

The Effects of Policy Uncertainty on Technology Diffusion: Wind Power in Italy

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Abstract

Uncertainty on revenues or investment costs generally delays new technology adoption. Only a few studies, however, analyze how this finding applies to policy uncertainty.

Using data on wind plants installations in Italy (1999-2014), we observe that all policy modifications (not only a single change in the type of policy) are relevant in this respect. To capture their effect, we take a novel modeling approach (based on the theory of point processes), which focuses on the study of the technology diffusion pattern.

Our results indicate that adoption events are highly clustered over time. This signals that investors rapidly respond to changes in policy characteristics, by anticipating or delaying adoption, in order to benefit from the support scheme they perceive as more favorable. The result does not depend on the size of wind installations. Furthermore, we show that expected revenues and learning effects also influence adoption consistent with an S-shaped long-run diffusion pattern.

Keywords: Renewable energy policy, wind power, technology diffusion, uncertainty.