Evaluating Northeast Electric Generating Unit NOx Emissions Based on Electric Demand

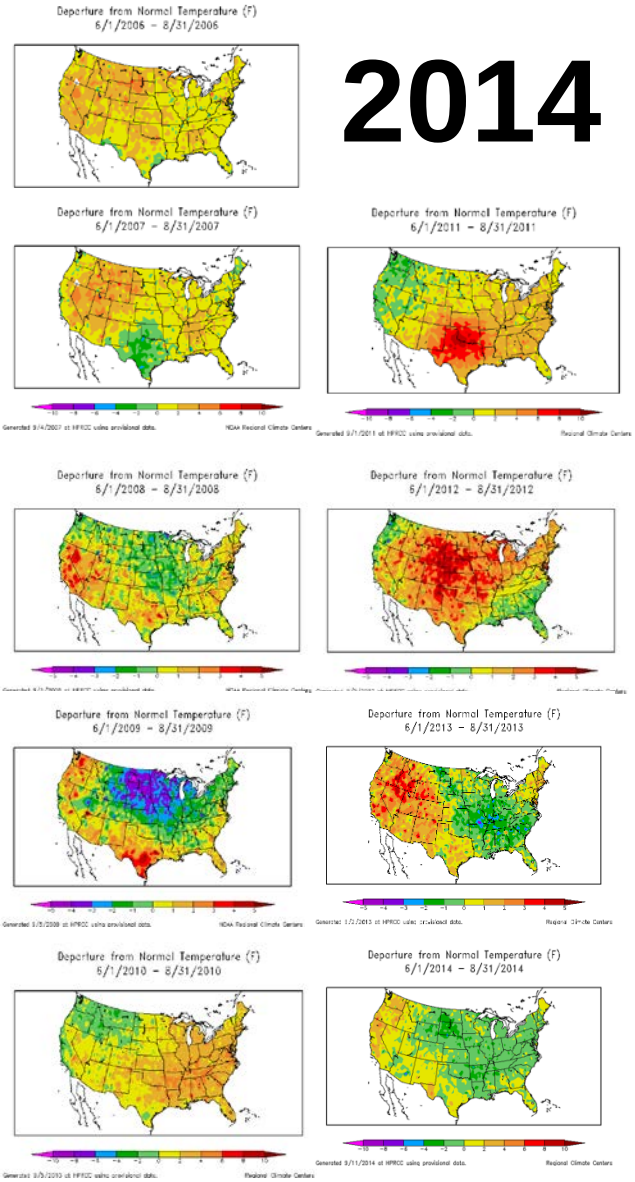
David L. Mackintosh
Environmental Engineer
US EPA Region 1
Boston, MA

DISCLAIMER

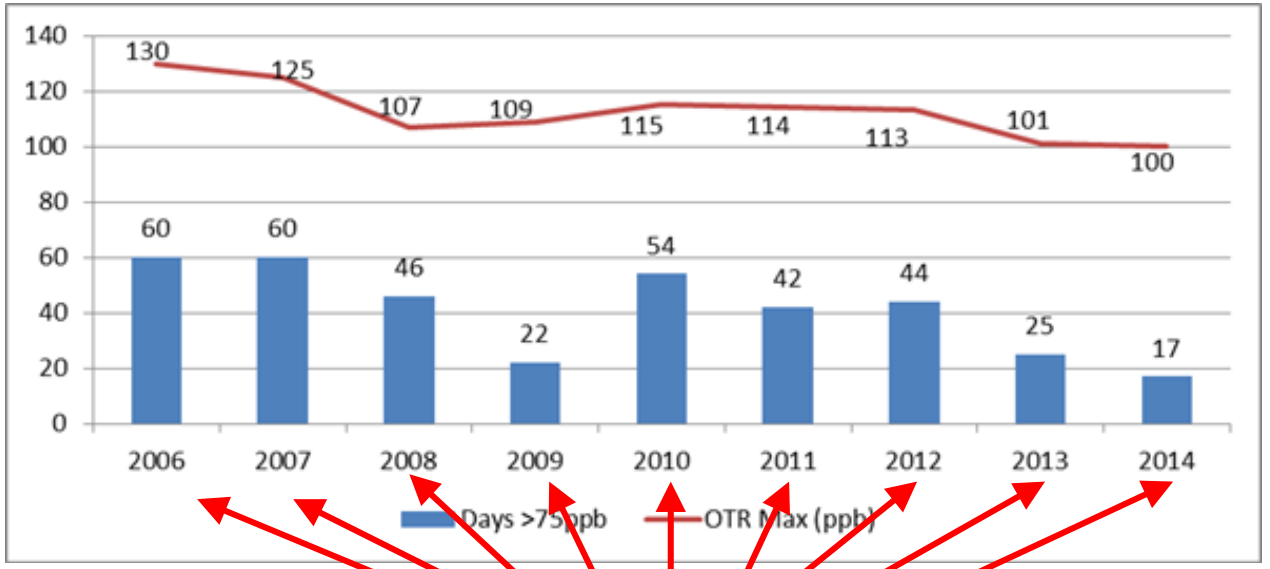
The views expressed in this paper are those of the author and do not necessarily represent those of the U.S. Environmental Protection Agency. In addition, this analysis has not been subjected to the Agency's peer and policy review process. No official Agency endorsement should be inferred.

