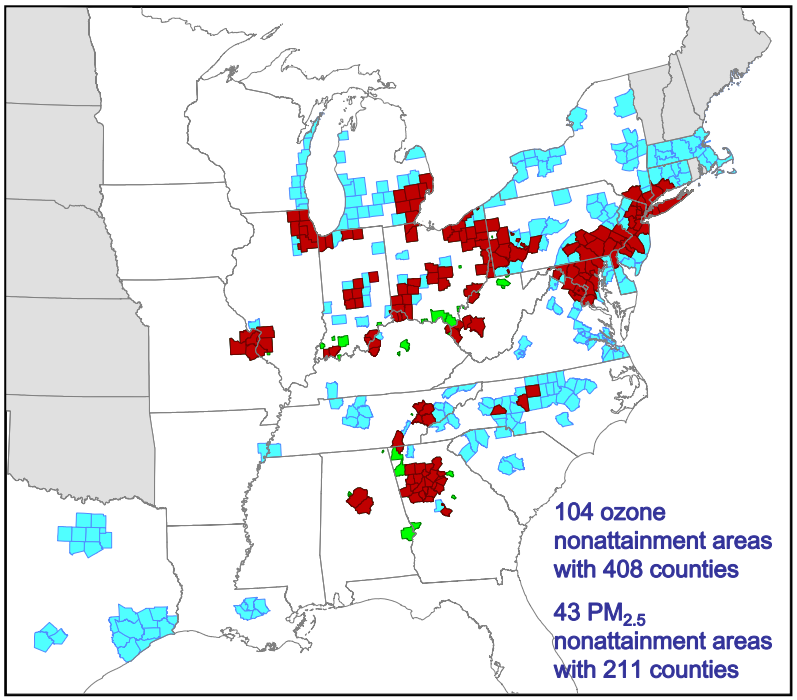
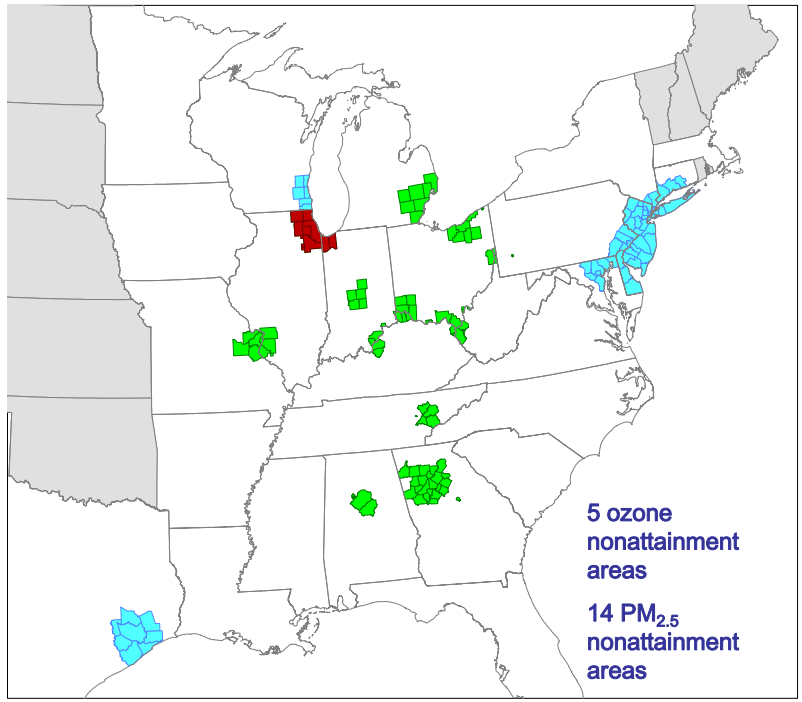
Figure 1: Ozone and Particle Pollution: CAIR, together with other Clean Air Programs, Will Bring Cleaner Air to Areas in the East - 2015

Ozone and Fine Particle Nonattainment Areas (March 2005)



Projected Nonattainment Areas in 2015 after Reductions from CAIR and Existing Clean Air Act Programs

