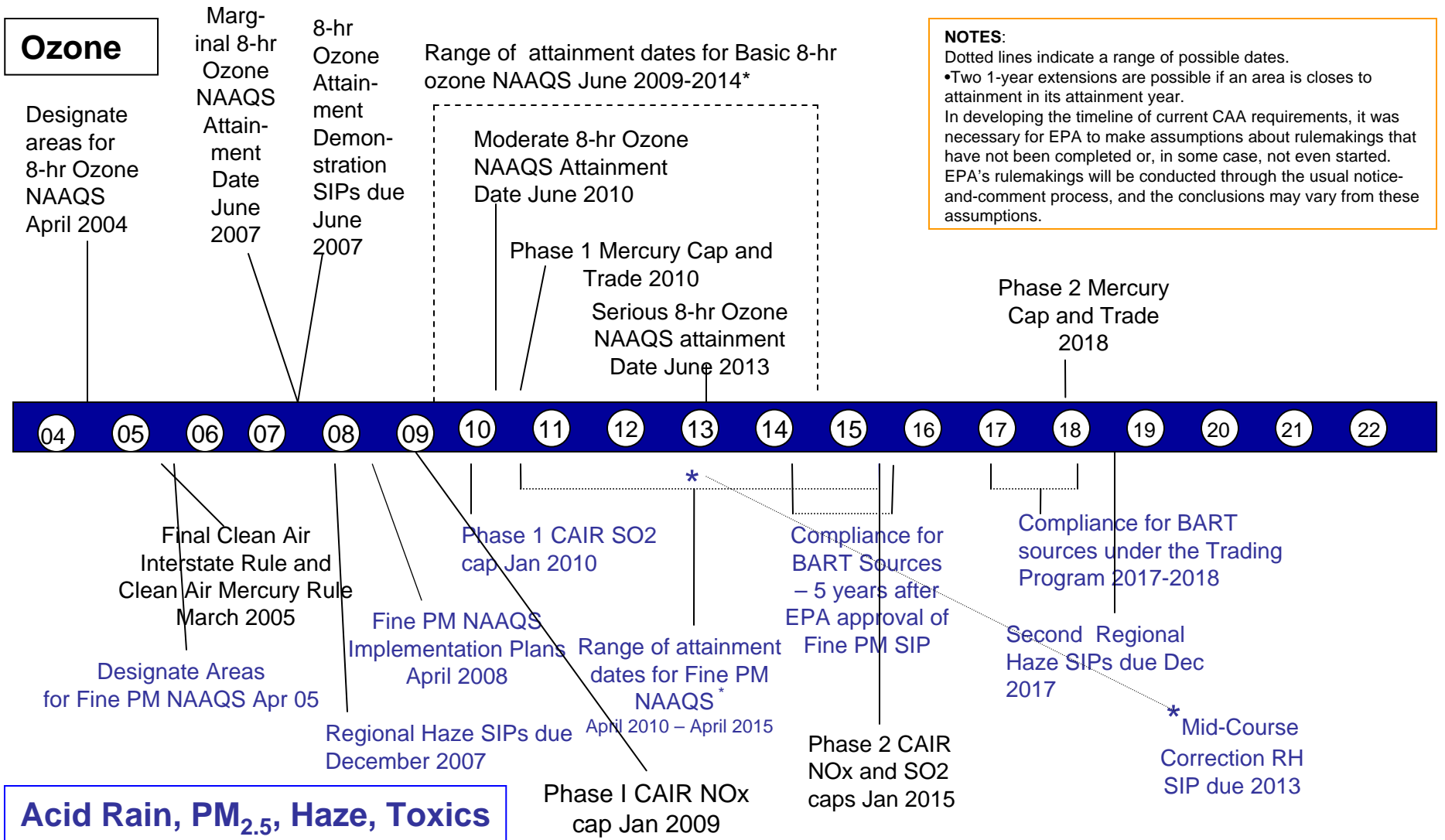




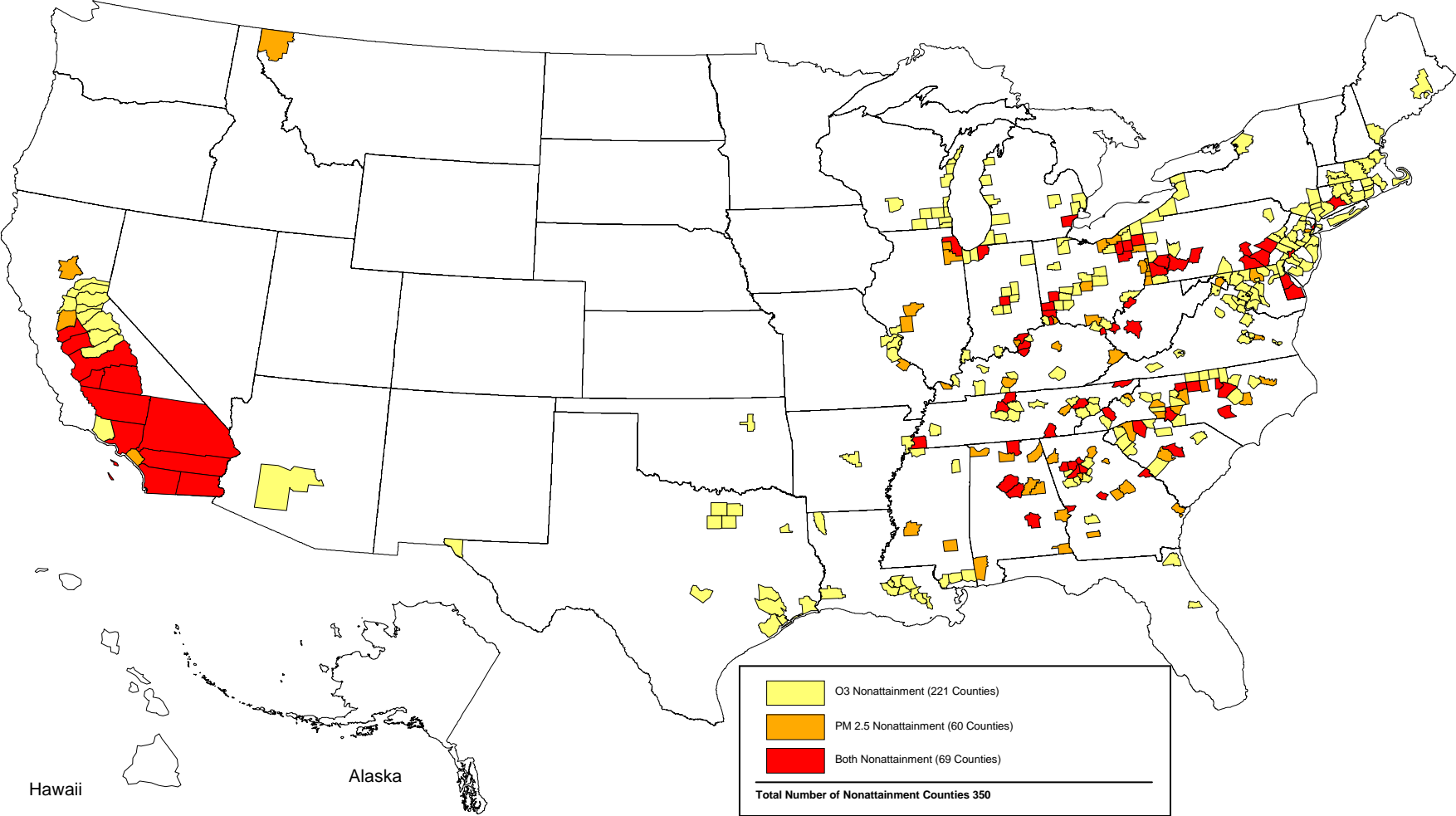
Jeff Holmstead
Assistant Administrator
U.S. Environmental Protection Agency
May 26, 2005

