



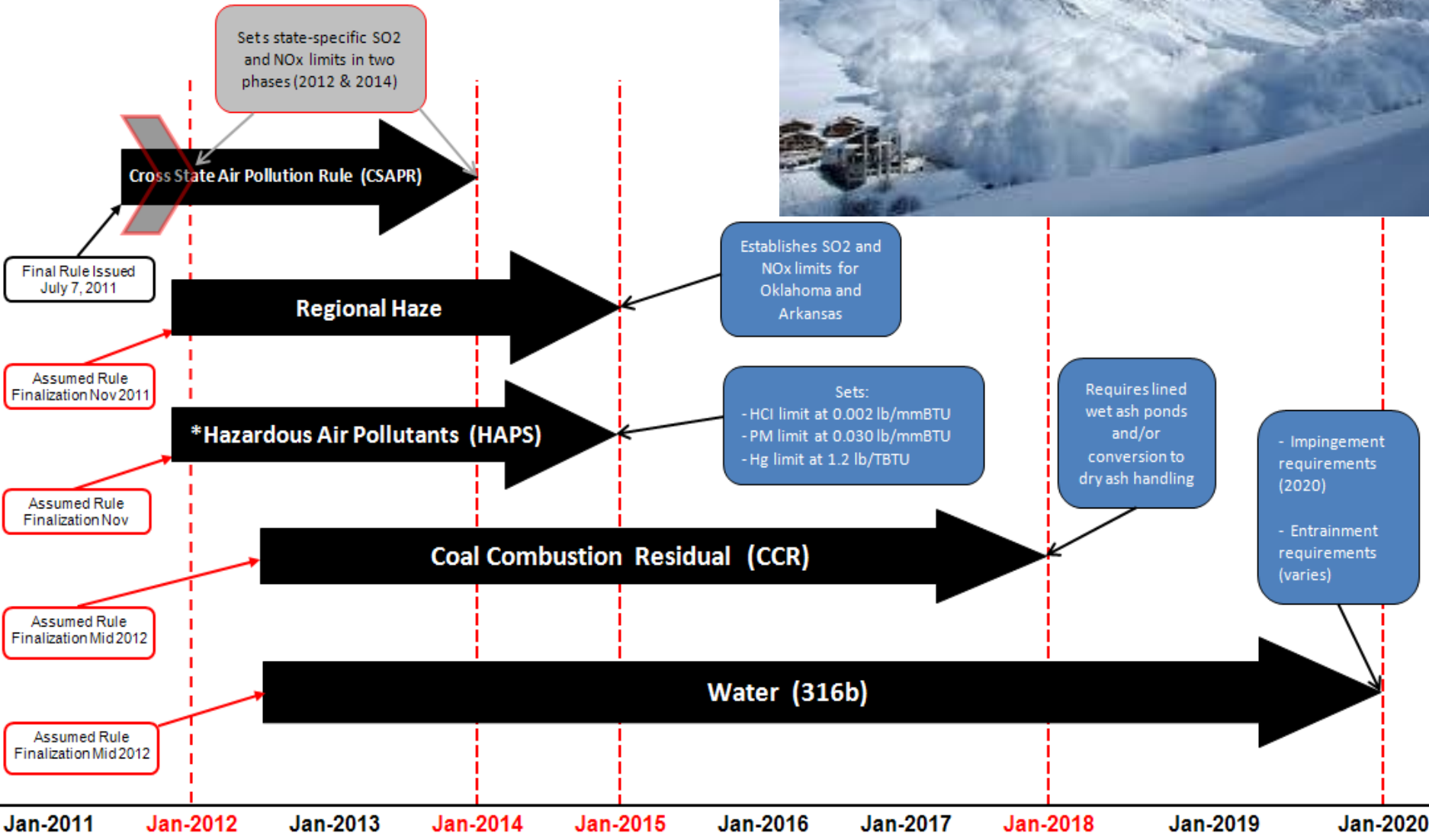
State and Federal Relations Further Strained by EPA's Latest Round of Power Plant Regulations