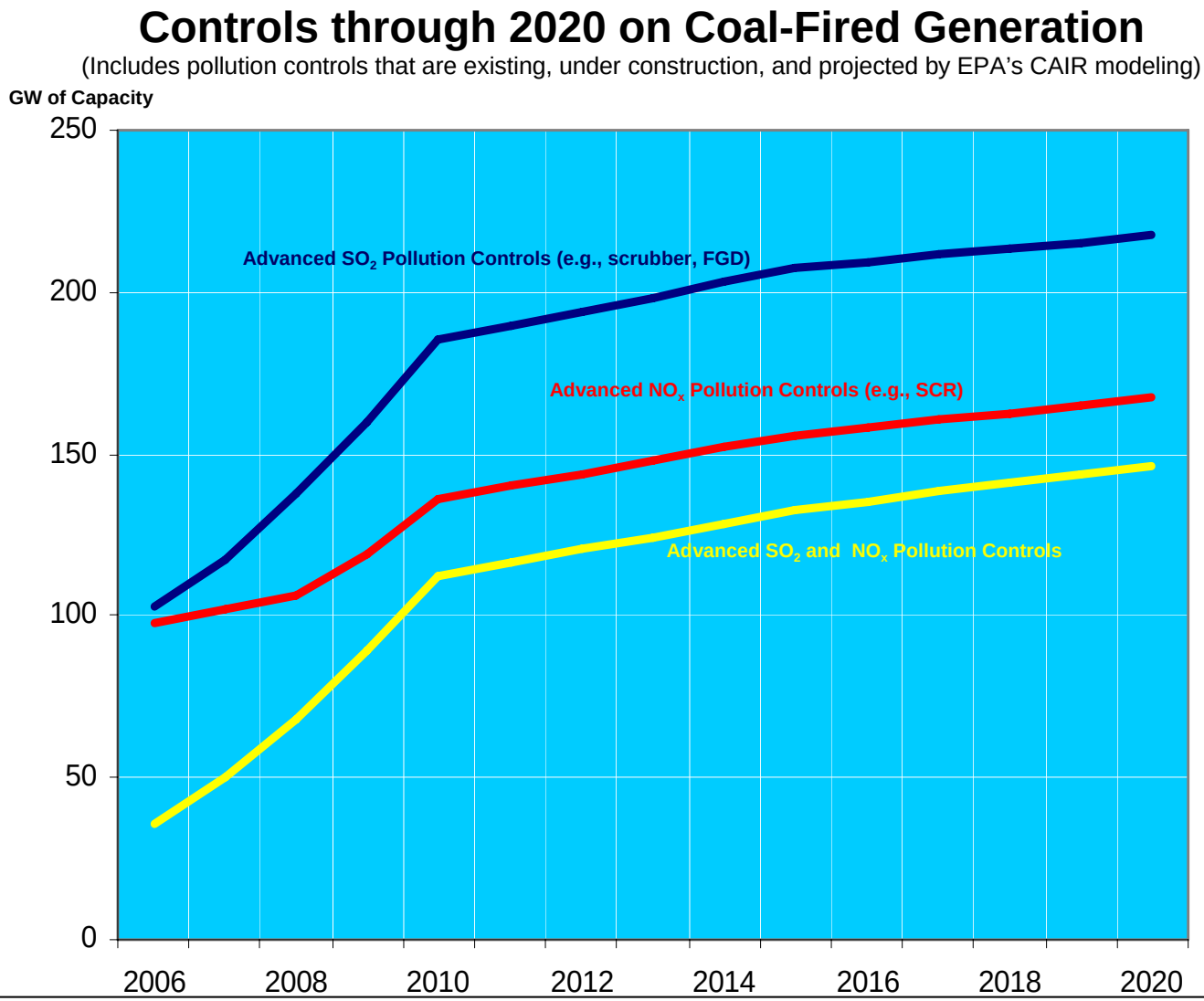


Nonattainment areas for 8-hour ozone pollution only

Nonattainment areas for fine particle pollution only

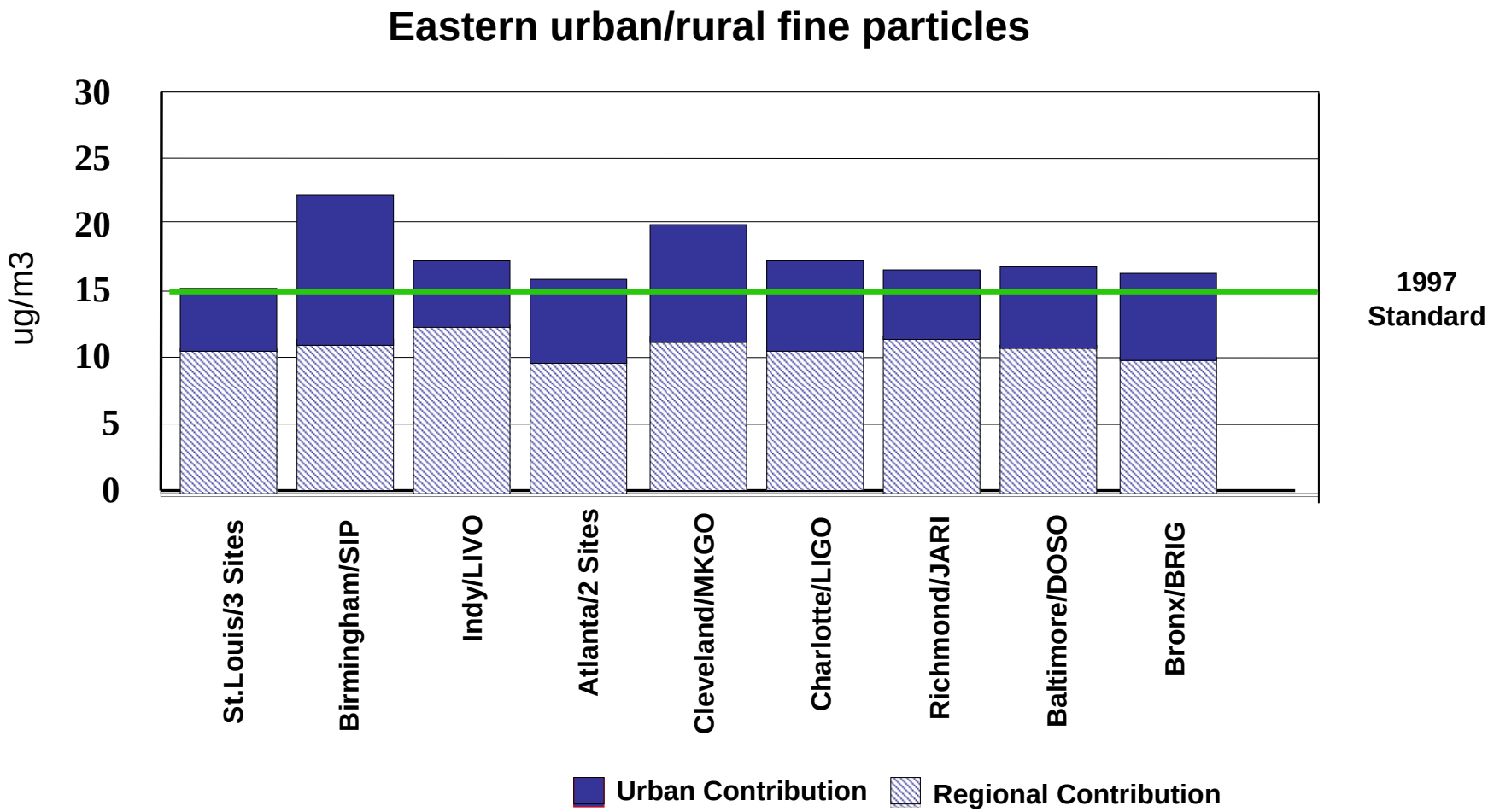
Nonattainment areas for both 8-hour ozone and fine particle pollution

Figure 2: Advanced Pollution Controls for SO_2 and NO_x with CAIR



Advanced controls are required by NSR and New Source Performance Standards for new generating units; the graph does not include the controls on those projected new units. While the vast majority of the control installations reflected in the graph are attributable to CAIR, some are also required in the future under binding NSR settlements or state programs. In addition to the installation of advanced controls, utilities would be using other compliance strategies such as fuel switching to lower sulfur coal and upgrading existing control technologies to provide more emission reductions.

