

Accepted Manuscript

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PII: S0959-6526(17)31124-1

DOI: [10.1016/j.jclepro.2017.05.172](https://doi.org/10.1016/j.jclepro.2017.05.172)

Reference: JCLP 9712

To appear in: *Journal of Cleaner Production*

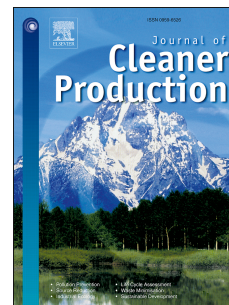
Received Date: 17 January 2017

Revised Date: 8 May 2017

Accepted Date: 28 May 2017

Please cite this article as: Wang DD, Do United States manufacturing companies benefit from climate change mitigation technologies?, *Journal of Cleaner Production* (2017), doi: 10.1016/j.jclepro.2017.05.172.

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Do United States Manufacturing Companies Benefit from Climate Change Mitigation Technologies?

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Abstract: Climate change mitigation technologies play a critical role in controlling greenhouse gas emissions. How the technologies affect firm performance is a research issue of great importance to firm managers and policymakers. Using a dataset on major United States manufacturing firms, this study identifies five types of climate change mitigation technologies: eco-efficiency, low-carbon energy, green design, pollution control, and management system. This paper develops measures to capture the firms' unified (operational and environmental) performance using data envelopment analysis, and examines the effects of different climate change mitigation technologies on the unified performance. The research finds that the adoption of low-carbon energy technology positively and significantly affects the unified performance, whereas the adoption of pollution control technology has a significantly negative effect. Moreover, increasing the share of investment in low-carbon energy out of total technology investment can positively and significantly affect the unified performance, and the share of pollution control has a negative and significant effect. The other technologies do not display significant impacts on unified performance. The results underscore that firms should take into consideration the differential effects of the climate change mitigation technologies when making investment decisions to cope with climate change. The reasons behind the findings and implications for management practices are discussed.

Keywords: Climate change; mitigation technology; unified performance; data envelopment analysis; low-carbon energy; pollution control

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