC connection, the LFAC connection and the HVDC connection. Since HVDC has the disadvantage of higher investment cost for

short and intermediate distance transmission, it will not be studied herein.

How can a wind farm transmit power over a long distance?

One of the main issues is the transmission system, linking between the offshore wind farm and the on-land electrical grid, which transmits large amount of power over a long distance. Currently, the possible solutions are: HVAC, Line commutated HVDC and Voltage Source Converter based HVDC (VSC-HVDC).

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