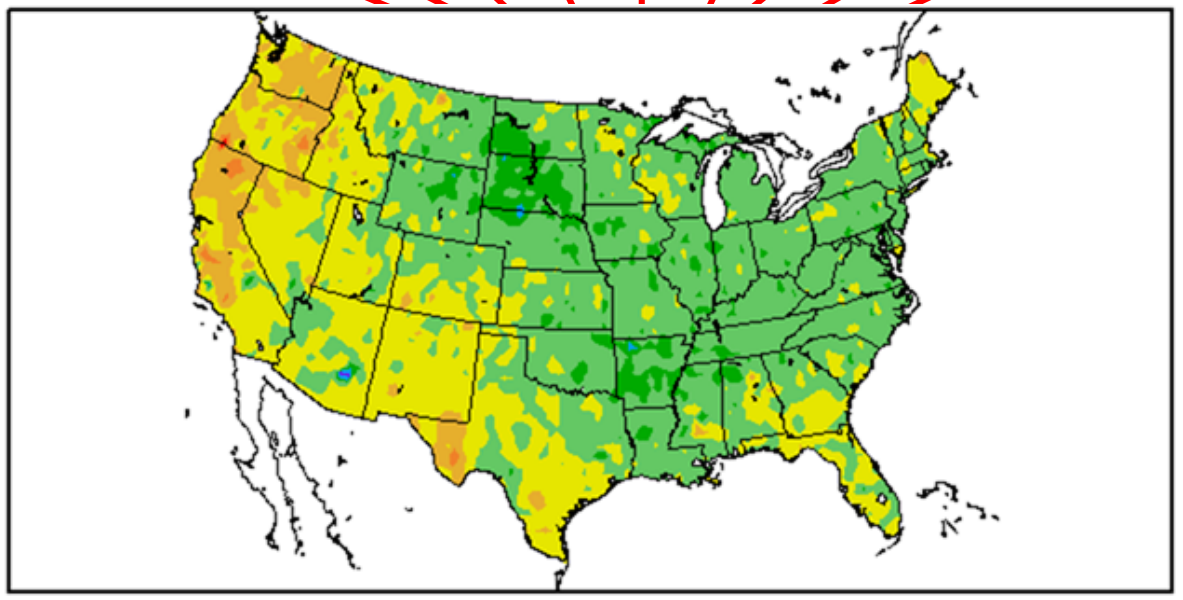
Ozone & Temperature Pattern

SOURCE: OTC Modeling Committee

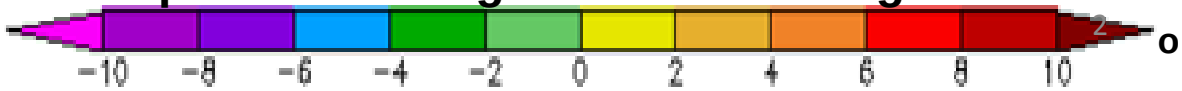


2014

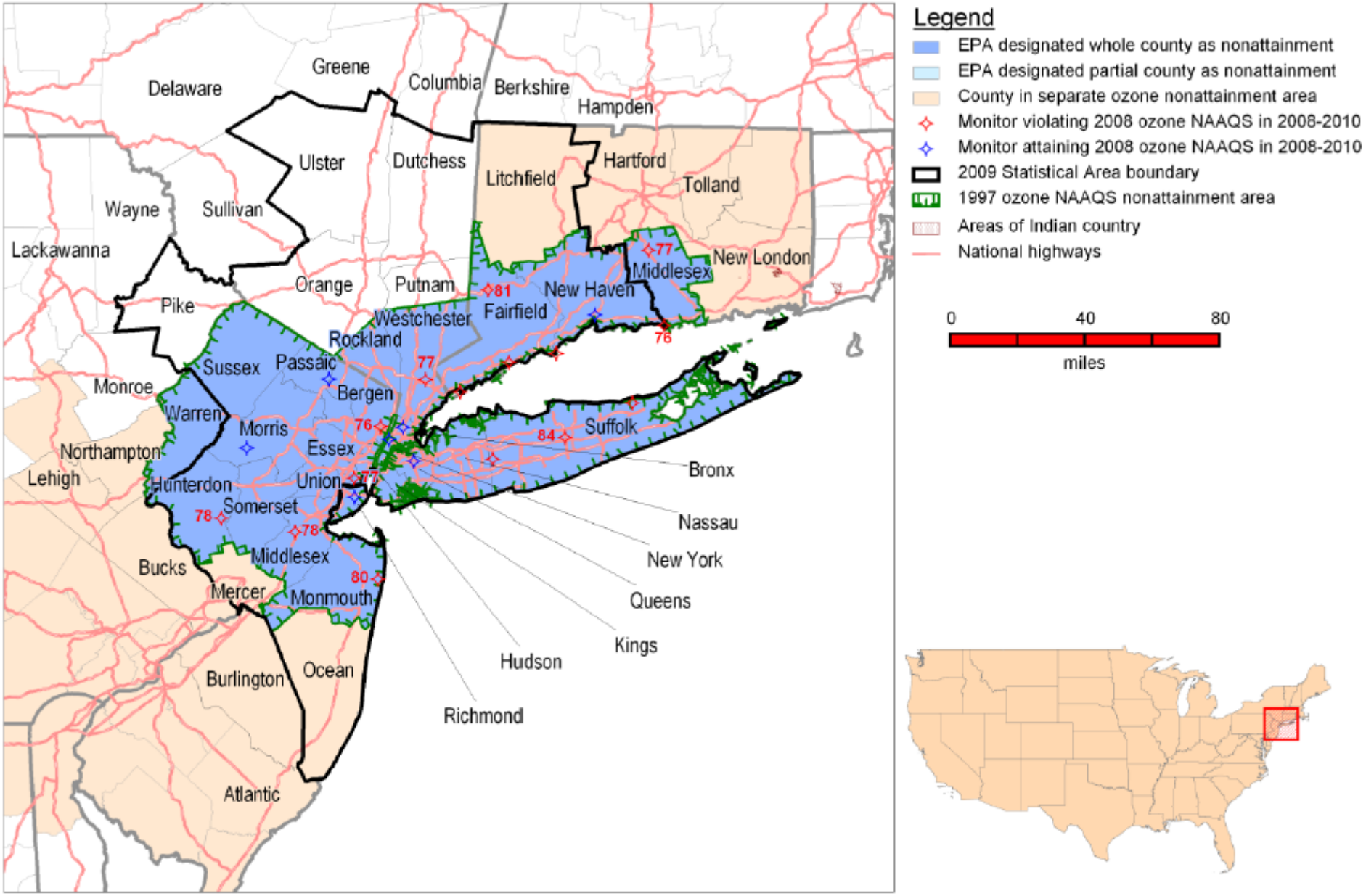




Temperature change from climatological norm



New York-N. New Jersey-Long Island, NY-NJ-CT Nonattainment Area



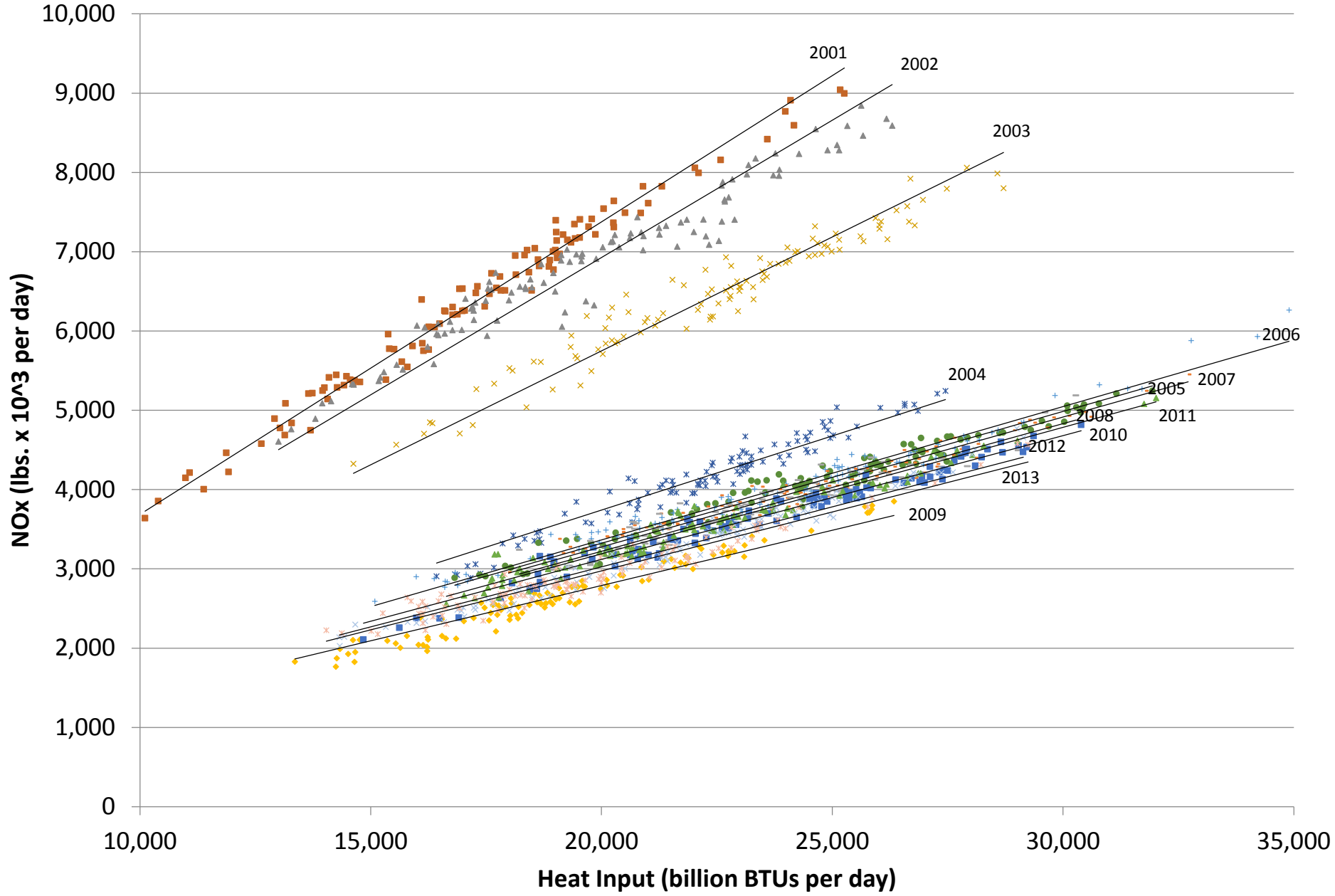
Ozone Contributors **to NY-NJ-CT**

State	County	2012 Base Case Ozone Avg Design Values	NJ	NY	PA	CT	VA	OH	MD	WV	KY	NC	DE
CT	Fairfield	81.1	12.1	18.4	7.5	2.5	2.3	2.4	1.5	1.7	0.8	0.3	0.3
	Fairfield	83.9	11.6	18.0	6.5	5.8	2.7	2.2	2.3	1.7	1.6	0.6	0.5