Power Plants Face a Complex Set of Requirements Under The Current Clean Air Act

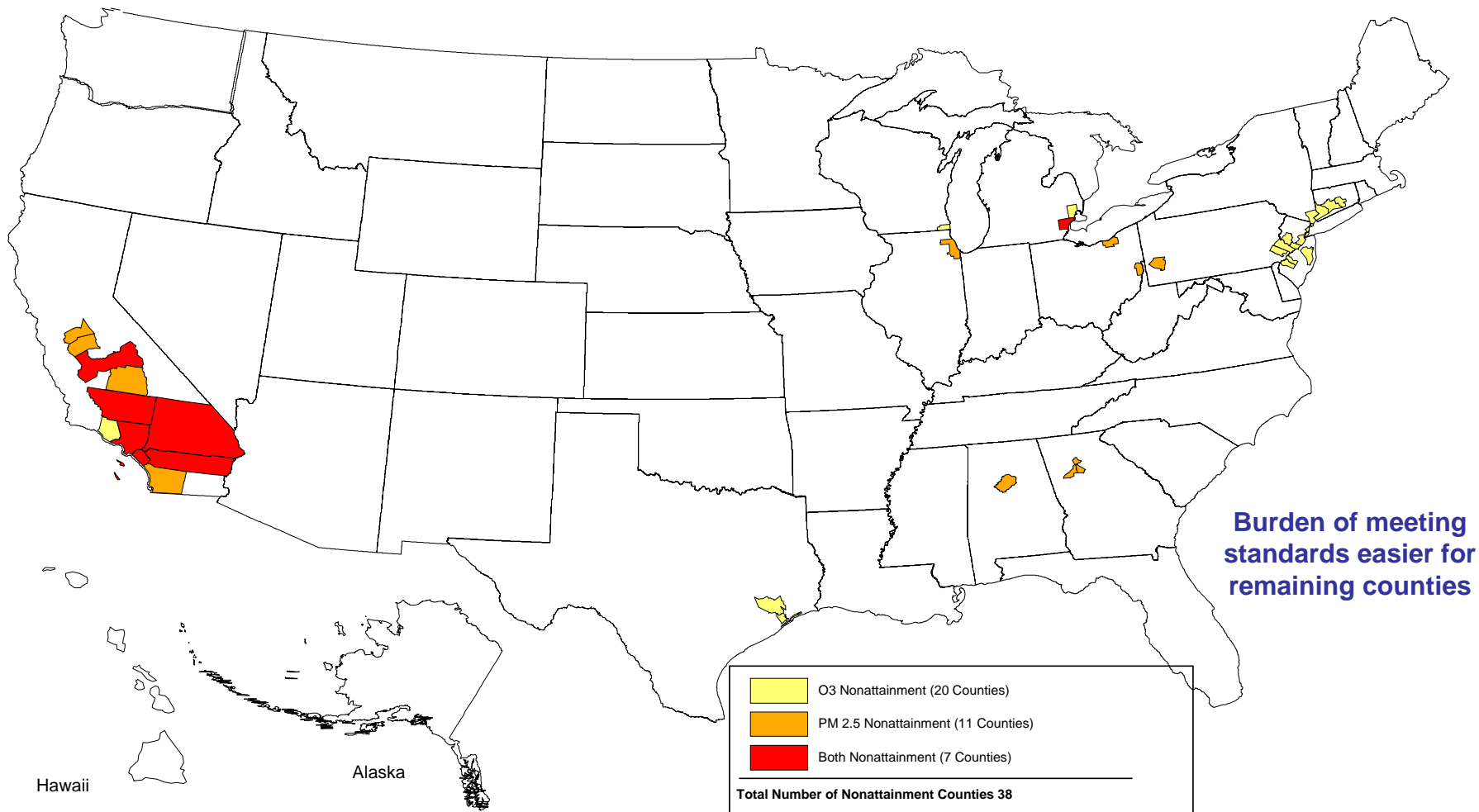
NSR Permits for new sources & modifications that increase emissions



