

# Explaining Trade Flows of Renewable Energy Products: the Role of Technological Development

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January 22, 2016

## Abstract

This research investigated trade flow of renewable energy products focusing on the role of technological development using gravity model. We estimated the gravity model including patent count as proxy for technological level in exporting country using panel data of 27 OECD countries from 1978 to 2010. We compared pattern of trade flow between two representative renewable energy technology: wind and solar. Furthermore, we estimated the model including interaction term between distance and patent count to describe for technological level in order to examine the hypothesis: the higher technological level of exporter country can mitigate the negative effect of the geographical distance to importer country. As the result from estimation, the patent counts to describe for technological level in exporter increase trade flow in the case of wind. There are difference pattern between wind and solar comparing each result. Especially, the technological level in exporting country impact on trade flow of wind energy, but this factor does not impact on solar energy. Furthermore, there is a possibility that technological development mitigate negative impact of geographical distance between exporter and importer from result of model including interaction term between distance and patent count.

## Key Words

Renewable energy products, International trade, Technological development

JEL Classification Numbers: F14, O30 and Q20

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