Emissions Accounting and Planning in the Northeast

Allison Guerette
Climate and Energy Policy Analyst
Northeast States for Coordinated Air Use Management

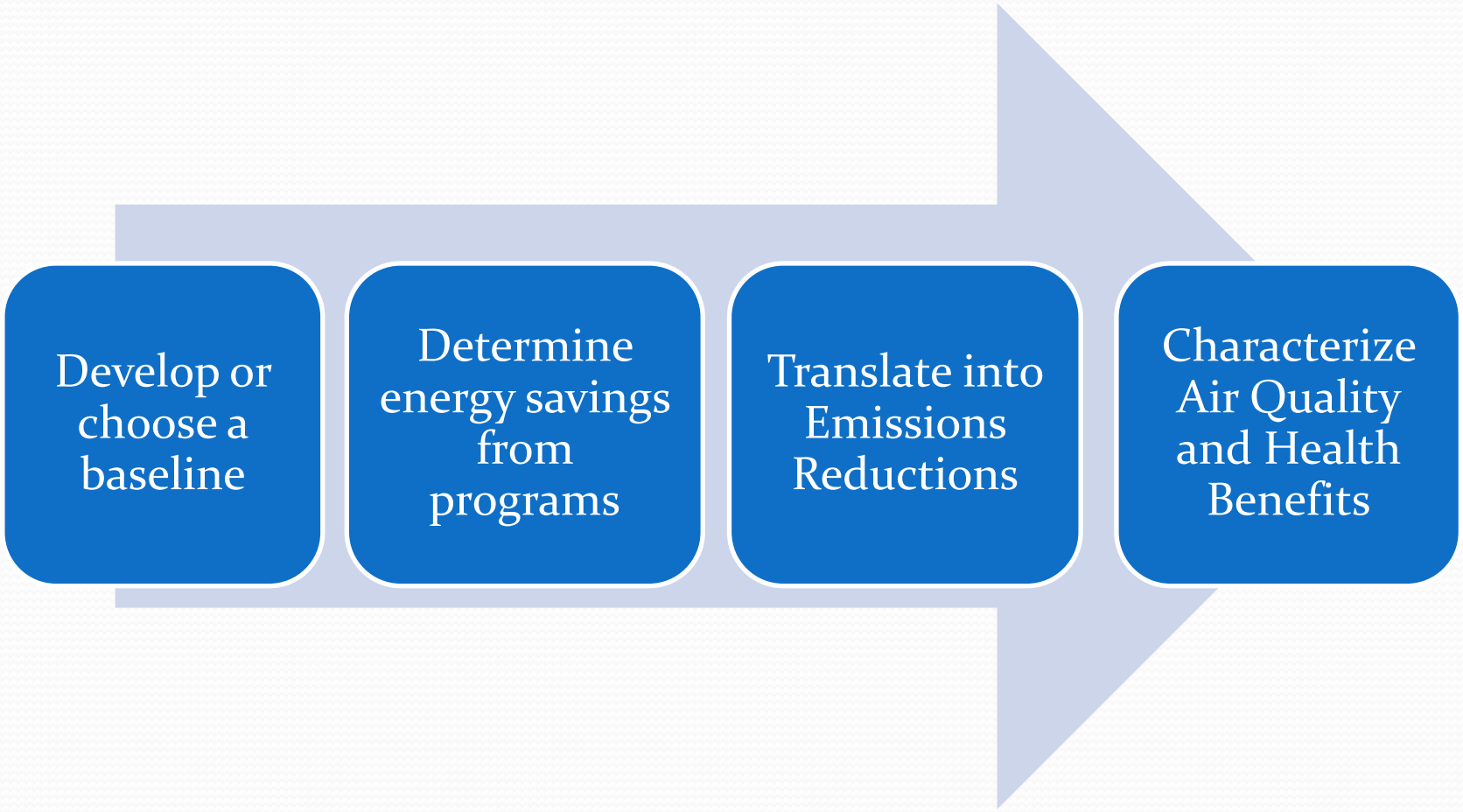
Contents

- How air quality planners/ regulators use energy information
- What air quality planners/ regulators need to know
  - Understanding baseline
  - Sometimes location of emissions matters
  - Sometimes timing of emissions matters
- State-ISO Dialogue
- Average and Marginal Emissions Rates
- Opportunities for integrated air-energy planning