Presentation to the Southern States Energy Board
August 19, 2011

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The EPA Avalanche



* Units that will be retrofit are eligible for a one year compliance extension from the EPA



EPA's 316(b) Rule



- Proposed in *Federal Register* April 20, 2011; comments due August 18, 2011; expected finalization by July 2012.
- Regulation of cooling water intake structures at power plants and factories.
- Rule covers roughly 1,260 existing facilities:
 - 590 manufacturers.
 - 670 power plants.
- Purpose is to reduce injury and death to fish and aquatic life due to impingement and entrainment.
- Existing facilities would be subject to compliance requirements for impingement mortality and entrainment mortality; limits may require installation of new technology (possibly closed-cycle cooling) or reductions in water intake velocity.
- New generating units at existing facilities which are not “new facilities” and have an intake flow of 2+ million gallons per day would have to employ closed-cycle cooling (or equivalent).





EPA's CCR Rule

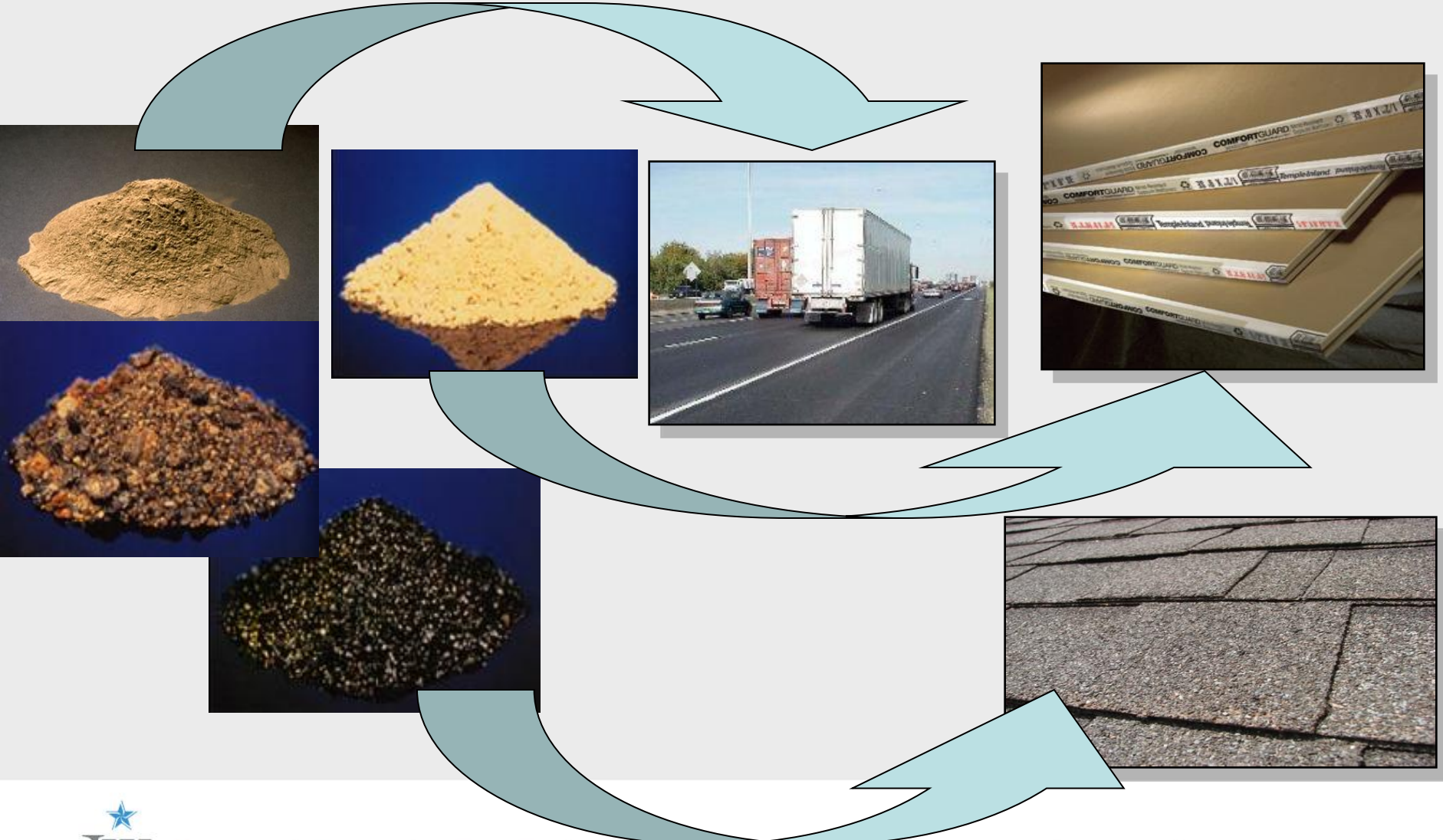


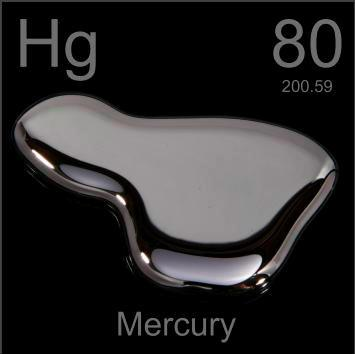
- Proposed June 2010; expected finalization by Spring 2012.
- Two Coal Combustion Residual (CCR or “coal ash”) regulatory options (Haz & Non-Haz).
- EPA: \$20 billion compliance cost (assumed recycling would increase, not decrease).
- USWAG Predicted Costs:
 - Subtitle C (Haz): \$78.92 - \$110.00 billion; 138,900-316,00 jobs lost.
 - Subtitle D (Non-Haz): \$22.77 - \$34.66 billion; 39,000 – 64,700 jobs lost.
- Bills working through Congress to prevent Haz option.
 - July 13, 2011: House Energy and Commerce Committee passed HR 2273 (vote of 35 to 12) to prevent EPA regulation as hazardous waste.
- EPA's own study found in 2005 that the biggest barrier to recycling was regulation as Haz waste.
- OSM is conducting new rulemaking process on a “clean slate,” with an anticipated rule proposal in April 2012.



