سیویلیکا - ناشر تخصصی مقالات کنفرانس ها و ژورنال ها
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عنوان مقاله:

Comparative Evaluation of Fixed Support Structures for Offshore Wind Turbines in the Persian Gulf

محل انتشار:

دوازدهمین همایش بین المللی سواحل، بنادر و سازه های دریایی (سال: 1395)

تعداد صفحات اصل مقاله: 2

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خلاصه مقاله:

In recent years, a lot of attention is paid to the issue of reduction in the use of fossil fuels and utilization of renewable energy sources instead. Wind is one of the major sources of clean energy, which can be converted to electric power via wind turbines. It is proven that the effiency of offshore application of wind turbines is much higher than onshore ones. Therefore, the wind industry is heading through offshore. Yet, the challenging part is to select the most suitable support structure for the wind turbine. Currently, monopile is the most frequently used support structure. Application of this support structure is suitable in water depths less than 25 meters [1]. However, the development of offshore wind industry in deeper waters necessitates examining other types of support structures; because in further offshore, this type of structure may need to be of such dimensions that it becomes economically infeasible. Several studies have been conducted to investigate other configurations of support structures for different wind turbine capacities in different locations of Europe and U.S. such as [2, 3]. There is a clear lack of research in this area in Iran, although since 2012, one of the main research priorities of Renewable Energy Organization of Iran is concerned with offshore wind farms [4]. The goal of this study is to design, compare and evaluate different fixed support structures including monopile, tripod and jacket for a 5 megawatts wind turbine. The inplace, modal and fatigue analyses are conducted in SACS software for design purposes. The final designs of the structures are compared from different aspects and the .most reliable structure to use in the Persian Gulf is introduced

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

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