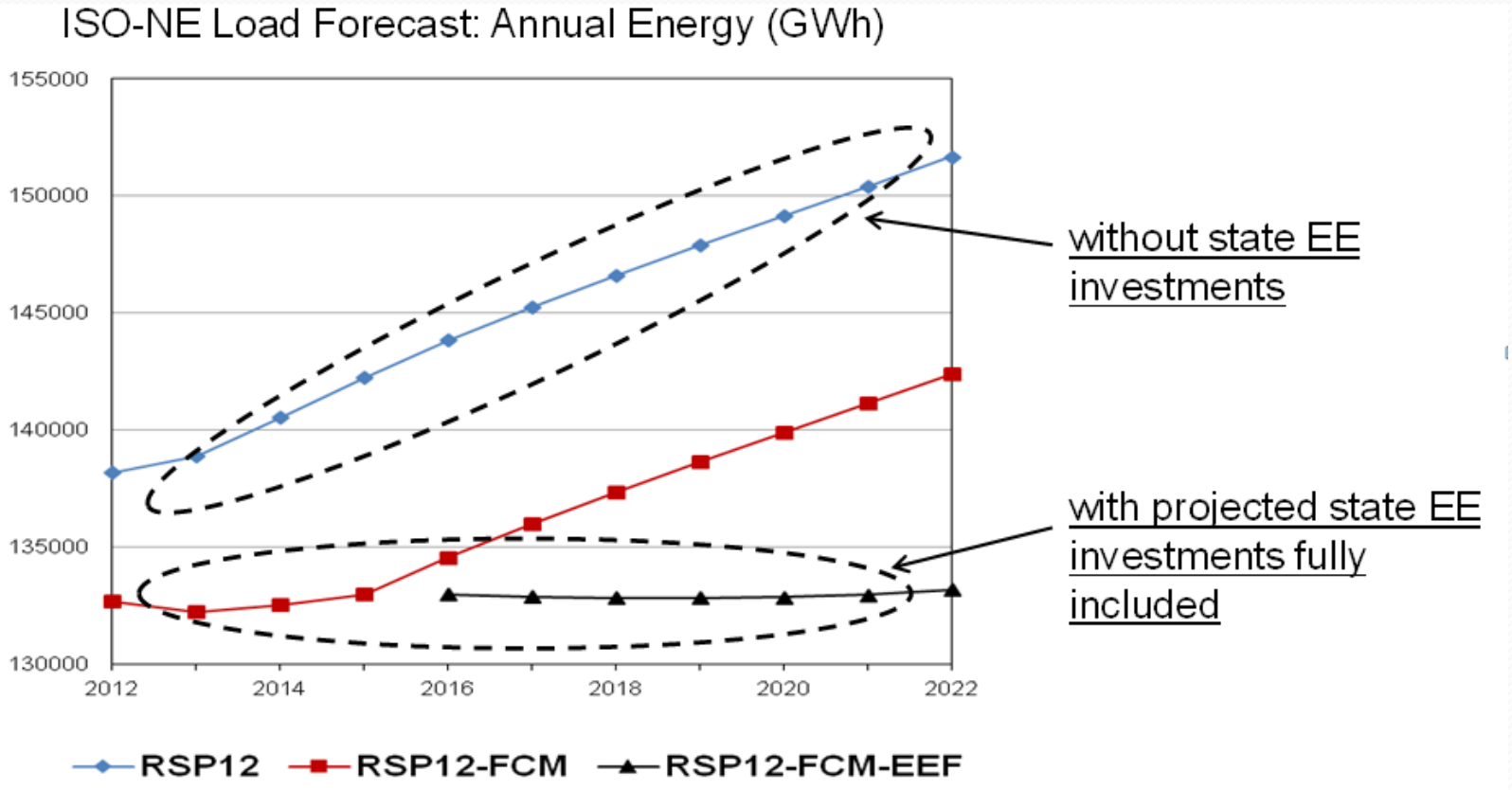
How Air Quality Planners Use Energy Information

- For public health - criteria pollutant planning and regulation in accordance with National Ambient Air Quality Standards (NAAQS)
- For greenhouse gas (GHG) planning – setting state targets, analyzing programs, and writing climate plans
- In the future- for complying with the Clean Power Plan (111(d))