CCR Beneficial Use

The World's Best Recycling Program





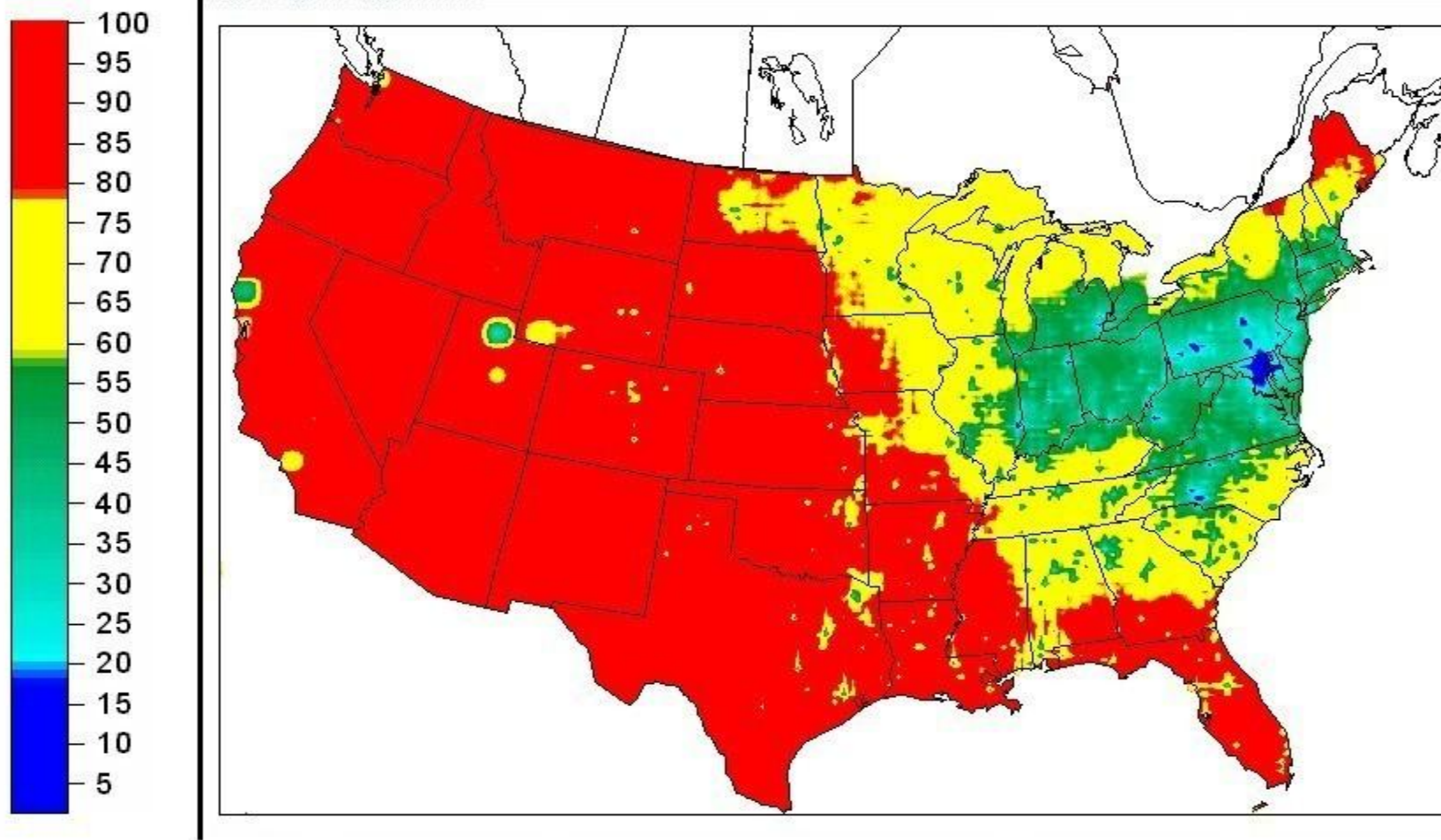
EPA's Utility MACT Rule



- Proposed in *Federal Register* May 2011; expected finalization by November 2011.
- EPA's proposal to regulate mercury and other hazardous air pollutants from coal, lignite, and oil-fired power plants.
- EPA's calculated annualized benefits:
 - Total Benefits: \$59 to 140 billion
 - Hg Related Benefits: \$4.1 to 5.9 million
 - PM2.5 Related Benefits: \$59 to 140 billion
 - EPA "could not monetize" benefits of non-Hg reductions.
- Annual compliance costs by 2015:
 - EPA estimates cost of ~\$11 billion.
 - Industry estimates cost of ~\$100 billion.



