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Publication date

2024

Document Version

Final published version

Citation (APA)

Romano, G., Schmidt, H. S., Bonetti, T., & Trombini, S. (2024). *Community Perspectives on Offshore Airborne Wind Energy*. 187-187. Abstract from 10th International Airborne Wind Energy Conference (AWEC 2024), Madrid, Spain. <http://resolver.tudelft.nl/uuid:3d422b74-3a9a-4e54-a06d-2a70c25f353b>

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Community Perspectives on Offshore Airborne Wind Energy: A Survey Study

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Airborne Wind Energy (AWE) aspires to tackle the increasing demand for sustainable energy. Along with the technological demands, it is important to consider the social needs and concerns related to AWE deployment to smoothen its introduction into society. The available literature provides many optimistic assumptions about the social acceptance of AWE but no empirical evidence [1]. On this basis, our work aims to measure how a local community evaluates a hypothetical large-scale deployment of offshore AWE systems (OAWES). The method used to survey a local community, and the preliminary results are presented.

The development of the survey was guided by existing methodological literature [2], established questionnaires on wind energy acceptance literature [3,4], and the expertise of one of the authors (H.S.) in social scientific inquiry. The survey questions specific to the OAWES investigation will be shared for transparency and further use.

The researched community lives in County Mayo, an Irish county bordering the sea. This location was chosen because an AWE test site was established there in the context of the EU Interreg project MegaAWE, and the community has been familiar with conventional wind farms for a few decades. This allows us to limit the bias related to technological unawareness and to compare community members' responses for AWES and OAWES. Regarding the comparison, a decreased safety concern is expected for OAWES, given the lower immediate impact of a possible system failure (i.e., an offshore kite crash is not directly dangerous for human beings and their properties). Other aspects analyzed in relation to the social acceptance of the OAWES include visual disturbance, noise annoyance,

ecological impact, impact on leisure activities and the local fishing industry, and attitude toward the energy transition.

Notably, as technology evolves, social acceptance also changes [5]. Thus, the survey aims to explore residents' evaluation of an OAWES pre-construction. Such a phase is crucial for the engagement and collaboration of the local population, and the results obtained through the survey could entail recommendations for AWE developers. From this perspective, AWEC2024 will represent a testing ground to understand how sector experts perceive and weigh the above-mentioned factors.

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