



Inés Coca-Tagarro

Environmental Scientist
BlueWise Marine Ltd.
GMIT iHub Galway

Dublin Road
Galway
Ireland

ines.coca@bluewisemarine.ie
www.bluewisemarine.ie



Practicalities of Site Selection for an Offshore AWE Demonstration: A Case Study for Ireland

Inés Coca-Tagarro¹, Giacomo Politi², Quentin Morel², Louise O'Boyle¹

¹BlueWise Marine

²Ampyx Power BV

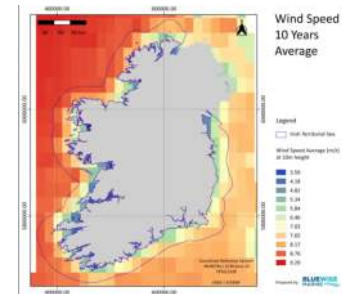
Airborne wind energy systems (AWES) open promising solutions to the developing renewable energy industry. The offshore deployment of those systems sees challenges and features that cannot (necessarily) be generalized within floating wind turbine studies. Therefore, it is necessary to adopt suitable methodologies to carry out appropriate site selection studies both for pilot testing and further operations.

Identification of suitable sites involves integration and interpretation of multi-faceted geospatial factors and a full understanding of technical, socio-economic, environmental and political elements. Finding and collecting reliable, up to date, and high resolution data can be challenging for some variables and some of the data sources present gaps in information. Defining the technical criteria (e.g., required wind speed, water depths, accessibility, aviation restrictions, etc.) is also key for successful site selection and it is highly dependent on the objectives and characteristics of the project and the technology that will be used.

Irish waters present an advantageous environment for the development of offshore AWES, given the resource and the test facilities, already established on the territory.

In the present work, an integrated process is adopted to identify the viable areas for deployment of the AWES

designed by Ampyx Power, in Irish waters. The method employs Geographic Information System (GIS) tools and multi-criteria decision procedures, as well as the use of numerous siting criteria offered by the national legal framework, international literature and resources, and technology providers knowledge [1]. The same methodology can be applied for future initiatives in other regions, and it can be easily adapted to other AWE technologies.



Average Wind Speed in 10 years (2010-2020)

References:

[1] H. Díaz and C.G. Soares: An integrated GIS approach for site selection of floating offshore wind farms in the Atlantic continental European coastline. *Renewable and Sustainable Energy Reviews*, 134, 110328 (2020).