350 Monitored Counties must meet New Air Quality Standards for Ozone and Fine Particles.*

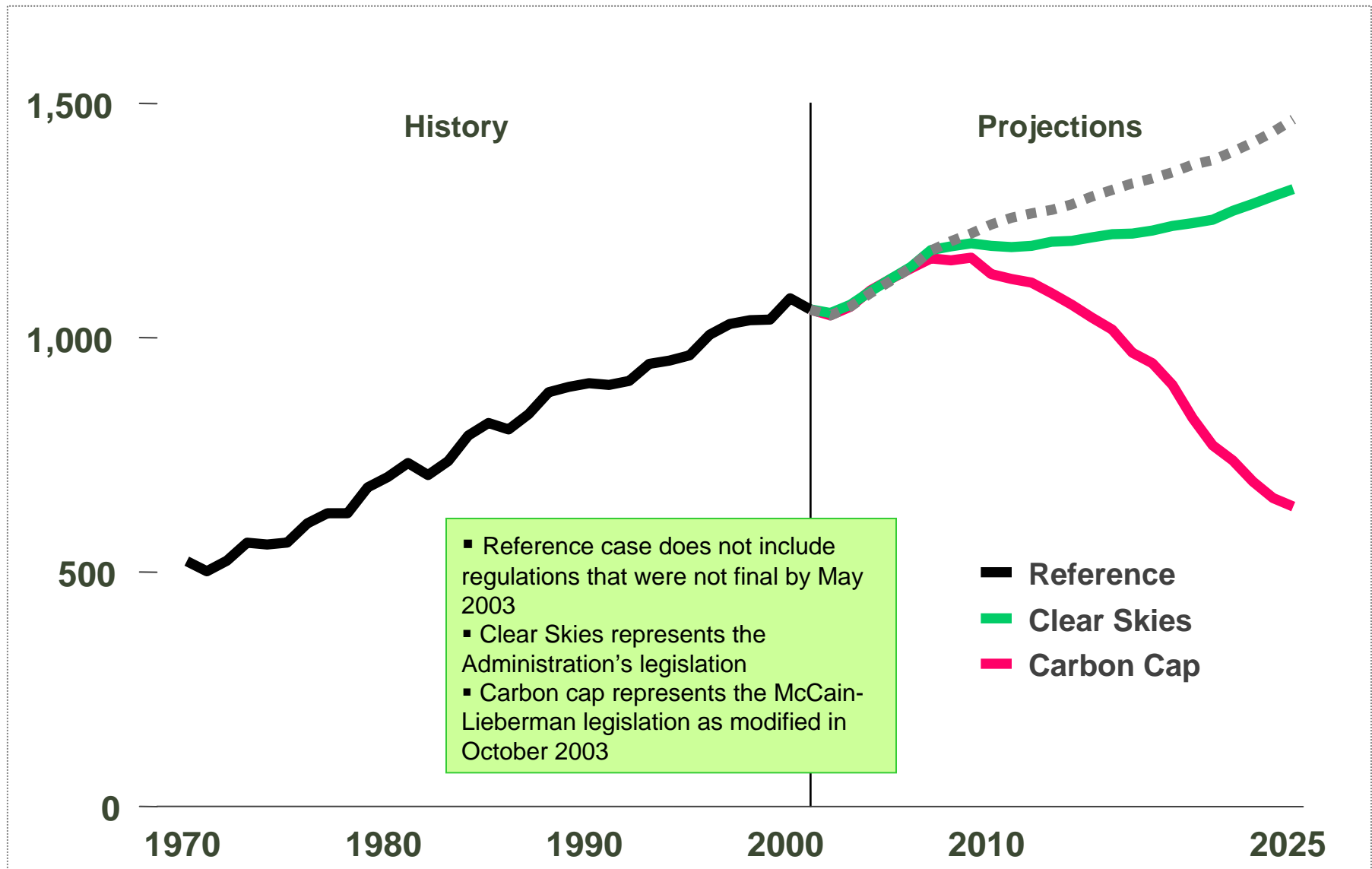


In 2020, 312 Monitored Counties will meet Standards with Clear Skies, New Diesel rules, and existing Clean Air Act programs



*For relative comparison purposes only. Based on 2003 EPA modeling conducted on CSA, 1999-2001 AQ data.