What air quality planners need to know



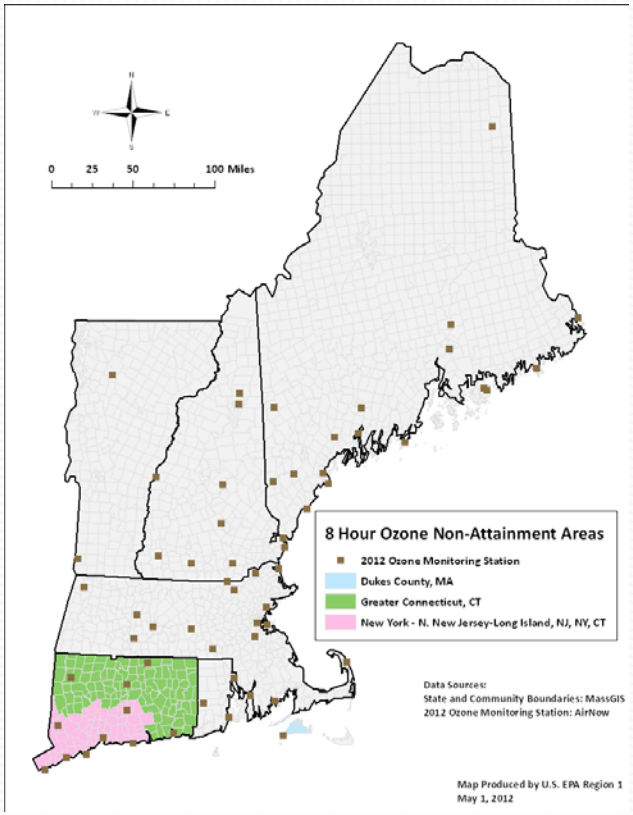
Understanding baseline



Source: ISO-NE Final 2013 EE Forecast, 3/21/13. The red line includes only EE reflected in the three-year-ahead forward capacity market.

Location of criteria pollutant emissions matters

Some Clean Air Act (CAA) provisions require that emissions reductions occur within the nonattainment area, which are typically comprised of several counties.



A tightened ozone standard may lead to an increase in the number of nonattainment areas.

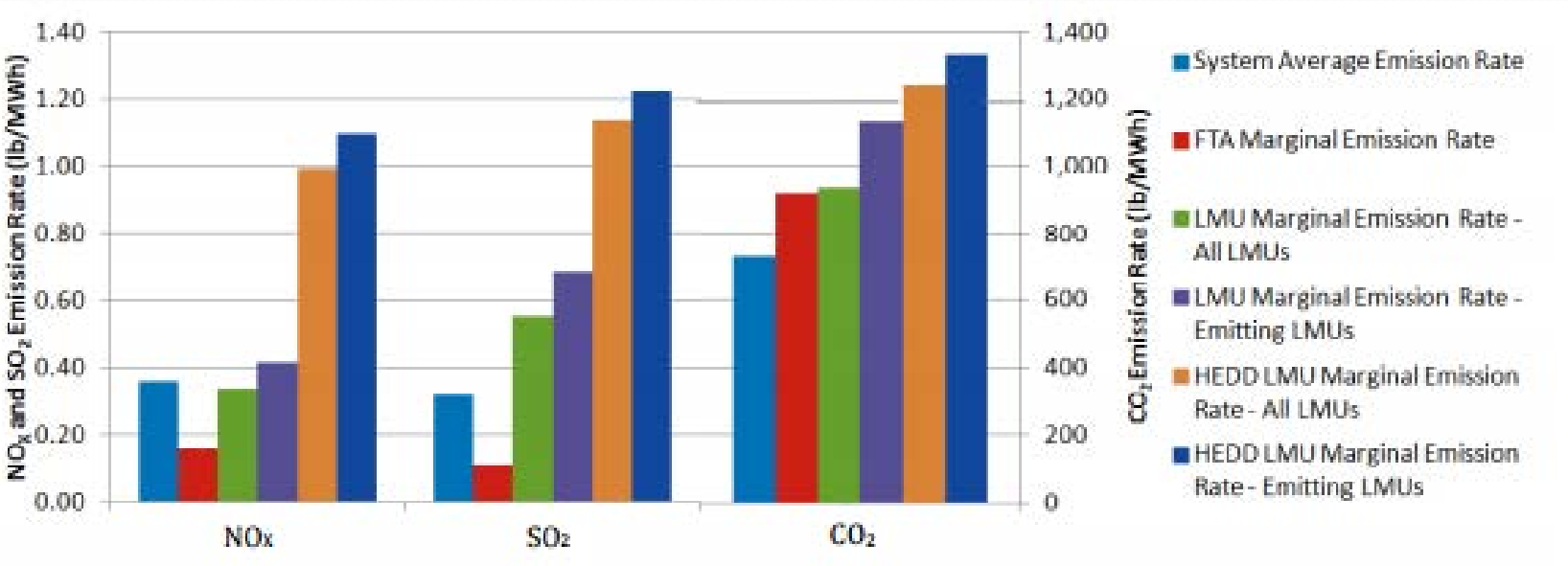
Timing of criteria pollutant emissions matters

