NJ Climate Alliance Annual Conference

Plenary 1: Climate Solutions That Advance Social Justice

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Rutgers University

Emissions Reductions for Environmental Justice Communities Through Climate Change Mitigation Policy

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Figure 1: Relationship Between Cumulative Impact and Percent Minority

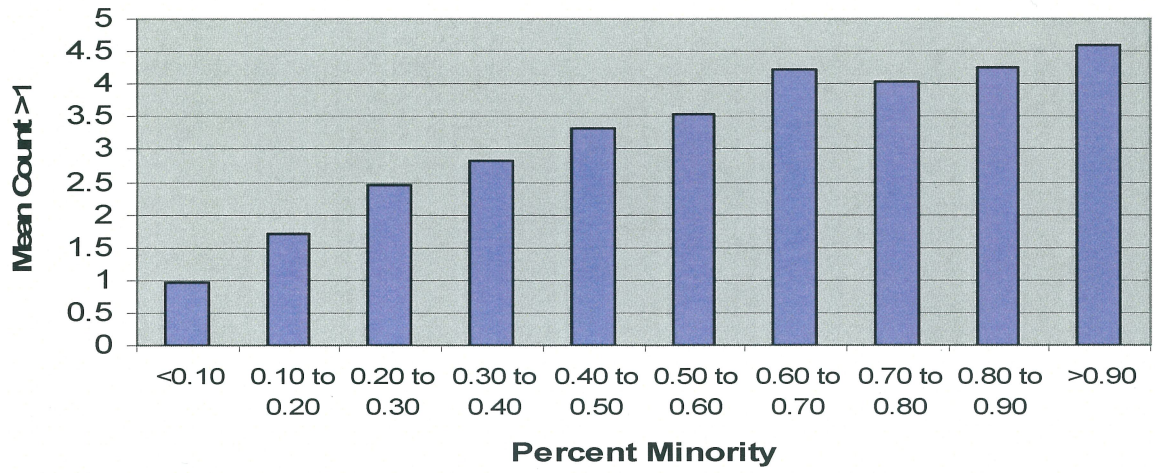
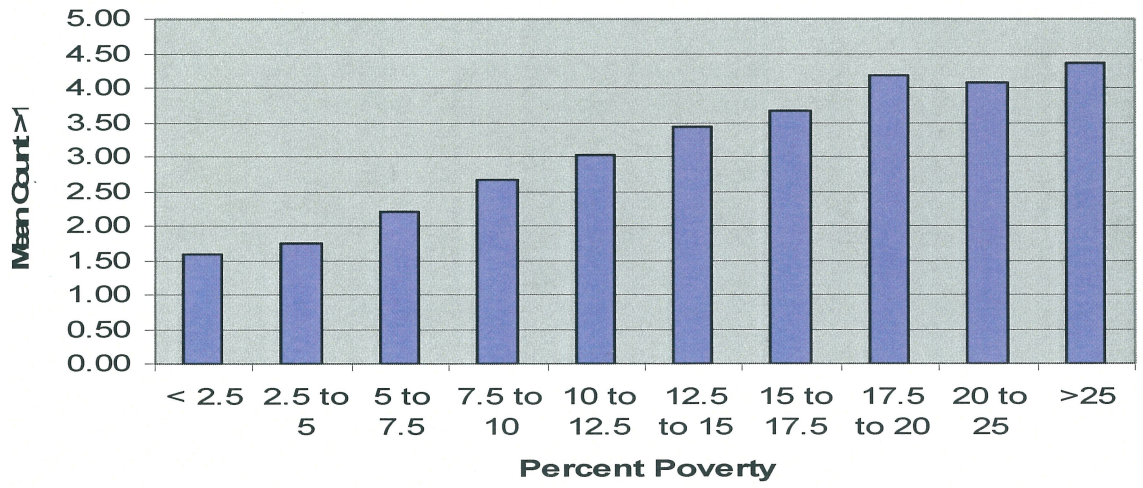


Figure 2: Relationship Between Cumulative Impact and Poverty



- Grouped all block groups based on percent minority and poverty
- Calculated average cumulative impact score for combined groups
- Cumulative impact scores increase steadily with increasing percent minority and poverty

A Preliminary Screening Method to Estimate Cumulative Environmental Impact

Presentation by the New Jersey Department of Environmental Protection to the Environmental Justice Advisory Council

December 2, 2009

Indicators:

- NATA diesel (1999)
- NATA cancer risk
- NJDEP benzene estimates
- Traffic (all)
- Traffic (trucks)
- Density of major regulated sites
- Density of known contaminated sites
- Density of dry cleaners
- Density of junkyards

More Recent Studies

More recent studies with similar findings on a national level regarding air pollution exposure:

Di et al. 2021.

