

Review of the development and the spatial distribution of offshore wind power industry in China

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To develop the blue economy, one of the most critical factors is ocean space. Marine-related industries, such as offshore wind power, marine fishery, shipping and offshore oil, compete in near-shore and offshore space. The marine spatial planning is crucial for the development of these industries.

The first Chinese pilot and commercial offshore wind projects were put into operation in 2007 and 2010 respectively. In the past decade, China's offshore wind power industry has experienced very high growth rates. According to the statistics of World Wind Energy Council, the installed capacity of China's offshore wind power reached 2790MW in 2017, accounting for 14.83% of the global capacity and ranking third after United Kingdom (36.33%) and Germany (28.46%). It is estimated that the development of China's offshore wind power industry will accelerate, and play a more important role in the transition to a low-carbon, sustainable energy system.

The main objective of this paper is to study the spatial distribution and its evolution of China's offshore wind industry. It is organized as follow. Firstly, based on the latest data, the development of China's offshore wind power industry, including the existing, under construction projects, spatial distribution and the latest plan, has been reviewed. Secondly, it discusses the evolution of the spatial planning, the industry distribution, competition among marine industries and the coordination of government's departments. Thirdly, the underlying causes of the rapid and extensive expansion of offshore wind industry are studied. Finally, some policy recommendations are provided for the healthy and sustainable development of China's offshore wind power industry from the perspective of spatial planning.