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# Spatial diffusion and the formation of a technological innovation system in the receiving country: The case of wind energy in Portugal

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ABSTRACT

This paper investigates how energy technologies diffuse spatially through the examination of wind growth in Denmark (core) and Portugal (follower). The research draws on the empirical historical scaling dynamics to compare patterns of diffusion, and proposes an explanation for these patterns with the help of the technological innovation systems (TIS) theoretical framework. The analysis uncovered an acceleration of diffusion when the technology attained the new market. The mechanisms that allowed rapid adoption were found to be, among others, transnational linkages and an improved absorptive capacity. The latter benefited from past investments in knowledge development, imports of state-of-the-art technology and construction of a local industry assembling available competencies. Targeted policies (e.g. tender-based feed-in scheme) were effective to stimulate technology transfer and boost diffusion. The linkages with the global TIS and the concept of absorptive capacity improve the understanding of the processes involved in the formation of a TIS in receiving countries.



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