The Clean Power Plan: Impact on New Jersey

New Jersey Clean Air Council

Thomas Edison State University
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The Clean Power Plan and Emissions Reductions for Environmental Justice Communities

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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 should 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

New Jersey Department of Environmental Protection (2012)

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.

See Morello-Frosch et al. 2011;
See California EPA 2010;
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.

Figure 1: Relationship Between Cumulative Impact and Percent Minority

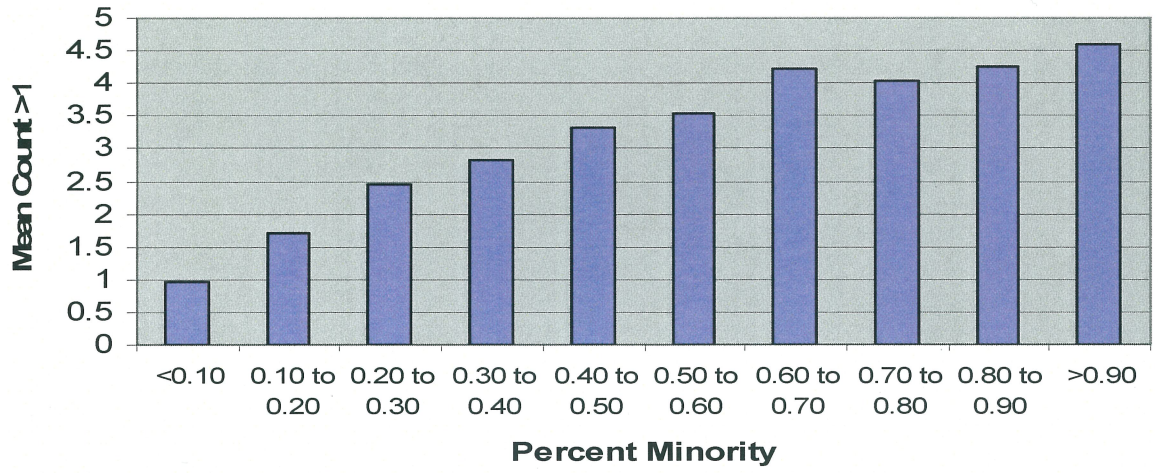
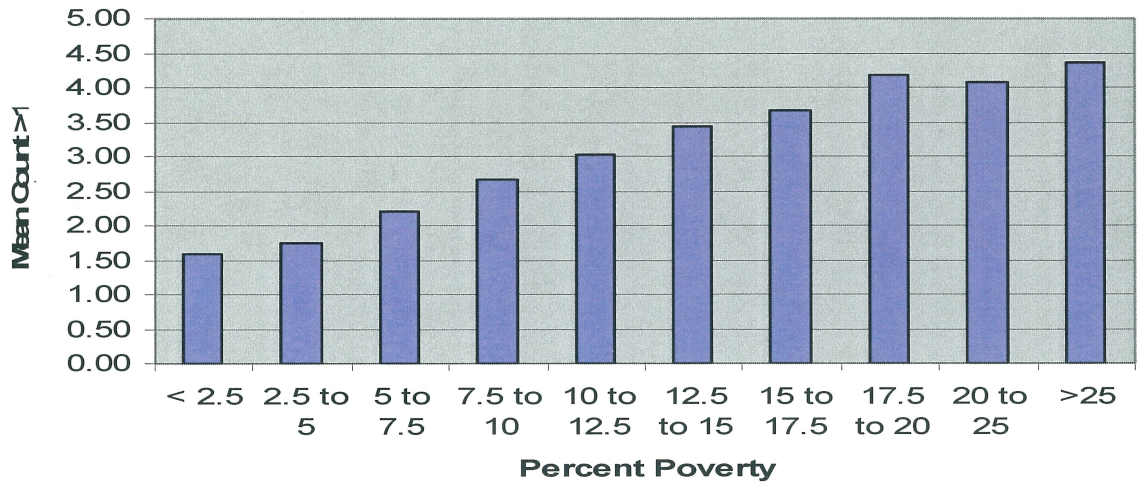