Tessum et al. 2021.

Tessum et al. 2019.

Climate Change Mitigation Policy

Reduce emissions of GHG's; especially carbon Dioxide.

The Premise

Climate change mitigation policy should produce emissions reductions for EJ communities.

More Detailed Premise

- Guaranteed emissions reductions in and near EJ communities; preferably with GHG co-pollutant reductions intentionally maximized, but reductions either way;
- Co-pollutant of concern: fine particulate matter;
- Power plants that affect EJ communities must reduce emissions.

More On Co-Pollutants

- Fine particulate matter ($PM_{2.5}$): linked to premature death (200,000 estimated in 2005), cardiovascular disease, pulmonary disease, lung cancer;
- Nitrogen oxides (NO_x) and sulfur dioxide (SO_2): some effects of their own but also precursors to PM (both) and ozone (No_x);
- Hazardous air pollutants (HAPs): cancer; neurological disorders; and respiratory, reproductive and developmental disorders.

Potential GHG and Co-Pollutants Produced By Newark Natural Gas Power Plant

Facility Potential Emissions, PSD Applicability Thresholds and PSD Applicability			
Air Contaminant	**Proposed Maximum Potential Emissions from NEC (TPY)[1]**	**PSD Applicability Threshold (TPY)**	**PSD Applicable (TPY)**
Carbon Monoxide (CO)	483.70	100	Yes
Nitrogen Oxides (NO_x)	139.10	40	Yes
Sulfur Dioxide (SO_2)	19.73	40	No
Particulate Matter (PM/TSP)	67.17	25	Yes
PM_{10}	101.27	15	Yes
[2] $PM_{2.5}$	97.65	N/A	N/A
Volatile Organic Compounds (VOC)	34.99	40	No
Lead	0.0002	0.6	No
Sulfuric Acid Mist	10.55	7	Yes
Greenhouse Gasses (CO_2e)	2,003,654	100,000	Yes

Goal and Opportunity

Drive down concentrations of fine particulate matter and other GHG co-pollutants as low as possible;

Fine particulate matter has no lower threshold for health benefits;

Makes climate change policy immediately relevant to EJ communities.

The Need

Investigations have found that EJ communities are disproportionately exposed to unwanted land uses and environmental hazards, including air pollution.

Tessum et al. 2021;
Tessum et al. 2019;
Bullard et al. 2007;
Mohai and Saha 2007

Ash et al. 2009;
Pastor et al. 2005;
Pastor et. 2004;
Houston et al. 2004;
Jarrett et al. 2001;
Wernette and Nieves 1992.

The Problem

- Carbon-trading is the country's dominant climate change mitigation policy (*see* RGGI & AB32);
- Carbon-trading dos not mandate reductions at any specific facility or location;
- Leaves EJ and equity to chance and doesn't guarantee reductions in communities with the most pollution.

The Problem

Under carbon-trading three things can happen to emissions in EJ communities:

- **Emissions can increase;**
- **Emissions can stay the same;**
- **Emissions can be reduced.**

Note: See new study by Cushing et al.

Arguments

- Climate change mitigation policy should yield reductions above and beyond those produced by other sections of the Clean Air Act;

- Due to high levels of cumulative impacts we need to use multiple mechanisms to reduce pollution in EJ communities (cumulative policies for cumulative impacts);

- Other sections of the Clean Air Act do not protect our communities enough.

EJ and Equity

- EJ and equity should be part of climate change mitigation policy;

- EJ and Equity should not be left to chance or addressed later;

- The market should not make our EJ and equity decisions, they should be planned and intentional.

New Jersey

- NJ re-enters the Regional Greenhouse Gas Initiative (RGGI) over the objections of the EJ community;

- EJ community requests that its mandatory emissions reductions proposal be integrated into NJ's RGGI rule;

- New NJ government doesn't respond to the request;

- NJ might release rules that set emissions standards for power plants in addition to RGGI requirements.

Community Level Input

- Considering ”ground-truthing” the policy on a community level in a community that is host to a power plant.

- And forming a statewide mandatory emissions reductions workgroup.

Color Scheme

How important are equity and justice to you?

Challenge: make obtaining emissions reductions for EJ communities as important as obtaining GHG reductions.

END

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Sheats, N., Achieving Emissions Reductions For Environmental Justice Communities Through Climate Change Mitigation Policy, 41(2) *William and Mary Environmental Law and Policy Review* 377 (winter 2017).