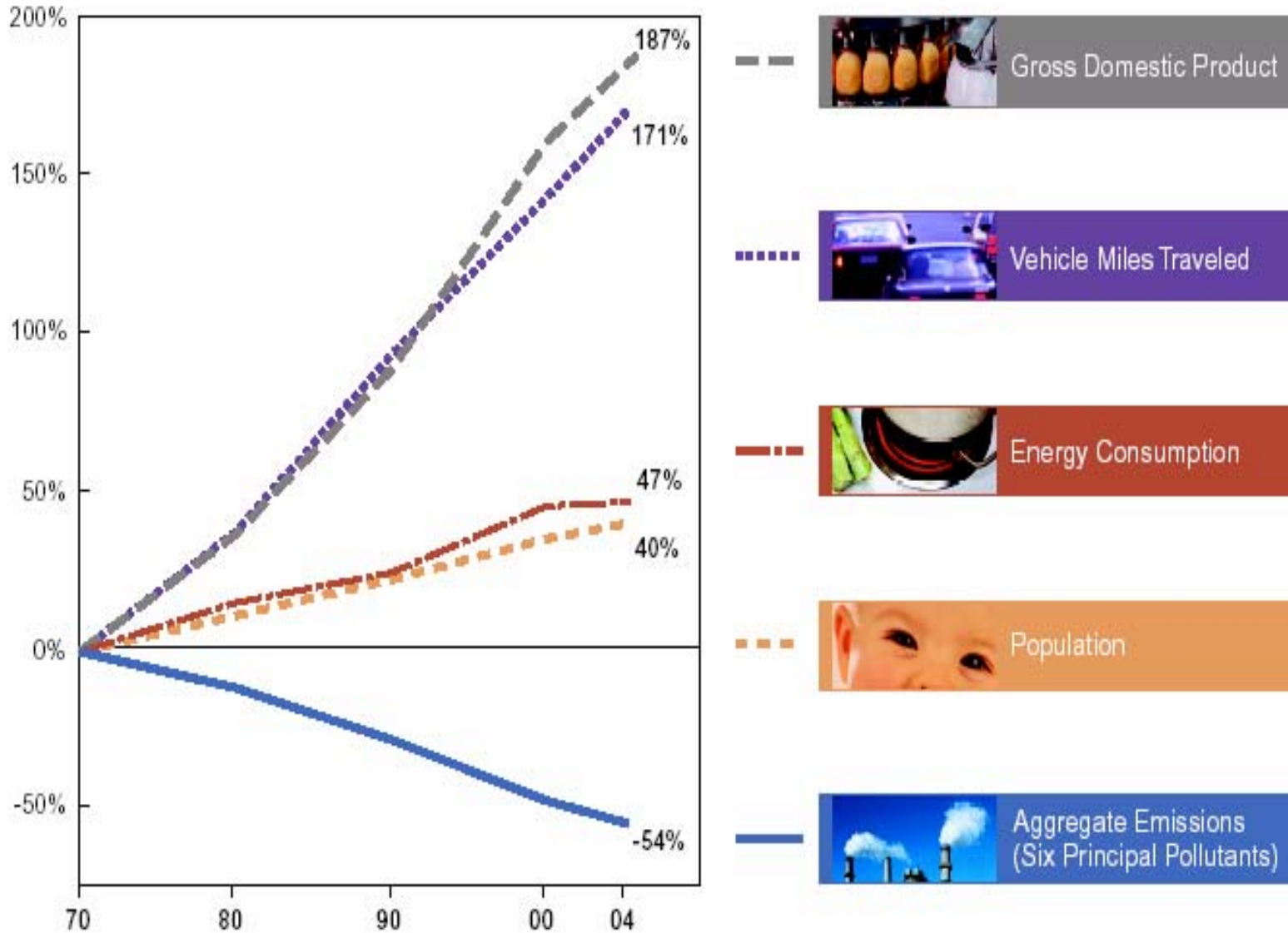
Coal Consumption 1970-2025



Source: Energy Information Administration, May 2003

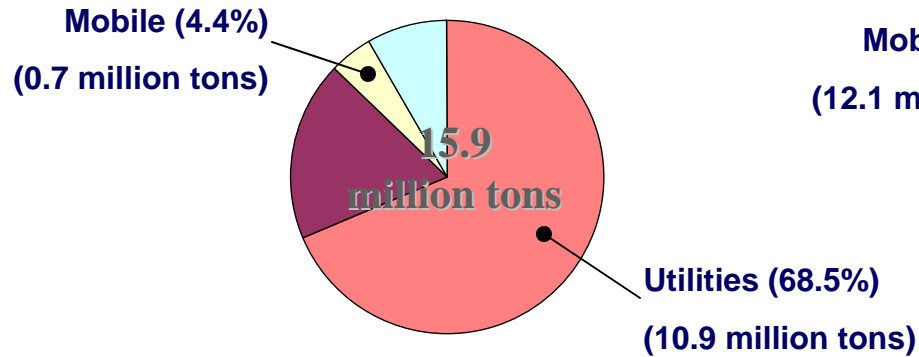
Economic Growth and Emissions Decline

Comparison of Growth Areas and Emissions

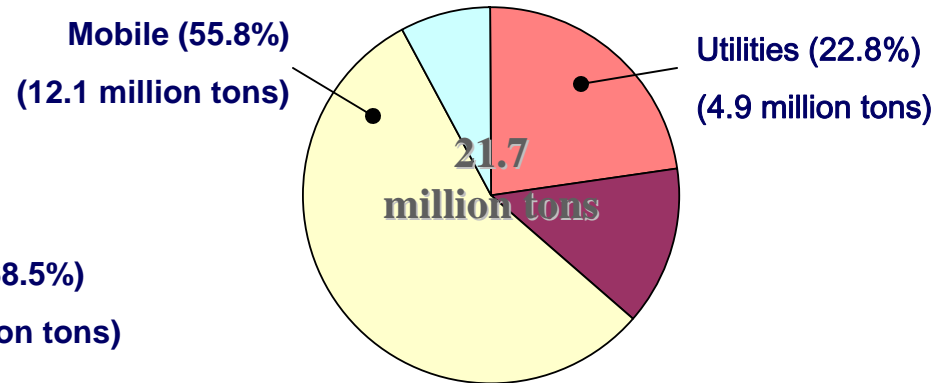


Power Generation Emission Reductions

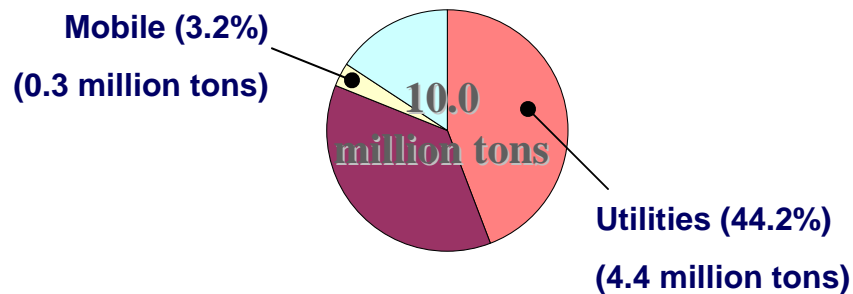
2001 Sulfur Dioxide



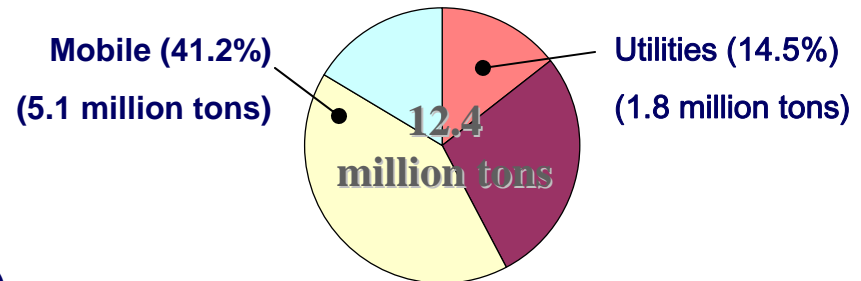