Figure 2: Relationship Between Cumulative Impact and Poverty



- 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

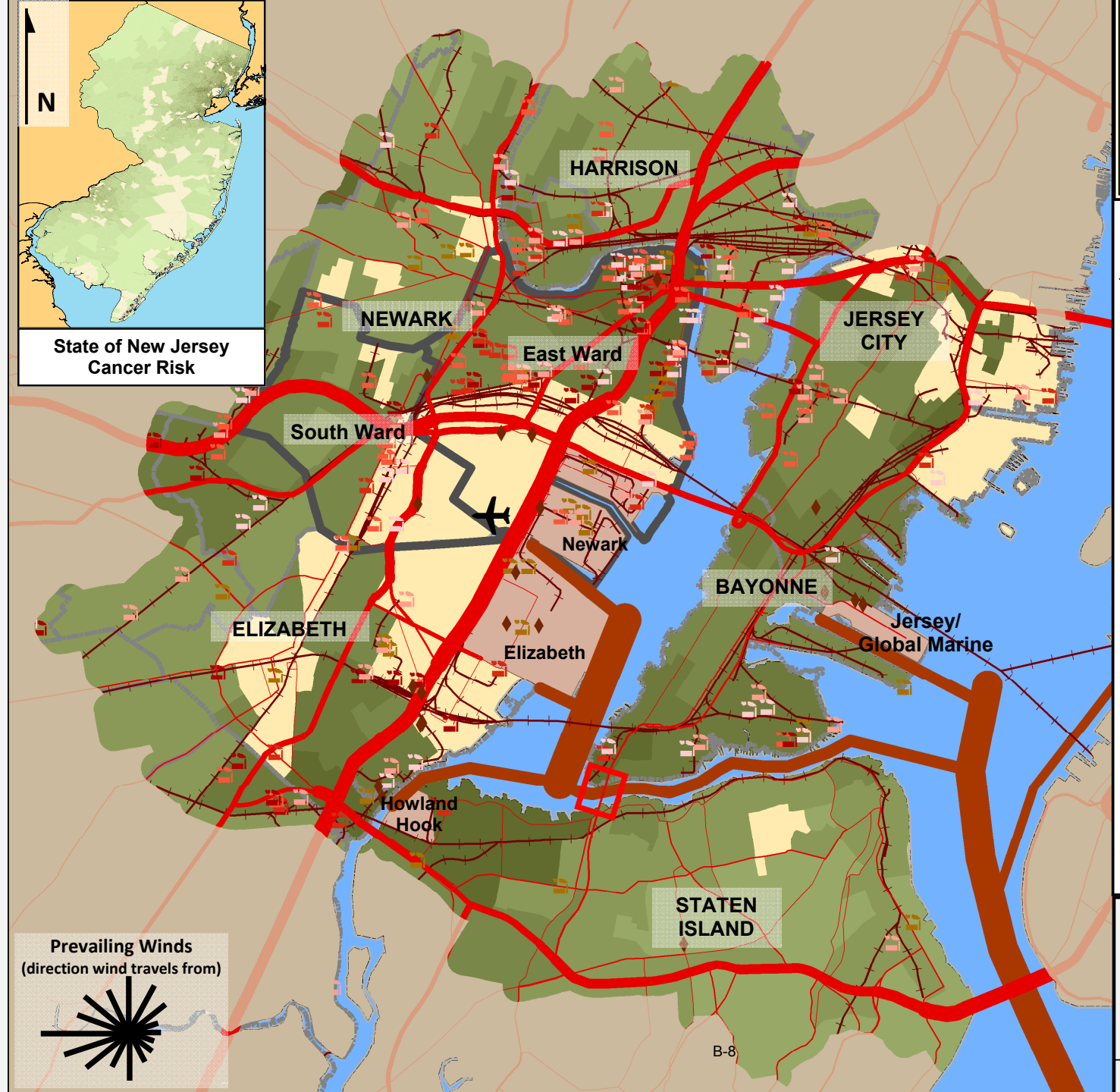
A Preliminary Screening Method to Estimate Cumulative Environmental Impact

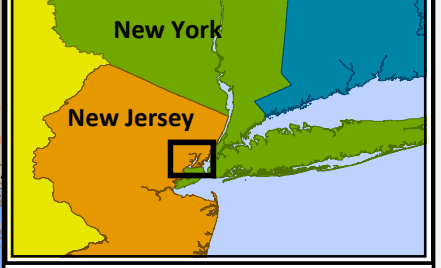
Presentation by the New Jersey Department of Environmental Protection to the Environmental Justice Advisory Council

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.





Legend

Sources

Total Cancer Risk from Air Toxics
(chance in 1 million)

0 25 50 75 100 125

Truck Corridor: Average Annual Daily Trucks

0 6,000 12,000 18,000 24,000

Stationary Air Pollution Source (lbs/year)

0 22 255 1420 11,360 622,665 No Data

Intermodal Facility
Railroad Track
Port Terminal
Shipping Channel

Landmarks

Municipal Boundary
Neighborhood Boundary
Airport
Bayonne Bridge

1.5 0.75 0 1.5 Miles

Figure 3:
Port of NY/NJ Area

Air Pollution Cancer Risk

Sustainable Systems Research

Sustainable Systems Research (2013)

The Problem

- The CPP Rule allows rate averaging and trading, and so does not mandate reductions at any specific facility;
- In these ways it's similar to carbon trading;
- Both leave equity to chance and don't guaranty reductions in communities with the most pollution.

Note: CPP allows trading under either a rate based system or mass based system.

The Problem

Under the CPP and carbon trading three things can happen to emissions and EJ communities:

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

More CPP Problems

- CPP talks about working with states to prevent disproportionate impacts and emissions increases but doesn't say how.
- Does not talk a lot about obtaining reductions for EJ communities.