	Fairfield	82.9	10.5	20.4	7.6	3.3	2.9	2.3	1.9	2.0	1.6	0.7	0.6
	Fairfield	80.9	11.7	17.5	7.8	3.1	2.3	2.4	1.9	1.9	1.6	0.4	0.5
	Middlesex	80.9	6.8	15.0	8.6	9.6	3.3	4.3	2.3	3.0	2.5	0.7	0.5
	New Haven	72.8	8.0	15.2	7.3	5.6	3.5	3.3	2.2	2.7	2.2	0.8	0.5
	New Haven	82.7	10.4	18.9	8.3	4.5	4.5	3.3	2.7	2.2	1.5	1.4	0.7
NJ	Bergen	79.4	16.6	11.4	4.9	0.3	1.7	2.9	1.3	1.3	1.8	0.4	0.1
	Hunterdon	79.7	10.5	1.9	18.6	0.1	6.9	3.9	3.7	3.2	1.7	1.7	1.6
	Middlesex	79.2	15.6	2.4	13.8	0.2	3.2	2.0	3.1	1.6	1.7	0.3	1.3
	Monmouth	79.7	20.7	18.6	4.5	1.4	0.1	0.7	0.3	0.0	0.1	0.0	0.4
	Morris	74.7	13.6	4.8	13.4	0.6	4.1	3.1	2.5	2.2	2.0	1.1	0.8
	Passaic	73.4	15.6	11.5	8.2	1.4	2.1	2.2	1.5	1.4	0.3	0.3	0.2
NY	Bronx	68.1	12.5	9.2	7.9	0.4	3.3	1.7	2.2	1.2	0.2	0.3	0.5
	Bronx	70.0	11.0	13.5	6.1	0.5	2.3	1.9	1.3	1.1	0.2	0.3	0.2
	Queens	63.5	11.7	8.6	7.4	0.4	3.1	1.6	2.1	1.1	0.2	0.3	0.5
	Queens	73.7	13.6	14.1	6.5	0.6	2.7	1.5	1.5	1.0	0.2	0.4	0.5
	Suffolk	83.0	14.1	15.1	6.8	0.7	4.1	2.8	2.1	2.5	2.3	1.2	1.0
	Suffolk	77.9	9.5	16.5	7.6	0.8	5.3	3.4	3.1	2.7	1.6	1.5	0.9
	Suffolk	83.2	11.6	14.1	8.4	0.8	4.9	3.5	3.3	2.6	1.9	1.9	1.6
	Westchester	81.1	13.0	18.3	6.9	1.4	2.1	2.5	1.2	1.3	0.3	0.3	0.1

