

[DOI: 10.20472/IAC.2019.052.049](https://doi.org/10.20472/IAC.2019.052.049)

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AN OVERVIEW OF THE BLACK SEA WEATHER DOWNTIME

Abstract:

The idea to develop offshore wind projects in enclosed seas is gaining momentum, especially in Europe, bringing attention to the investors and stakeholders from this sector. In this context, the aim of the present work is to assess the severity of the wind and wave conditions from the Black Sea area, that may influence the operations required to assembly a such project. A total of 30-years of data coming from the National Centers for Environmental Prediction (wind data) and from a third-generation wave model (SWAN - wave data) will be considered for assessment. According to the spatial distribution of the wind data (reported at 10 m height) was noticed a maximum downtime of 16% in the western part of this basin, value that can increase up to 24% if we take into account only the winter season. In the case of the waves, a maximum restriction of 12% can be expected for this region in winter, while reported to the full distribution an average of 4% may be reported. In terms of the number of windows (wave heights > 2.5 m), the 6-hour interval is the most frequent one while one opposite a full window of 96-hour is quite rare, being reported around one or two events. Finally, we can conclude that the western part of the Black Sea represents a suitable area for the development of an offshore wind farm, and the marine conditions are favorable for the development of a such project.

Funding: This work was supported by a grant of Ministry of Research and Innovation, CNCS - UEFISCDI, project number PN-III-P1-1.1-PD-2016-0235, within PNCDI III.

Keywords:

Black Sea; weather downtime; coastal area; wind speed; wave height

JEL Classification: Q00