Prioritizing Justice in New York State Climate Policy: Cleaner Air for Disadvantaged Communities?

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Our country and New York State (NYS) in particular are striving to meet the interrelated challenges of decarbonization and environmental justice. Historically unjust systems and policies have led to a disproportional air pollution burden on low-income communities and communities of color. As a result, the federal and NYS governments have resolved to meet their climate goals while improving air quality conditions in disadvantaged communities.

Bringing together leading environmental justice advocates, economic researchers, public health scientists, and air quality modelers, Resources for the Future (RFF) and the New York City Environmental Justice Alliance (NYC-EJA) along with researchers at Yale, UC Davis, and Northeastern University have partnered to investigate local air quality impacts on disadvantaged communities from implementation of the NY Climate Leadership and Community Protection Act (CLCPA). Specifically, we compare two sets of policies, both in line with the statutory requirements of the law but differing in their ambition and the degree to which they focus on aiding disadvantaged communities, with a business-as-usual (control) case in 2030. One policy case (inspired by recommendations of the Climate Action Council, CAC) models what the New York State government may implement, which includes policies discussed in other jurisdictions and proposed by New York policymakers. The other case (representing what many stakeholders recommend) was crafted by a team led by NYC-EJA and included many environmental and climate justice advocates in New York, who prioritized community protection and directing benefits to marginalized communities. We modeled the impact of policies on the electric power, on-road transportation, ports, and residential building sectors; the effects these

policies have on emissions of direct fine particulate matter ($PM_{2.5}$) and its precursors nitrogen oxides, sulfur dioxide, and volatile organic compounds (NO_x, SO_2, and VOCs); and the resulting $PM_{2.5}$ concentrations experienced by disadvantaged communities and nondisadvantaged communities alike. For a full list of policies modeled, see Table 1 in our full report.

Our analysis has revealed several key insights:

Greenhouse gas reductions in 2030 are substantial under both cases relative to the business-as-usual case but are greater under the stakeholder case (58 percent reduction vs. 34 percent reduction). The stakeholder case also leads to greater statewide emissions reductions for pollutants that contribute to poor air quality (NO_x, SO_2, direct $PM_{2.5}$, and VOCs) than the CAC-inspired case.

The stakeholder case leads to greater statewide air quality improvements (as measured by $PM_{2.5}$ concentration reductions) than the CAC-inspired case. In the CAC-inspired case, statewide average air

Figure 1. Statewide Pollutants in 2030
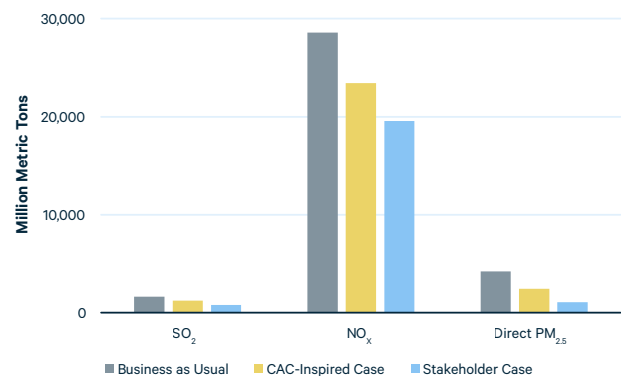
This map shows differences in PM$_{2.5}$ concentrations in 2030 between the stakeholder case and the CAC-inspired case in disadvantaged communities. Darker blue tracts indicate areas where improvements are greater in the stakeholder case.

PM$_{2.5}$ concentration improvements (μg/m³)

- 0.3
- 0.2
- 0.1
- 0.0
- 0.0 to -0.02
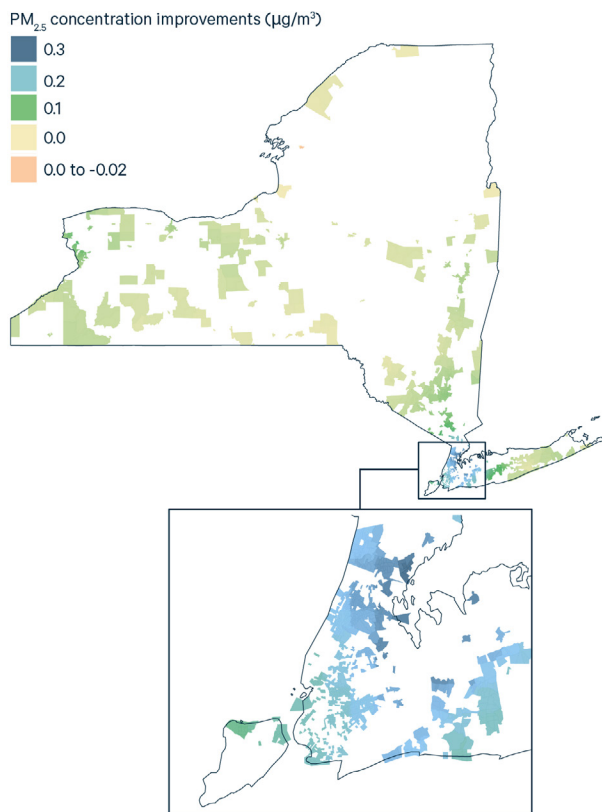
quality improvements in disadvantaged communities are comparable to the improvements made in nondisadvantaged communities. In the stakeholder case, improvements in disadvantaged communities are greater than those in nondisadvantaged communities.

