EPA CROSS-STATE AIR POLLUTION RULE (CSAPR)
What’s happening?

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CSAPR

- Promulgated July 2011 Under Good Neighbor Provisions of CAA
- 28 States to Reduce Power Plant Emissions
- Emissions Cross State Lines Contribute to O₃ (1997 NAAQS) and Fine Particle (2006 NAAQS) Pollution
- Three separate cap-and-trade programs
  - NOₓ O₃ Season
  - NOₓ Annual
  - SO₂ Annual
CSAPR

- D.C. District Court
  - December 30, 2011 stayed CSAPR
  - August 21, 2012 vacated CSAPR (split 3-judge panel)
- U.S. Supreme Court Reviewed District Court’s Decision December 10, 2013
- Supreme Court Decision Expected Second Half 2014
CSAPR States

- States controlled for both fine particles (annual SO₂ and NOₓ) and ozone (ozone season NOₓ) (20 States)
- States controlled for fine particles only (annual SO₂ and NOₓ) (3 States)
- States controlled for ozone only (ozone season NOₓ) (5 States)
- States not covered by the Cross-State Air Pollution Rule
Upwind-Downwind Linkages in CSAPR States

This map shows the Cross-State Air Pollution Rule “linkages” between states where pollution from upwind states is linked to one or more areas in downwind states that have problems attaining or maintaining the 1997 ozone National Ambient Air Quality Standards (NAAQS), 1997 annual PM$_{2.5}$ NAAQS, and the 2006 24-hour PM$_{2.5}$ NAAQS. For states to be “linked” on this map, two things must occur:

1. The downwind state must have at least one nonattainment or maintenance area for these NAAQS; and,
2. Sources in the upwind state must emit enough SO$_2$ or NO$_x$ pollution to affect air quality in that area at or above the threshold level set by EPA.

Legend

- States controlled for both fine particles (annual SO$_2$ and NO$_x$) and ozone (ozone season NO$_x$) (20 States)
- States controlled for fine particles only (annual SO$_2$ and NO$_x$) (3 States)
- States controlled for ozone only (ozone season NO$_x$) (5 States)
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Key to Arrows

- Upwind-Downwind Linkage for Ozone
- Upwind-Downwind Linkage for Annual PM$_{2.5}$
- Upwind-Downwind Linkage for Daily PM$_{2.5}$
Ramifications of Supreme Court decision

- Do we need CSAPR?
- Confusion and chaos?
- SO$_2$ and NO$_x$ emission reductions will already have been achieved through CAIR, ARP, and other emission reduction programs for eastern U.S., although with some state-by-state differences
- Effect of New NAAQS?
- BART and SIPs
EMISSION BUDGETS UNDER CSAPR AND CAIR

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<th>CAIR</th>
<th>CSAPR</th>
<th>2012 Actual</th>
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<tr>
<td><strong>ANNUAL SO$_2$</strong></td>
<td>3.25</td>
<td>3.24</td>
<td>3.3</td>
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<tr>
<td><strong>ANNUAL NO$_x$</strong></td>
<td>1.33</td>
<td>1.16</td>
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<td><strong>O$_3$ SEASON NO$_x$</strong></td>
<td>0.56</td>
<td>0.49</td>
<td>0.51</td>
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CASTNET Sites Operational During 2012
Trends in SO₂ Emissions

Note: For CAIR units not in the ARP, the 2009 annual SO₂ emissions were applied retroactively for each pre-CAIR year following the year in which the unit began operating.

Source: EPA, 2013
State-by-State Annual SO₂ Emission Levels for CAIR and ARP Sources, 1990-2012

Source: EPA, 2013
Trends in Annual Mean SO₂ Concentrations (µg/m³)
Trends in NO$_x$ Emissions

Note: For CAIR units not in the ARP in 1990, 2000, and 2005, the 2008 annual NO$_x$ emissions were applied retroactively for each pre-CAIR year following the year in which the unit began operating.
Source: EPA, 2013
Annual NO$_x$ Emissions

Source: EPA, 2013

SO$_2$ and NO$_x$ Emissions, Compliance, and Market Analyses
Trends in Annual Mean Total NO$_3$ Concentrations ($\mu$g/m$^3$)
## TRENDS IN AIR QUALITY AT ABINGTON, CT

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<tr>
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<th>1990-92</th>
<th>2010-12</th>
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<tr>
<td>SO₂ (µg/m³)</td>
<td>8.9</td>
<td>2.1</td>
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<tr>
<td>Total NO₃ (µg/m³)</td>
<td>3.0</td>
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<td>O₃ (ppb)</td>
<td>98</td>
<td>75</td>
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Trend in Ozone Aggregated over 34 Eastern Sites

Trend in Average of Fourth Highest Daily Maximum Rolling 8-hour Averages for Reference Sites (as of 09/30/13)
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