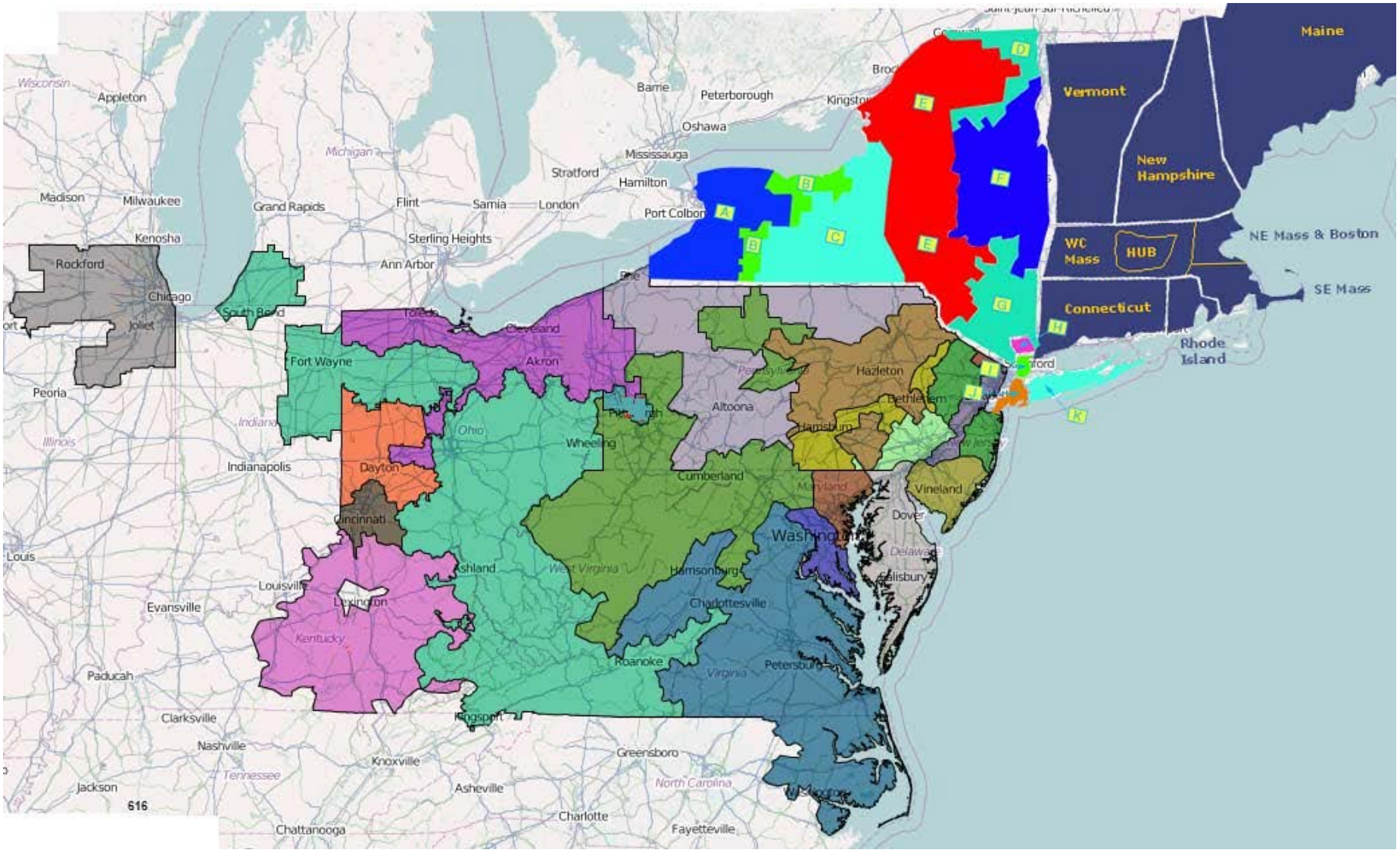
Source: TSD for the Final Clean Air Interstate Rule, EPA, March 2005.