Although, on average across the state, both cases improve air quality (reduced PM$_{2.5}$ concentrations), some census tracts do experience a worsening of air quality (increased PM$_{2.5}$ concentrations): in the CAC-inspired case, about 6 percent of New York tracts (296 tracts of roughly 5,000 total) experience worse air quality, a fourth (75 tracts) of which are disadvantaged communities; whereas, in the stakeholder case, only

three census tracts experience worse air quality, none of which are disadvantaged communities.

The most vulnerable communities (the top 10 percent of tracts in the state's social vulnerability measure, and the 10 percent with the historically worst air quality) experience particularly pronounced improvements under the stakeholder case.

Because air quality improvements are associated with public health benefits, the greater improvements in the stakeholder case would yield the greatest public health benefits. Furthermore, because elderly Black New Yorkers are particularly vulnerable to health complications related to PM$_{2.5}$ exposure, they would experience disproportionate mortality risk improvements relative to their Hispanic, Asian, and white counterparts. We did not do a complete health impact analysis, but in an illustrative calculation, we find that although 22 percent of the 65+ NYC population is Black, this group accounts for 42 percent of the avoided deaths from PM$_{2.5}$ reductions compared with white residents (who make up 41 percent of the NYC 65+ population but account for 37 percent of the avoided deaths).

The greater emissions and air quality improvements in the stakeholder case occur because environmental justice stakeholders prioritized more stringent policies than those included in the CAC-inspired case. In most cases, policies that reduce GHGs also reduce copollutants that contribute to poor air quality. The major policy drivers of the greater improvements in the stakeholder case are a higher price on carbon and copollutants, more generous subsidies for heat pumps targeted at low-income households, and stricter phaseouts of fossil fuels in the electricity and residential sectors. These more effective policies require higher levels of investment, but a full cost-benefit analysis was outside the scope of this work. Previous regulatory analyses that evaluate stringency of greenhouse gas and air pollution policies often find that the environmental and health benefits of added stringency often outweigh the costs.[1]

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1   See recent regulatory impact analyses from the US Environmental Protection Agency, including Table ES-4 in this assessment of national air pollution standards for coal plants completed in 2023: **https://www.epa.gov/system/files/documents/2023-04/MATS%20RTR%20Proposal%20RIA%20Formatted.pdf**

This table shows avoided deaths by race and ethnicity in the stakeholder case vs. business as usual.

Race, ethnicity[2]	Percentage of NYC population 65+	Percentage of avoided deaths in NYC
Asian	14%	6%
Black	22%	42%
Hispanic	22%	15%
White	41%	37%

We see through our work that ambitious climate policies yield the greatest benefits for climate change mitigation and air quality improvement. This research offers unique insights into the distributional air quality impacts of CLCPA implementation. It provides a framework for evaluating future policies that affect the magnitude and location of emissions changes through addressing economic behavior and methods that can be useful in evaluating how marginalized communities in particular will be affected. Though in its early stages, work in this field presents many opportunities for future research. **Read the full report here**.

Resources for the Future (RFF) is an independent, nonprofit research institution in Washington, DC. Its mission is to improve environmental, energy, and natural resource decisions through impartial economic research and policy engagement. The views expressed here are those of the individual authors and may differ from those of other RFF experts, its officers, or its directors.

The New York City Environmental Justice Alliance (NYC-EJA) is a nonprofit, 501(c)3 citywide membership network linking grassroots organizations from low-income neighborhoods and communities of color in their struggle for environmental justice. NYC-EJA empowers its member organizations to advocate for improved environmental conditions and against inequitable environmental burdens by the coordination of campaigns designed to inform city and state policies.

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2　We include racial and ethnic groups for which we have data.