2001 Nitrogen Oxides



2020 Projected Sulfur Dioxide



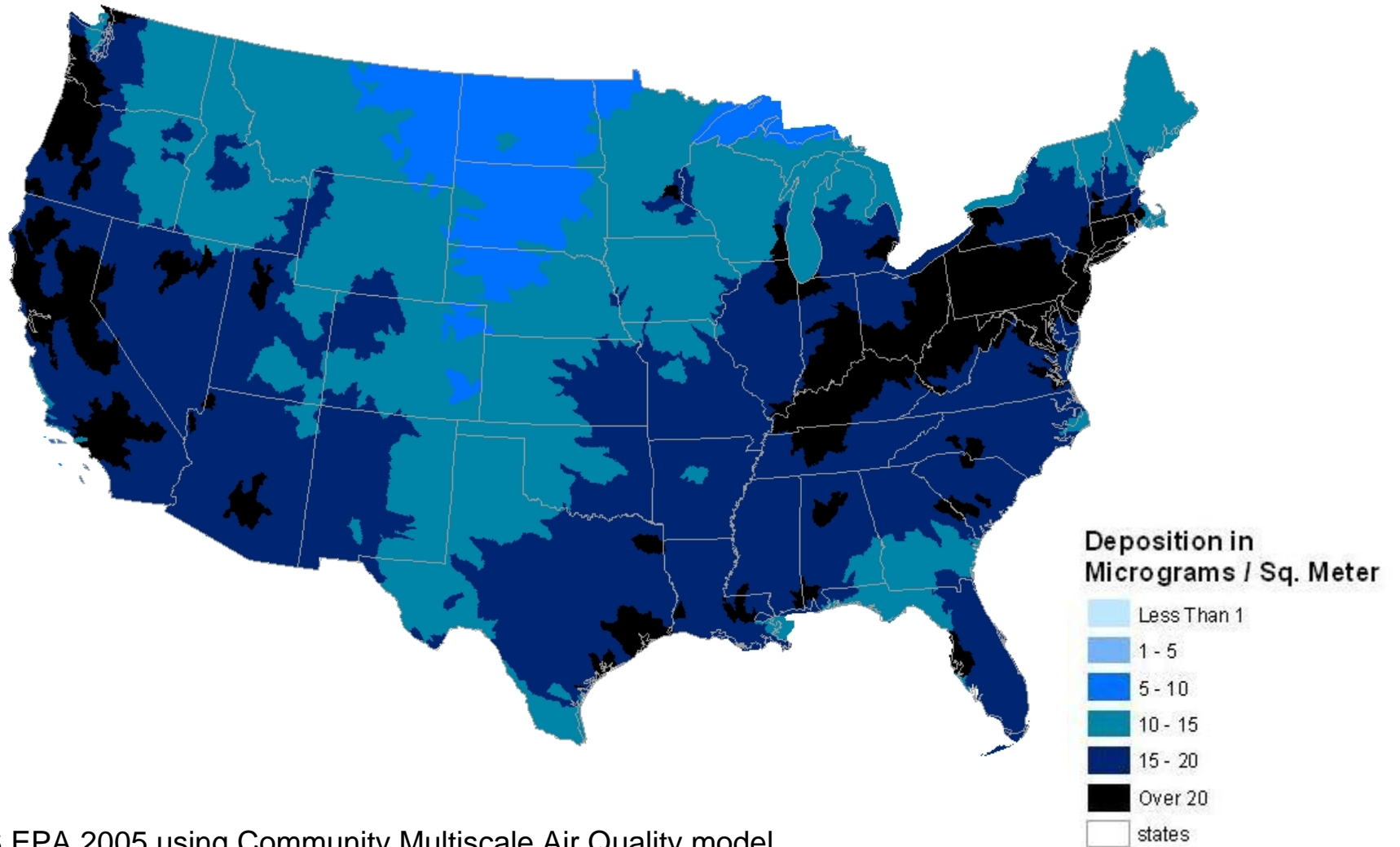
2020 Projected Nitrogen Oxides



- | | |
|---|---|
| ■ Fuel combustion – electric utilities | ■ On-road and non-road mobile |
| ■ Non-utility point sources | ■ Miscellaneous |

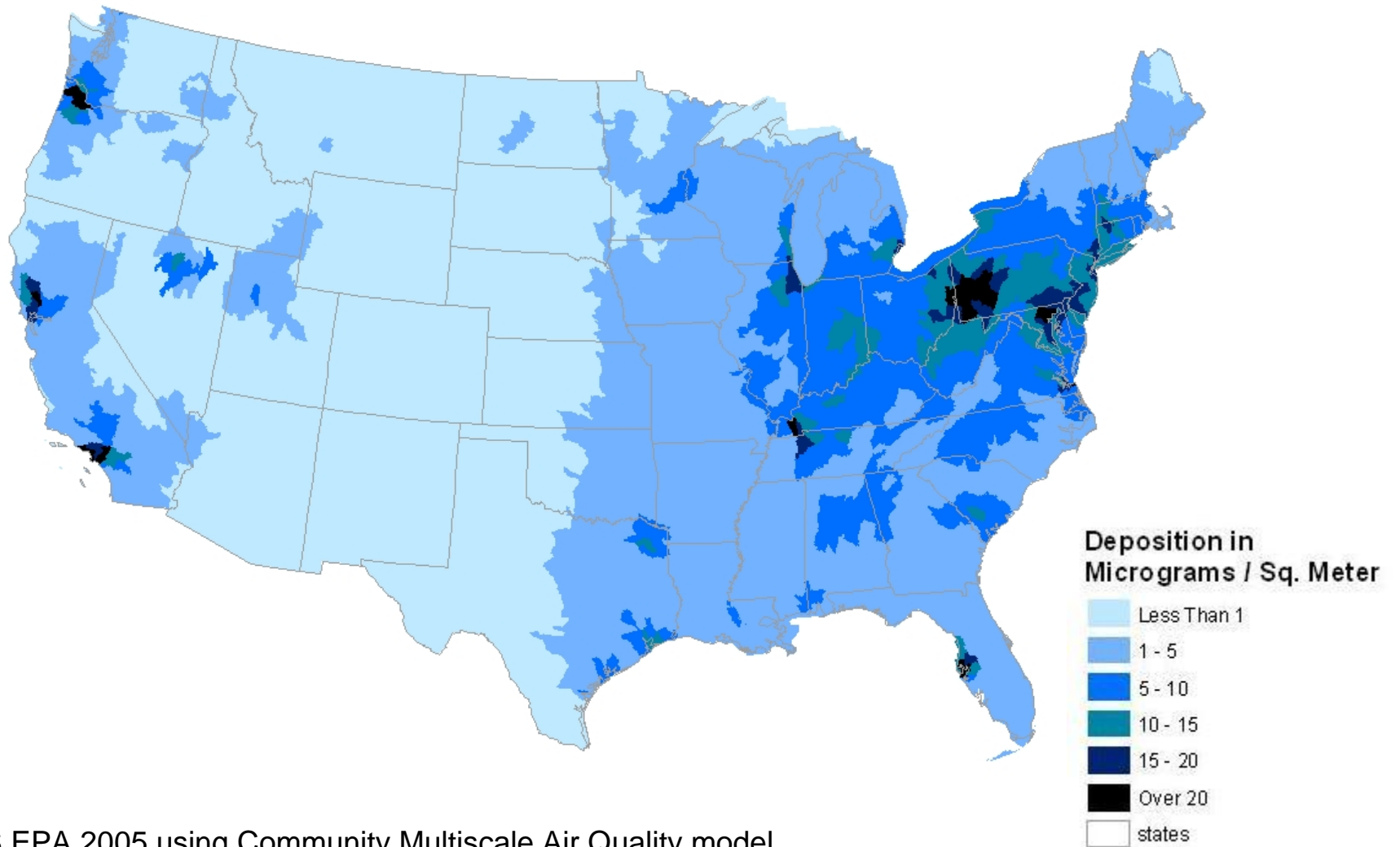
Notes: 2020 emission projections include rules that were final through 2004 in addition to the reductions proposed under CSA.