A Solution

Plants located in and near EJ communities must reduce emissions.

SO:

- **Identify plants in EJ communities (look at proximity analyses);**
- **Force those plants to reduce.**

NJ Plants Subject to CPP

Region	State/ Tribe	Name	ID	Population	Demographic Indicators: Minority	Low Income	Linguistically Isolated	Less than HS Education	Under Age 5	Over Age 64	EJ Indexes (Environmental and Demographic Information): PM 2.5	Ozone	NATA Diesel PM	NATA Cancer Risk	NATA Respiratory HI	NATA Neuro HI	Traffic Proximity	Lead Paint Indicator	NPL Proximity	RMP Proximity	TSDF Proximity	Water Discharger Proximity
1	RI	Entergy Rhode Island State Energy LP	50107	33,031	37	38	60	61	37	81	24	23		NATA update pending			14	17	4	11	4	20
		Tiverton Power Plant	50248	31,638	26	30	74	77	39	77	23	20		NATA update pending			17	11	15	6	15	15
		Ocean State	52130	6,721	7	18	45	41	28	34	8	8		NATA update pending			30	3	3	7	11	5
		Ocean State Power II	54224	6,721	7	18	45	41	28	34	8	8		NATA update pending			30	3	3	7	11	5
		Region Total > or = 80th percentile			3	1	14	6	0	3	3	3					8	7	5	5	2	9
2	NJ	PSEG Hudson Generating Station	2403	321,480	80	55	89	66	56	33	80	77		NATA update pending			90	90	95	88	93	91
		Elmwood Energy Holdings LLC	50862	313,889	78	68	91	77	65	46	81	80		NATA update pending			90	91	96	79	83	76
		Camden Plant Holding LLC	10751	227,858	69	68	81	77	60	52	74	72		NATA update pending			85	86	97	89	88	88
		Bergen Generating Station	2398	204,617	76	42	91	61	48	66	71	69		NATA update pending			85	81	88	69	79	90
		Newark Bay Cogeneration Partnership LP	50189	200,341	81	68	91	83	54	38	85	81		NATA update pending			89	91	98	95	97	90
		Bayonne Plant Holding LLC	50497	189,160	72	56	79	64	58	48	73	71		NATA update pending			80	83	81	85	85	90
		Newark Energy Center	55019	186,119	80	65	91	82	52	43	82	80		NATA update pending			87	90	97	95	97	90
		Linden Cogen Plant	50006	174,186	83	64	93	78	63	40	85	83		NATA update pending			94	90	97	93	99	96
		PSEG Linden Generating Station	2406	155,758	80	61	91	77	60	42	82	80		NATA update pending			94	89	96	93	99	95
		PSEG Sewaren Generating Station	2411	127,653	68	56	79	59	58	43	63	62		NATA update pending			85	78	76	74	82	77
		Woodbridge Energy Center	55839	109,549	78	53	89	74	65	49	78	76		NATA update pending			85	87	85	74	85	90
		PSEG Mercer Generating Station	2408	86,571	75	57	83	81	57	46	71	71		NATA update pending			84	87	76	87	71	90
		Sayreville Cogeneration Facility	55508	81,057	61	27	79	51	48	51	47	47		NATA update pending			23	25	19	13	19	48
		NAEA Lakewood LLC	54640	74,277	48	61	69	64	84	89	64	65		NATA update pending			40	71	65	47	64	54
		Red Oak Power LLC	55219	69,438	61	27	79	51	47	52	48	48		NATA update pending			23	25	10	11	19	48
		Parlin Power Plant	10799	68,550	63	29	80	48	51	52	53	53		NATA update pending			11	30	19	11	35	49
		Eagle Point Power Generation	50561	67,196	44	52	70	67	46	69	47	49		NATA update pending			12	25	11	33	26	26
		West Deptford Energy Station	56663	24,953	48	37	52	46	49	64	32	34		NATA update pending			15	31	3	9	18	13

80-90th percentile | 90-95th percentile | 95-100th percentile

Solution Issues

- But what is an EJ community?

  (> 50%; > state average)

- Reduce by how much?

  (sub-category rate; overall state rate; amount of estimated reductions – 32%; some other fixed percentage – 10%, 25%, 33%)

- How can RE and EE threaten emissions reductions?

Arguments

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

Another Suggestion

Establish a stakeholder group or an “EJ committee” to advice NJDEP on definition of EJ community and which facilities should be forced to reduce.

Equity

- Equity should be part of climate change mitigation policy.
- Equity should not left to chance or addressed later.
- The market should not make our equity decisions.

How important are equity and justice to you?

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

We also support:

Clean Energy Investment Program;

Robust participation process;

EJ analyses of impact of NJ state plan on EJ communities.

I suggest a Clean Air Council meeting devoted to a discussion of these topics.

New Jersey Should Lead

National conversation going on through the Bringing Equity Into Alignment Initiative and a collaboration between the EJ and Science Initiative and Union of Concerned Scientists

END

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