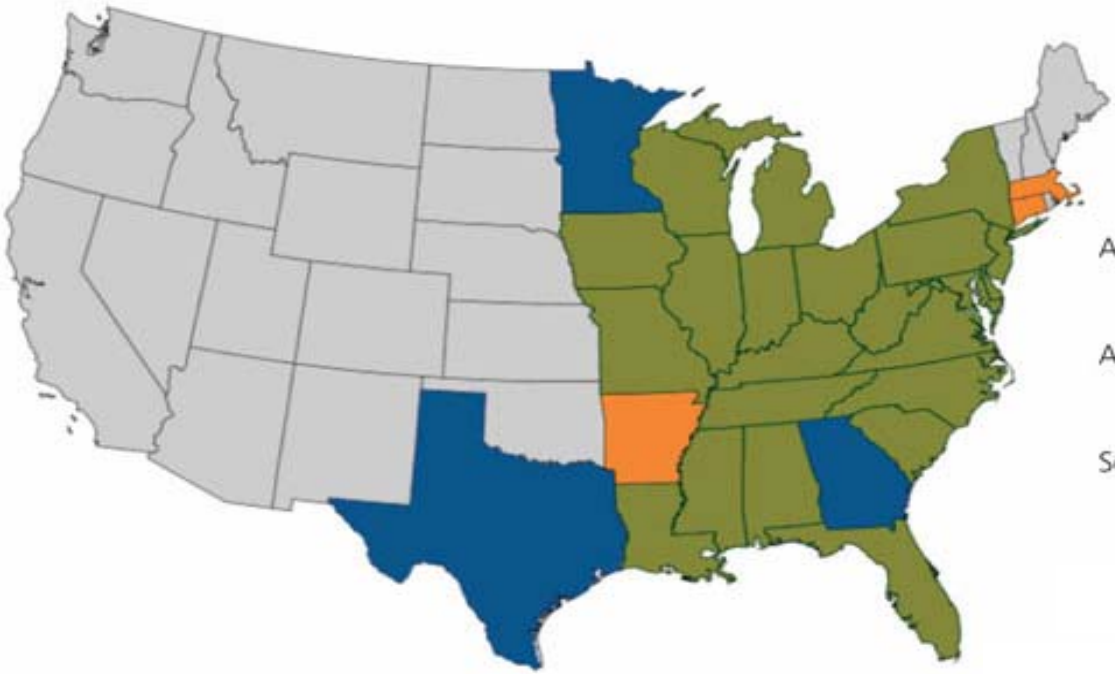
Figure 3: The Transport Factor



12-month average PM2.5 mass from speciation samplers

Reference: 2002 EPA Trends Report http://www.epa.gov/air/airtrends/chem_spec_of_pm2.5_b.pdf

Figure 4: States Covered in the Clean Air Interstate Rule for SO_2 and NO_x and the Region-wide Caps



CAIR Emission Caps*
(million tons)

	2009/2010	2015
Annual SO_2 *(2010)*	3.7	2.6
Annual NO_x *(2009)*	1.5	1.3
Seasonal NO_x *(2009)*	0.6	0.5

**for the affected regions*

- States controlled for fine particles (annual SO_2 and NO_x)
- States controlled for ozone (ozone season NO_x)
- States controlled for both fine particles (annual SO_2 and NO_x) and ozone (ozone season NO_x)

Source: EPA, 2007

CLEAN AIR MARKET PROGRAMS

Figure 5: CAIR Health and Environmental Benefits: Benefits over 25 Times Greater than Costs

Annual Health and Welfare Benefits and Costs of CAIR*		
Health Related Incidences Avoided (PM2.5,Ozone)	2010	2015
Premature deaths avoided	13,000	17,000
Non-fatal heart attacks avoided	17,000	22,000
Hospital admissions/ER visits avoided	19,000	27,000
Work loss days	1.4 million	1.7 million
School absence days	180,000	510,000
Monetary Value of Total Health Benefits (Billion 1999$)	$62.6-$73.3	$86.3-$101
Monetary Value of Visibility Improvements	More than $1 billion	Almost $2 billion
Annual Costs of CAIR Implementation (Billion 1999$)	$2.36	$3.57

- Additional non-monetizable health, environmental benefits, and changes in risk include:
  - Decreases in sulfur deposition (resulting in reduced acidification of surface waters and damage to forest ecosystems and soils)
  - Decreases in nitrogen deposition (resulting in reduced acidification of surface waters, damage to forest ecosystems and soils, and coastal eutrophication)
  - Exposure to mercury through eating fish containing mercury
  - Decreases in ozone-related damage to agriculture
- CAIR implementation beyond 2015 leads to higher annual benefits and costs

*Note: The annual health and welfare benefits and costs shown for 2010 and 2015 were taken from the Clean Air Interstate Rule Regulatory Impact Analysis (RIA) published in March of 2005 (http://www.epa.gov/cair/pdfs/finaltech08.pdf).