

The Locational Attractiveness of Ports on The Central Coast of Poland for The Implementation of An Offshore Wind Farm Service Base*

Dariusz KLOSKOWSKI and Weronika KOSEK

University of Technology in Koszalin, Koszalin, Poland

Correspondence should be addressed to: Dariusz KLOSKOWSKI; dariusz.kloskowski@tu.koszalin.pl

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Abstract

The study investigates the potential of small and medium-sized seaports along Poland's Central Coast as service bases for offshore wind farms (OWFs). Motivated by the need to support Poland's ambitious offshore wind energy goals and the critical role of ports in enabling this transition, the research addresses a significant gap in the literature. While much attention has been paid to large commercial ports, there is limited understanding of the capabilities and challenges of smaller ports in supporting OWF operations.

The study employs a mixed-methods approach, including a secondary analysis of literature and statistical data, as well as a case study of three ports: Kołobrzeg, Darłowo, and Ustka. This methodology enables an in-depth evaluation of their infrastructure, logistical accessibility, and alignment with OWF requirements.

Findings reveal that small ports possess considerable potential to serve as strategic hubs for offshore wind logistics, provided targeted investments address infrastructure gaps. The ports differ in their readiness, with Kołobrzeg showing the strongest infrastructural advantages, although Ustka was ultimately selected for a planned OWF service base due to its proximity to wind farm zones and favorable operational conditions. These insights underscore the importance of tailored development strategies for small ports to optimize their contribution to Poland's renewable energy transition.

Keywords: seaport, port infrastructure and superstructure, wind farms.