- Historically, air quality plans have focused on emission reductions that occur on a typical summer day (Jun-Jul-Aug), or during the 5 month ozone season (May-Sep).

- States are now focused on addressing emissions that occur on high electric demand days (HEDDs).

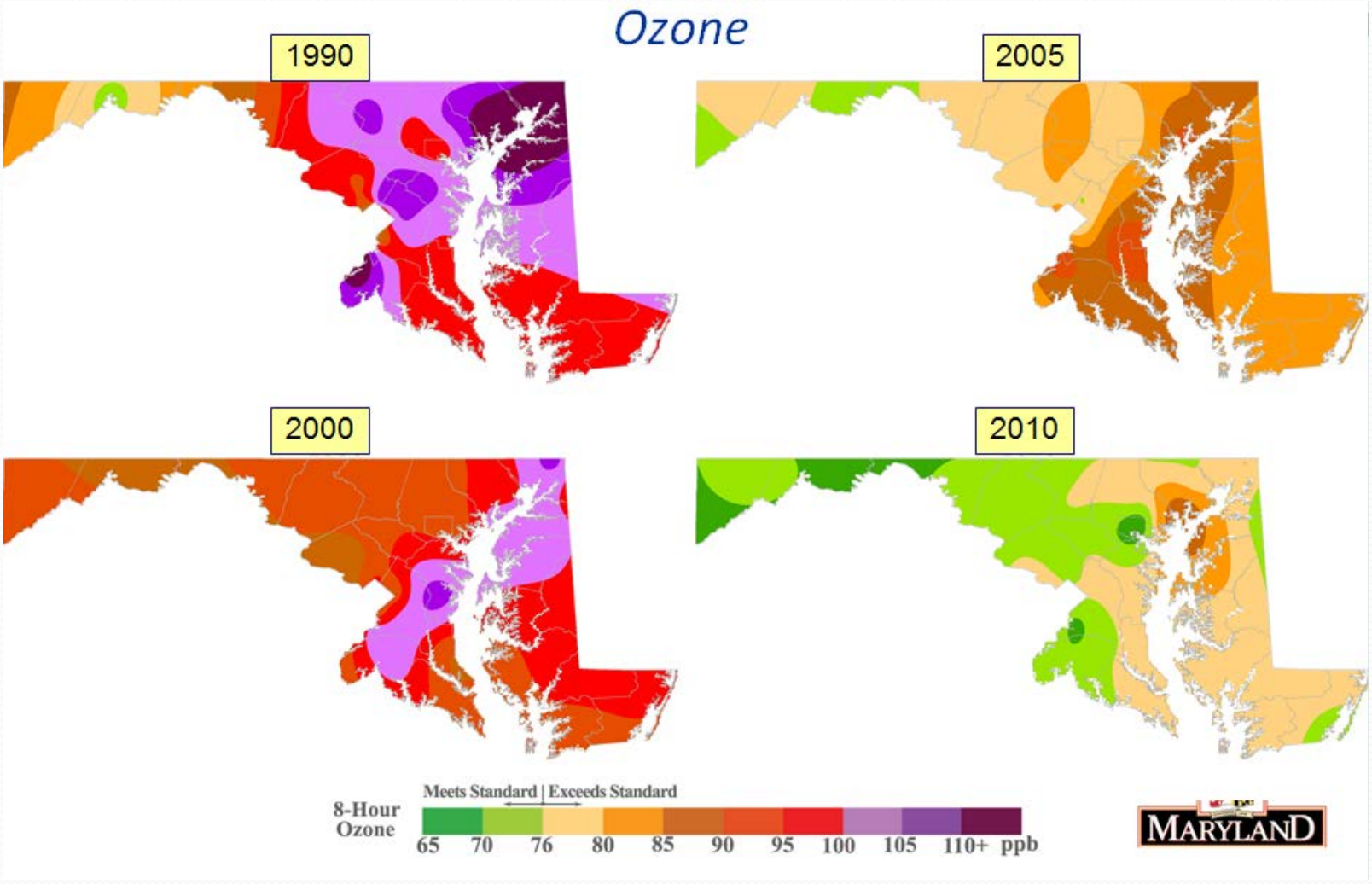
Timing and location also matter when accounting for emissions impacts of energy programs