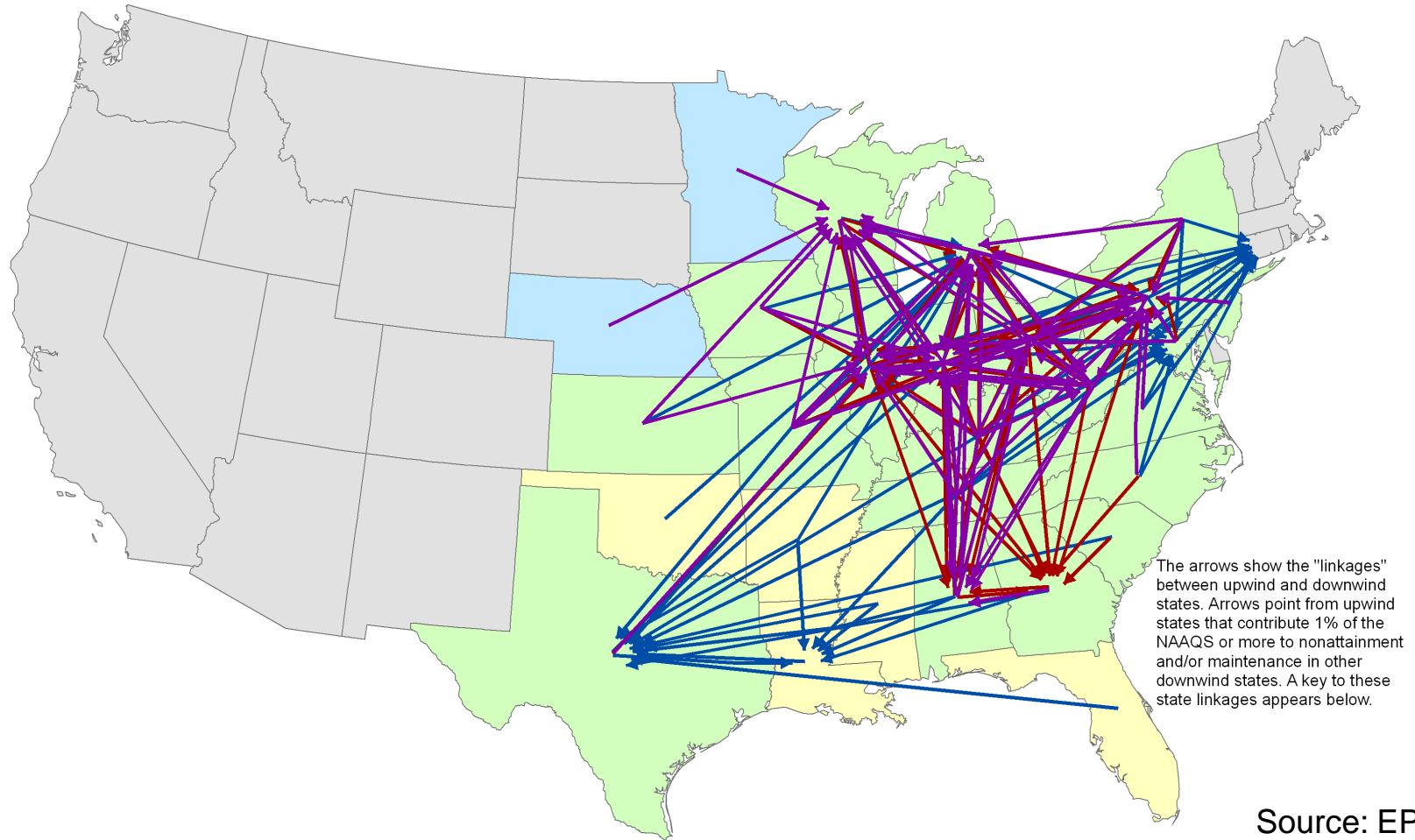
Mercury Deposition – Foreign Sources



Percent of mercury deposition that originates outside of the U.S.

