

# Trading program linked to significant emissions reductions

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The emissions trading program in the northeastern U.S. to limit carbon dioxide emissions from the electric power sector is responsible for about half the region's emissions reductions – an amount far greater than reductions achieved in the rest of the country, according to a Duke University-led study.

Published online this week in the journal, *Energy Economics*, the analysis used econometric methods to quantify [emissions](#) reductions due to the Regional Greenhouse Gas Initiative (RGGI) and those due to the recession, complementary environmental programs and lower [natural gas prices](#).

The report suggests that without the 2009 introduction of RGGI, undertaken by a consortium of [states](#) in the Northeast, the region's emissions would have been 24 percent higher.

"While the study focused on the northeastern states and the RGGI program specifically, the findings suggest that [emissions trading](#) could be a cost-effective strategy for states now considering how to comply with EPA's recently issued regulations aimed at reducing [carbon dioxide](#) emissions from power plants," said Brian Murray, director of the Environmental Economics Program at Duke's Nicholas Institute for Environmental Policy Solutions and the study's lead author.

RGGI, the first market-based regulatory program in the United States, is a cooperative effort among states to create a "cap" that sets limits on

[carbon dioxide emissions](#) from the power sector, which is lowered over time to reduce emissions. Power plants that can't meet the cap must purchase credits or "emissions allowances" from others that are able to reduce their emissions below their cap.

The Energy Economics study examined how well the program performed between 2009 and 2012. Using data on power generation, fuel prices, state policies and emissions from all 48 continental U.S. states from 1990 onward allowed the authors to separate emissions reduction factors in RGGI states after the program went into effect from factors that affected emissions in other states and time periods.

The study found that while other factors did contribute to a decline in emissions, the program itself was responsible for the largest emissions drop. If factors such as decreased economic activity and electricity use associated with the recession, increased availability of and lower prices for natural gas, complementary environmental policies and the RGGI program were not present, emissions from the region may have been more than 50 percent higher.

"It's been an open question how much of the recent decline in emissions was due to the shale revolution and recession, and how much was due to environmental policies such as RGGI," said Peter Maniloff, co-author and assistant professor at the Colorado School of Mines. "About half the reductions are attributable to RGGI, and the other three factors, collectively, account for the remainder. Ultimately, this work shows that all of these elements contributed, and that policy was the biggest factor."

**More information:** "Why Have Greenhouse Gas Emissions in RGGI States Declined? An Econometric Attribution to Economic, Energy, Market, and Policy Factors," *Energy Economics* (2015), [DOI: 10.1016/j.eneco.2015.07.013](https://doi.org/10.1016/j.eneco.2015.07.013)

Provided by Duke University

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