



# Valuing the wind renewable energy policies and air pollution avoided

More generally, my results highlight that, by incorrectly assuming renewable electricity is a homogenous good, we will understate the relative efficiency of the first-best pollution prices. (JEL L94, L98, Q42, Q48, Q51, Q53, Q58) Citation Novan, Kevin. 2015. "Valuing the Wind: Renewable Energy Policies and Air Pollution Avoided."

More recently, the attention has shifted to the air pollution avoided due to renewable installation and the evaluation of the subsidy costs with respect to the decrease of social damage due to ...

A new study by researchers at Lawrence Berkeley National Laboratory and published in Cell Reports Sustainability finds that total air quality and climate benefits from ...

Exploiting variation in the hourly production from wind turbines, this paper quantifies the heterogeneity in the marginal impact of renewable electricity on pollution. The results reveal that output from competing renewable capacity additions--e.g., wind turbines versus solar panels--provide different marginal external benefits. This finding suggests that, if governments ...

Understanding impacts of renewable energy on air quality and associated human exposures is essential for informing future policy. We estimate the impacts of U.S. wind power on air quality and pollution exposure ...

Rive N. Climate policy in Western Europe and avoided costs of air pollution control. *Econ Model* 2010; 27: 103-115. Crossref. Google Scholar. 42. ... Novan K. Valuing the wind: renewable energy policies and air pollution avoided. *Am Econ J: Econ Policy* 2015; 7: 291-326. Crossref.

This paper estimates the variation over time in the quantity of pollution avoided by renewable electricity. Taking advantage of the natural experiment presented by changes in ...

"Valuing the Wind: Renewable Energy Policies and Air Pollution Avoided", *American Economic Journal: Economic Policy*, 2015. "The Private and Social Economics of Bulk Electricity Storage," (with Richard Carson), *Journal of Environmental Economics and Management*, 2013.

the nonmarket value of wind by 30 percent for Texas and 17 percent for midcontinent markets. Much of this increase in the nonmarket value arises from a redistribution in where air quality improvements occur--when transmission is not constrained, wind offsets much more pollution from fossil fuel units located near highly populated demand centers.

Downloadable! Exploiting variation in the hourly production from wind turbines, this paper quantifies the heterogeneity in the marginal impact of renewable electricity on pollution. The results reveal that output from competing renewable capacity additions--e.g., wind turbines versus solar panels--provide different marginal



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external benefits.

Publications: Valuing the wind: renewable energy policies and air pollution avoided K Novan American Economic Journal: Economic Policy 7 (3), 291-326, 2015  
Setting with the Sun: The impacts of renewable energy on conventional generation J Bushnell, K Novan Journal of the Association of Environmental and Resource Economists 8 (4 ...), 2021  
The Private and Social ...

Studies that project the impacts of wind power and/or other types of renewable energy on air quality and health often rely on reduced-complexity air quality approaches that simplify the relationship between emissions and the ...

Valuing the wind: renewable energy policies and air pollution avoided. K Novan. American Economic Journal: Economic Policy 7 (3), ... transmission, and the environmental value of renewable energy. H Fell, DT Kaffine, K Novan. American Economic Journal: Economic Policy 13 (2), ... Overlapping environmental policies and the impact on pollution.

Abstract. This paper estimates the variation over time in the quantity of pollution avoided by renewable electricity. Taking advantage of the natural experiment presented by changes in ...

(with Joshua Graff Zivin), Energy Journal, 2016. "Valuing the Wind: Renewable Energy Policies and Air Pollution Avoided," American Economic Journal: Economic Policy, 2015. "The Private and Social Economics of Bulk Electricity Storage," (with Richard Carson), Journal of Environmental Economics and Management, 2013.

Switching to renewable energy sources that don't emit pollutants -- like solar and wind power -- could have an almost immediate impact on air quality by halting the production of these particles. While some renewable energy sources -- like biomass and geothermal power -- do emit air pollutants, they do so at a much lower rate than coal ...

Valuing the Wind: Renewable Energy Policies and Air Pollution Avoided by Kevin Novan. Published in volume 7, issue 3, pages 291-326 of American Economic Journal: Economic Policy, August 2015, Abstract: Exploiting variation in the hourly production from wind turbines, this paper quantifies the hetero...

neous damages through the support of renewable energy. More directly related, there have been several studies assessing the environmental value of renewable energy (e.g. Callaway et al. (2018), Fell and Kane (2018), Cullen (2013), Kane et al. (2013), Novan (2015)). In contrast to these studies, we explicitly account for county-

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emissions and the formation of atmospheric fine particulate matters (PM 2.5) and ozone (O<sub>3</sub>). Millstein et al. used reduced-complexity atmospheric ...

In this paper, I examine whether the current policies encourage investments in the socially optimal renewable capacity additions. To do so, I quantify the heterogeneity in the ...

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