Comparison of 2013 New England Emission Rates (lb/MWh)



Source: ISO-NE (2014). 2013 ISO New England Electric Generator Air Emissions Report.

Timing and location also matter when accounting for emissions impacts of energy programs

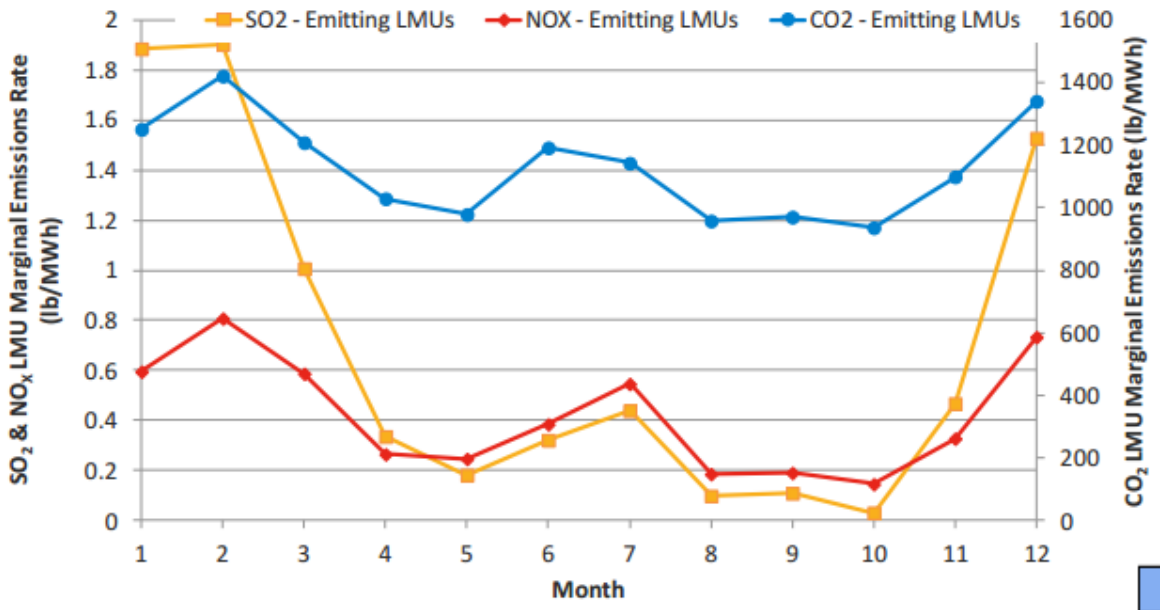


Northeast and Mid-Atlantic States working with ISOs/RTOS

- State-ISO Dialogue began in Spring 2013
- Funded by the NESCAUM states
- Participants include air regulators from Northeast and mid-Atlantic states, EPA regional offices, Ozone Transport Commission, ISO-New England (ISO-NE), New York ISO (NY ISO), and PJM Interconnection (PJM)
- Results! States have a better understanding of available data from ISOs/RTOs, and ISOs/RTOs have provided additional information requested by the states

2013 Emissions rates in ISO-NE

2013 Monthly LMU Marginal Emission Rates in ISO-NE – Emitting LMUs (lb/MWh)



Annual Average NOX, SO_2, and CO_2 Emission Rates (lb/MWh)

