



# Are Policy Mixes in Energy Regulation Effective in Curbing Carbon Emissions? Insights from China's Energy Regulation Policies

## Background

- Given the urgency of climate change and China's role as the world's largest carbon emitter, this research seeks to determine whether a combination of mandatory, voluntary, and market-based policies leads to meaningful reductions in carbon emissions.

## Study Overview

- Using a staggered difference-in-differences approach, this study evaluates the impact of three major Chinese energy policies: Renewable Energy Law (mandatory), Low-Carbon City Pilot (voluntary), and Carbon Emissions Trading System (market-based). The authors assess the effectiveness of these policies individually and in combination, examining their influence on carbon emissions across 333 cities from 1995 to 2018.

## Learn More

- Wu, J., Nie, X., and Wang, H. (2023), Are Policy Mixes in Energy Regulation Effective in Curbing Carbon Emissions? Insights from China's Energy Regulation Policies. *J. Pol. Anal. Manage.* doi:10.1002/pam.22535
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## Key Takeaways

- The authors found that the combination of mandatory, voluntary, and market-based policies led to a reduction of 4.359 million metric tons of carbon emissions, demonstrating the effectiveness of mixed regulatory approaches.
- While voluntary (low-carbon city initiatives) and market-based (carbon trading) policies significantly reduced emissions, mandatory policies (Renewable Energy Law) unexpectedly led to an increase in emissions, likely due to implementation failures, suggesting that voluntary and market-based policies are more effective.
- Corruption and rent-seeking behavior among local officials also weakened the effectiveness of mandatory policies, highlighting governance failures as a critical barrier to policy success.
- This study found that policy mixes were more effective in undeveloped and politically neutral regions, whereas wealthier and politically influential areas experienced weaker results, possibly due to economic and political resistance.
- These findings suggest that the type of policies implemented has a greater influence on carbon reduction than simply increasing the number of policies, reinforcing the importance of strategic regulatory design.