Mercury Deposition From All Sources in 2001



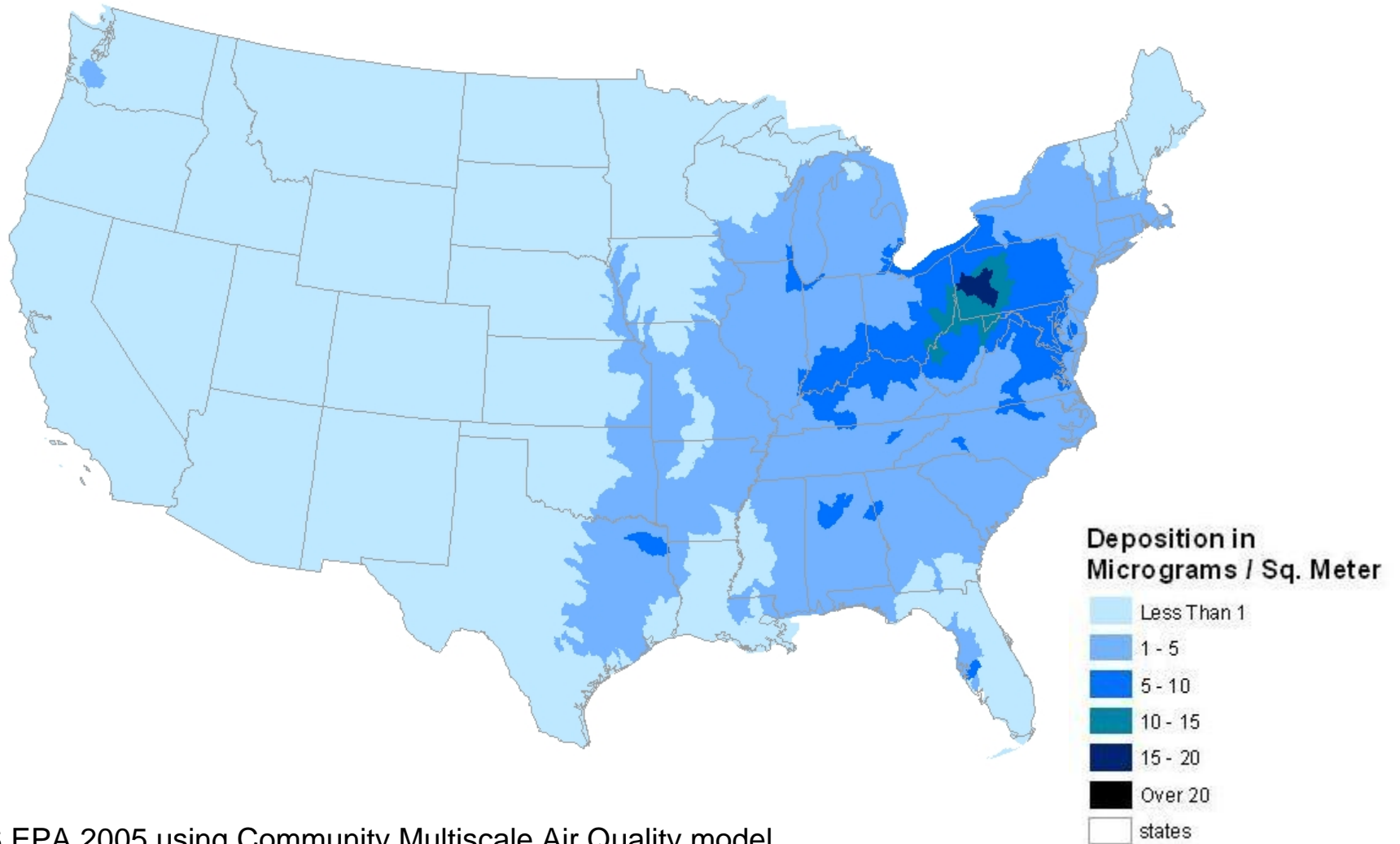
Source: US EPA 2005 using Community Multiscale Air Quality model.