Heat Input vs NOx lb./day

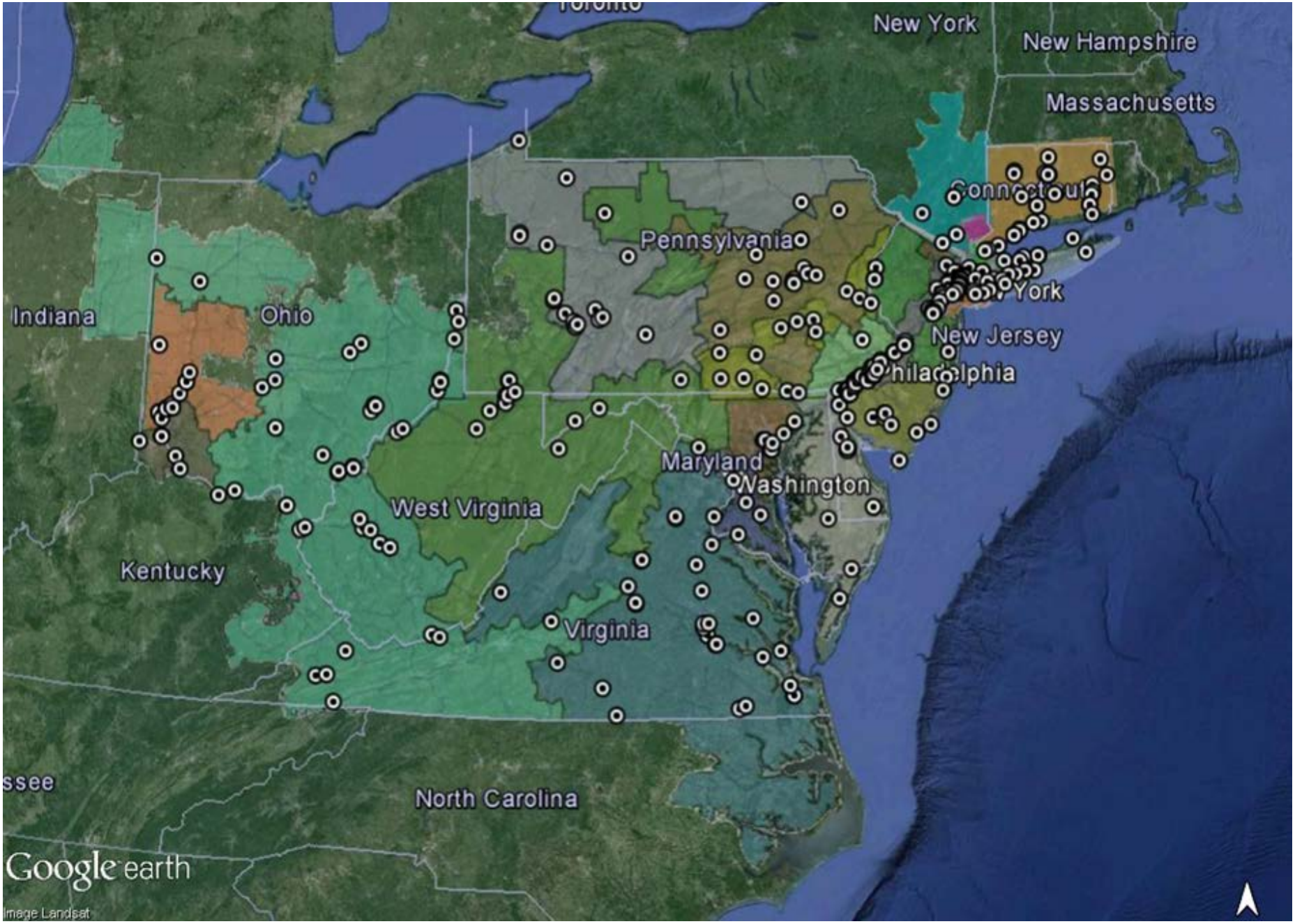
Ozone Season: Daily Sum of CT, DE, KY, MD, NC, NJ, NY, OH, PA, VA, & WV