State	NO_x	SO_2	CO_2
Connecticut	0.25	0.09	552
Maine	0.41	0.27	917
Massachusetts	0.54	0.69	996
New Hampshire	0.37	0.34	602
Rhode Island	0.18	0.01	918
Vermont	0.12	0.01	239
New England	0.36	0.32	730

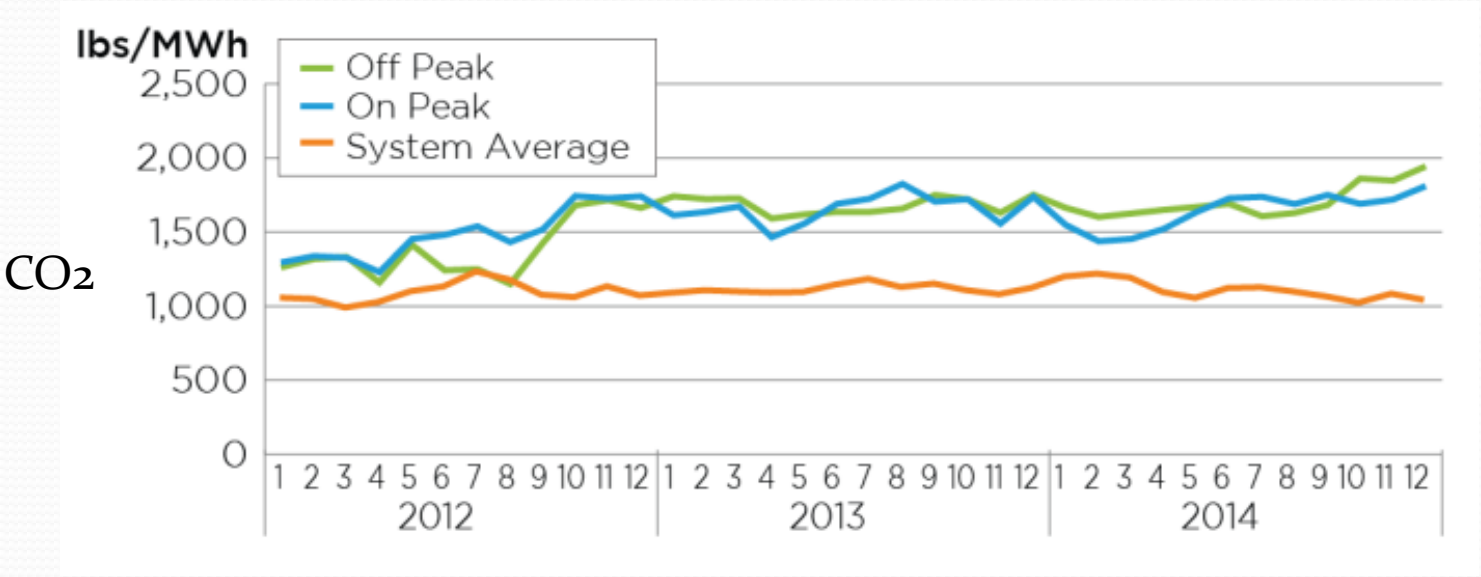
Annual Average NOX, SO_2, and CO_2 Emission Rates (lb/MWh)

HEDD LMU Marginal Emission Rate (lb/MWh)			
	All LMUs	Emitting LMUs	O&NG LMUs
NO_x	0.99	1.10	0.91
SO_2	1.13	1.22	0.94
CO_2	1,239	1,328	1,172

Source: ISO-NE (2014). 2013 ISO New England Electric Generator Air Emissions Report.