Mercury Deposition from All US and Canadian Sources in 2001



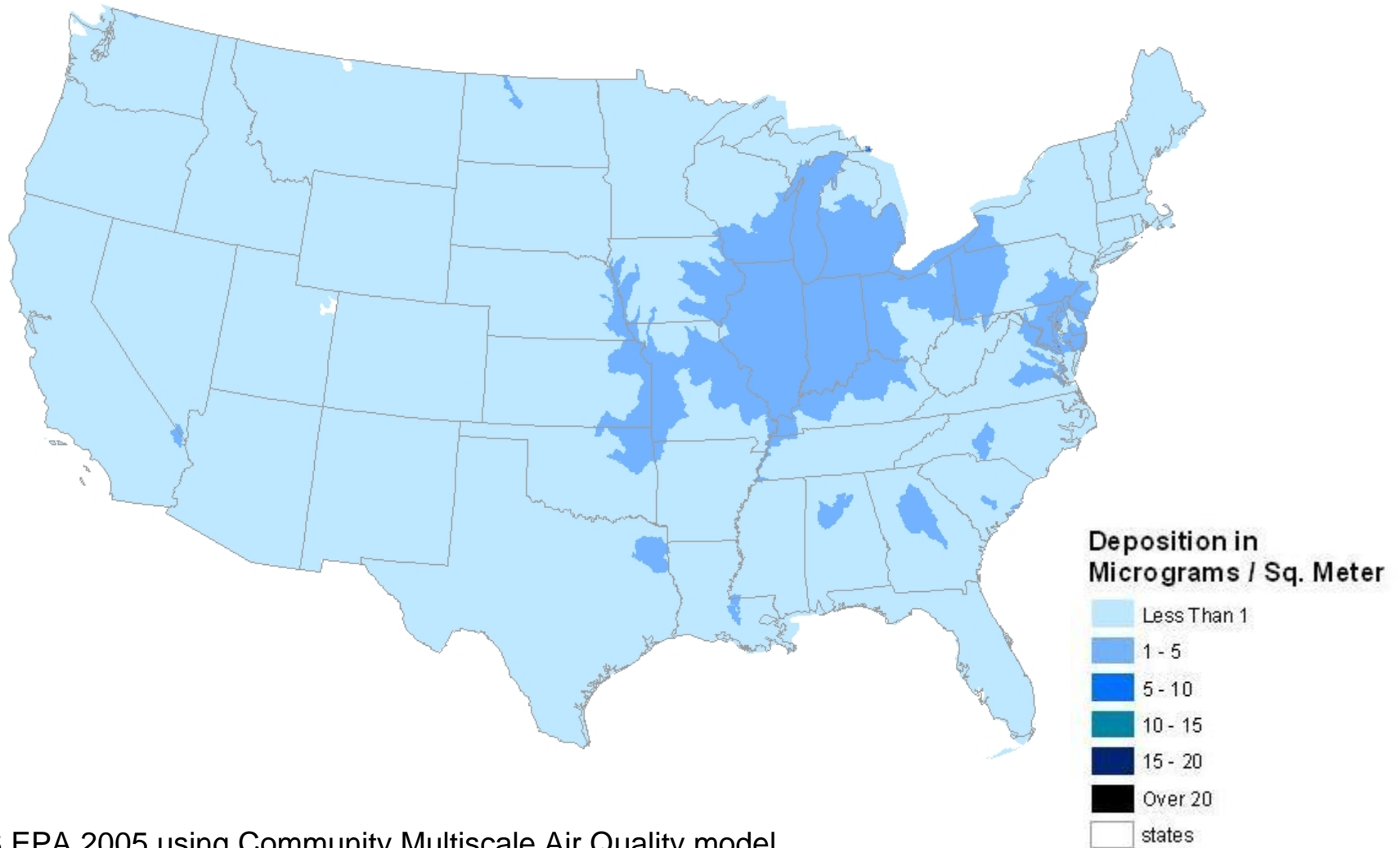
Source: US EPA 2005 using Community Multiscale Air Quality model.

Mercury Deposition From US Power Plants in 2001



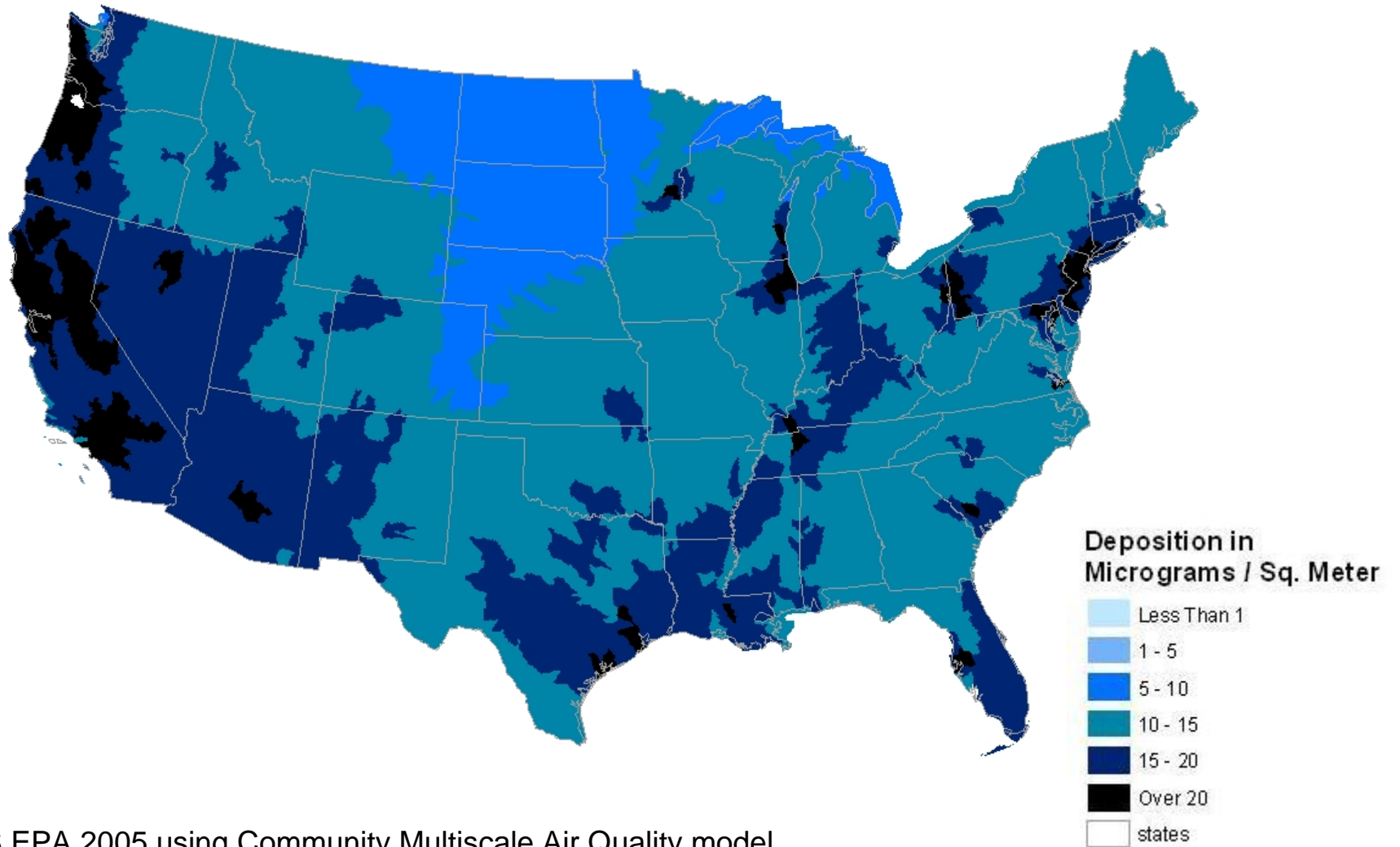
Source: US EPA 2005 using Community Multiscale Air Quality model.