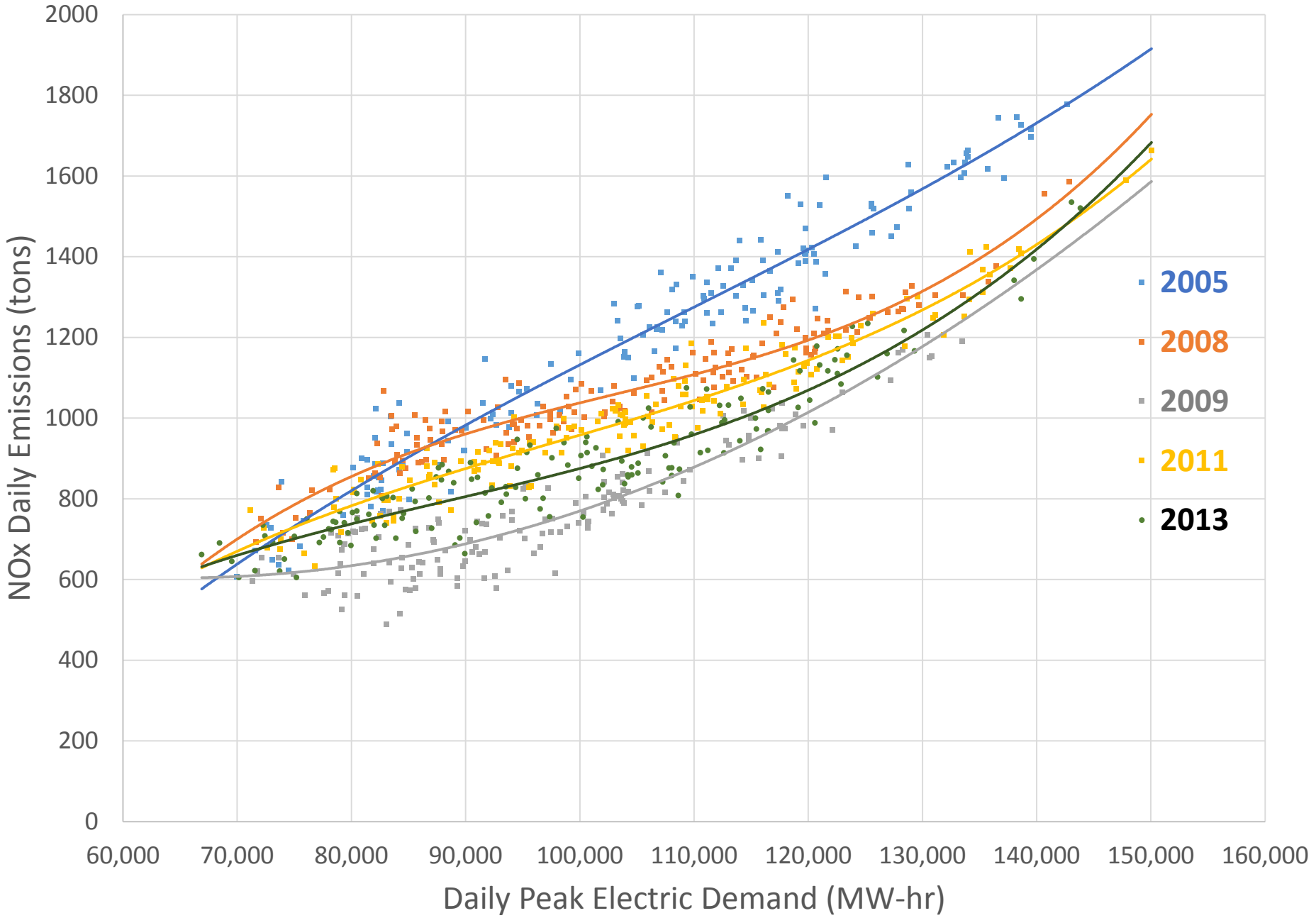
Electric Transmission Grid Zones



Map of EGUs with Corresponding Electric Grid Data



Ozone Season Daily NOx Emissions vs. Peak Electric Demand



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