2012-2014 Emissions rates in PJM

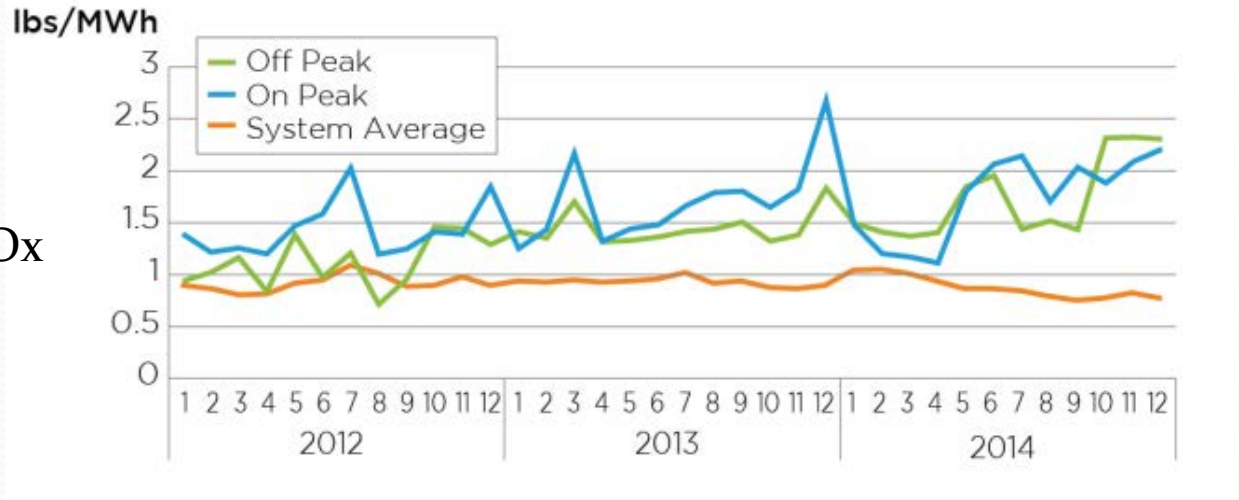
2012-2014 Marginal and Average CO_2 Emission Rates in PJM



Source: PJM (2015). 2012-2014 CO_2, SO_2 and NOX Emission Rates.

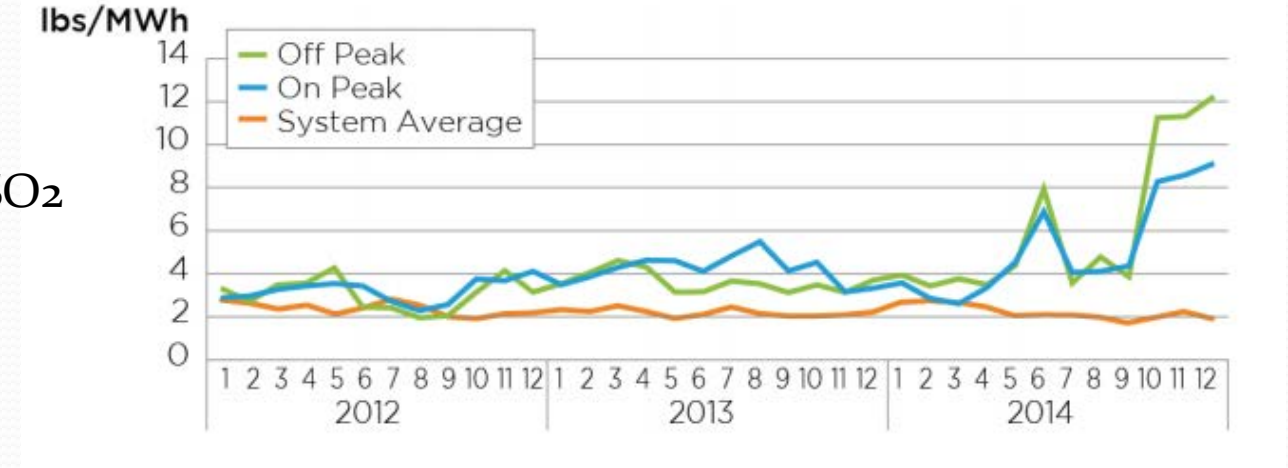
2012-2014 Marginal and Average NOx Emission Rates in PJM

NOx



2012-2014 Marginal and Average SO2 Emission Rates in PJM

SO2



Source: PJM (2015). 2012-2014 CO2, SO2 and NOX Emission Rates.

Opportunities for Integrated Air-Energy Planning

- State EE investments are increasing.
- State energy offices doing integrated resource planning.
- State air regulators taking credit for EE/RE for NAAQS attainment and maintenance using EPA's *Roadmap for Incorporating EE/RE in State Implementation Plans (SIPs)*.
- States coordinating internally and with neighboring states to reach climate goals and comply with the Clean Power Plan.
- State programming underway to electrify fleets.
- More quantification tools are becoming available.

Contact Information

Allison Guerette
Climate and Energy Policy Analyst
Northeast States for Coordinated Air Use Management (NESCAUM)

617-259-2012
aguerette@nescaum.org