Mercury Deposition From US Power Plants in 2020 with CAIR and CAMR



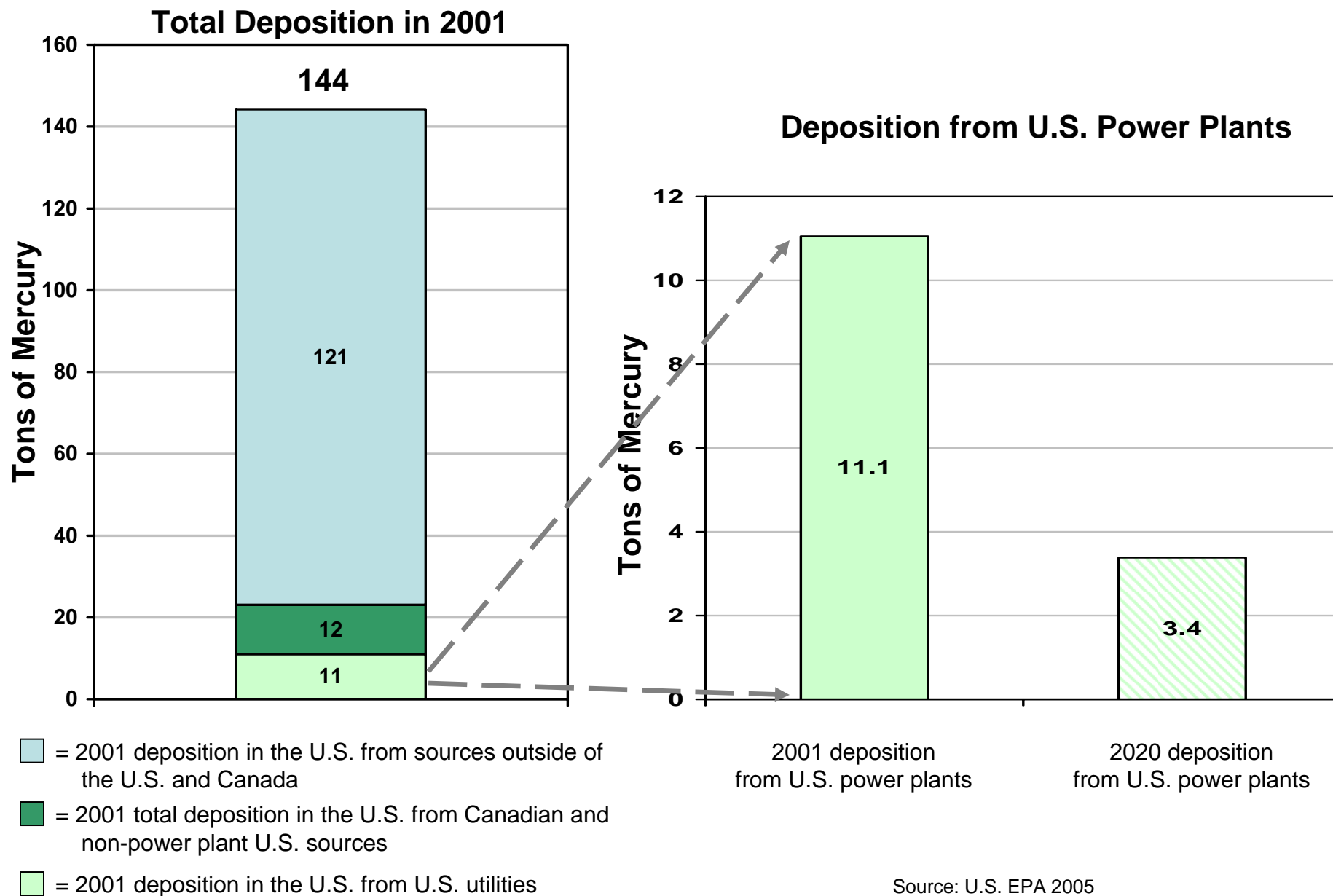
Source: US EPA 2005 using Community Multiscale Air Quality model.

Mercury Deposition from Non-Power Plant Sources in 2020



Source: US EPA 2005 using Community Multiscale Air Quality model.

Mercury Deposition in the U.S.



Source: U.S. EPA 2005

Achieving the Clean Coal Vision

	Today's Fleet Average	Today's Modern PC w/ Scrubbers <i>Clean Coal Technology</i>	First Generation IGCC <i>Advanced Clean Coal</i>	Second Generation IGCC <i>CCPI Technology</i>	Future Plants <i>FutureGen Technology</i>
SO₂ (% removal)	35%	98%	>98%	>99%	>99%
NO_x (% control)	50%	85%	93%	99%	>99%
Hg (% removal)	35%	20 – 90% <i>depending on coal type and plant configuration</i>	90%	95%	99%
CO₂ (% reduction)	0%	~ 5-17% <i>efficiency based</i>	~17% <i>efficiency based</i>	~20-25% <i>efficiency based</i>	>90% <i>with sequestration</i>

Note: The emissions shown are representative of the technologies listed. Greater emission reductions can be achieved for all technologies shown, but there would be a significant increase in cost. The reductions shown for PC plant requires add-on environmental control technologies. The reductions shown for IGCC systems are largely inherent to the technology.



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