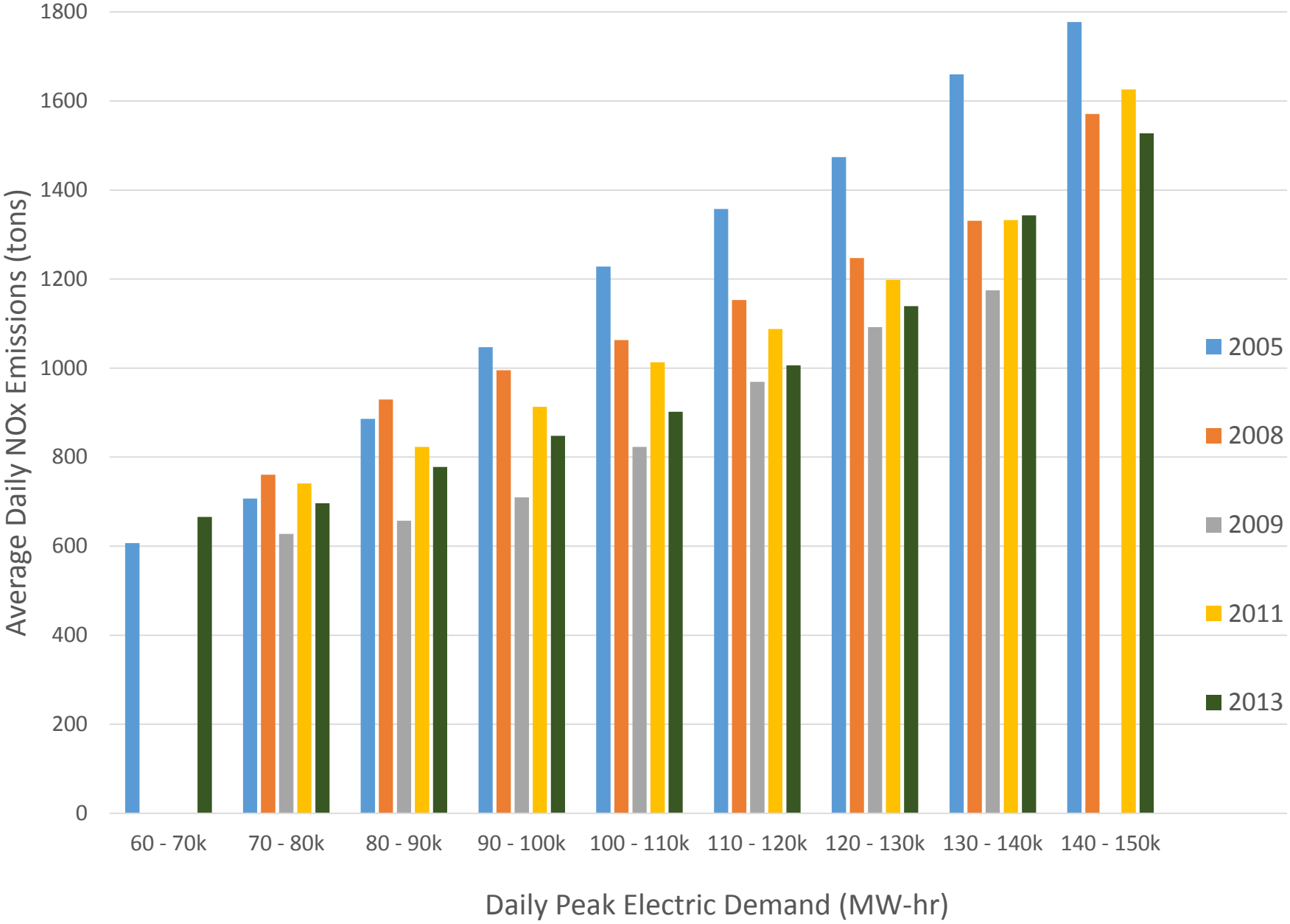
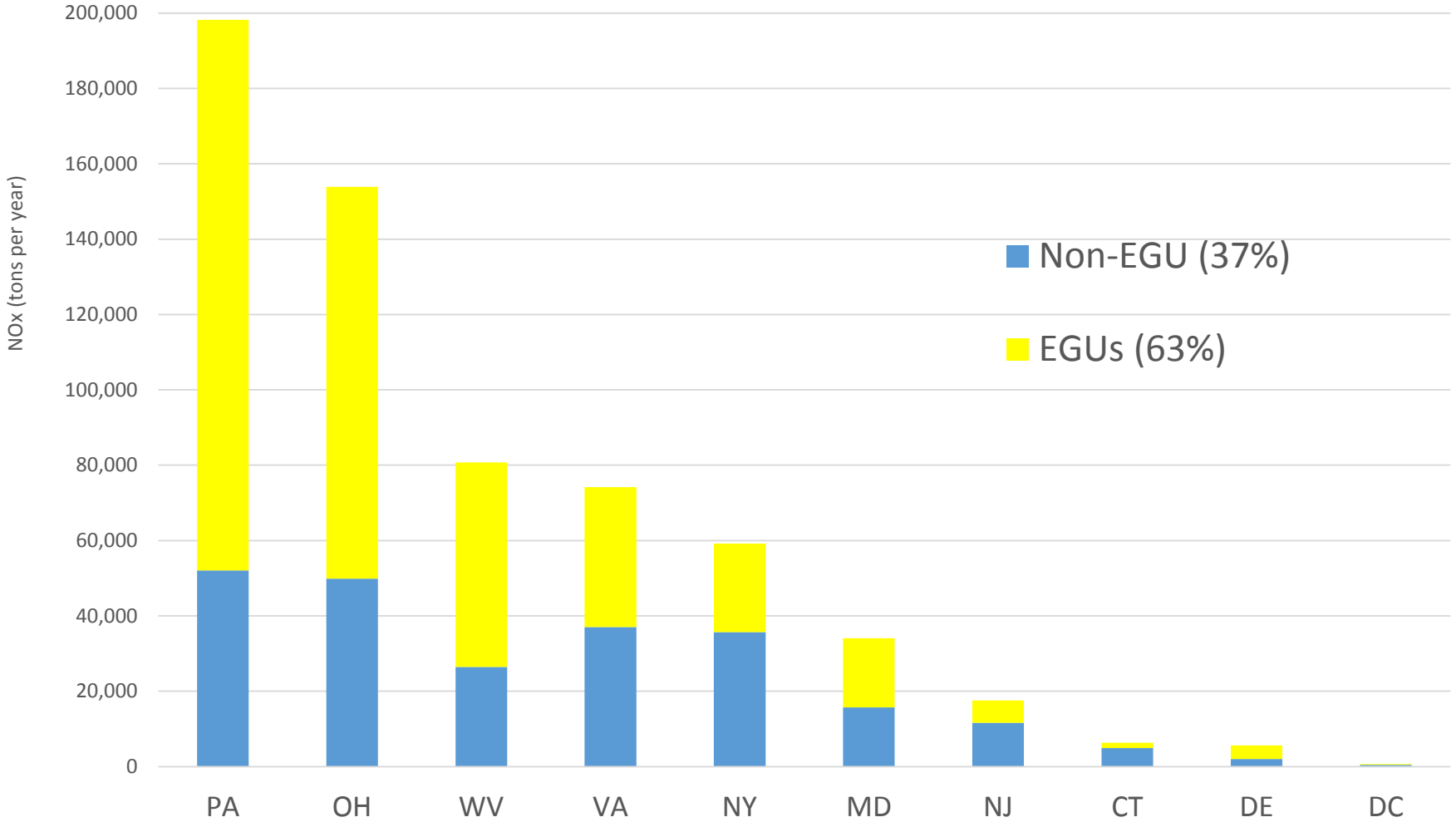


Other Stationary Sources



Annual Stationary NOx Emissions: NEI 2011, v2

Other Stationary Sources

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