Source: EPRI

CSAPR Alleged Contributions



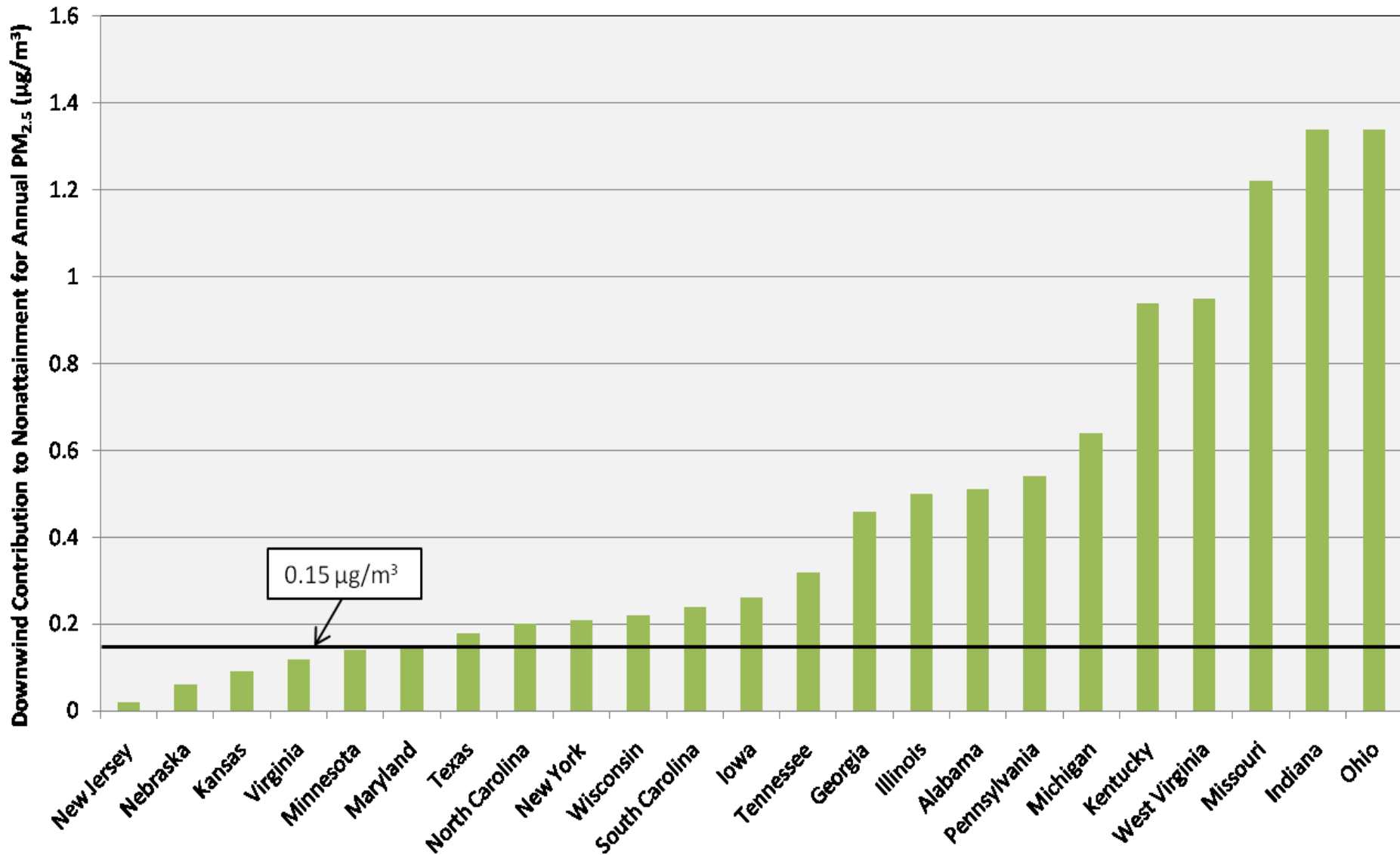
Source: EPA

- States controlled for both fine particles (annual SO₂ and NO_x) and ozone (ozone season NO_x) (21 States)
- States controlled for fine particles only (annual SO₂ and NO_x) (2 States)
- States controlled for ozone only (ozone season NO_x) (5 States)
- States not covered by the Cross-State Air Pollution Rule

Key to Arrows
Upwind-Downwind Linkage for Ozone
Upwind-Downwind Linkage for Annual PM_{2.5}
Upwind-Downwind Linkage for Daily PM_{2.5}

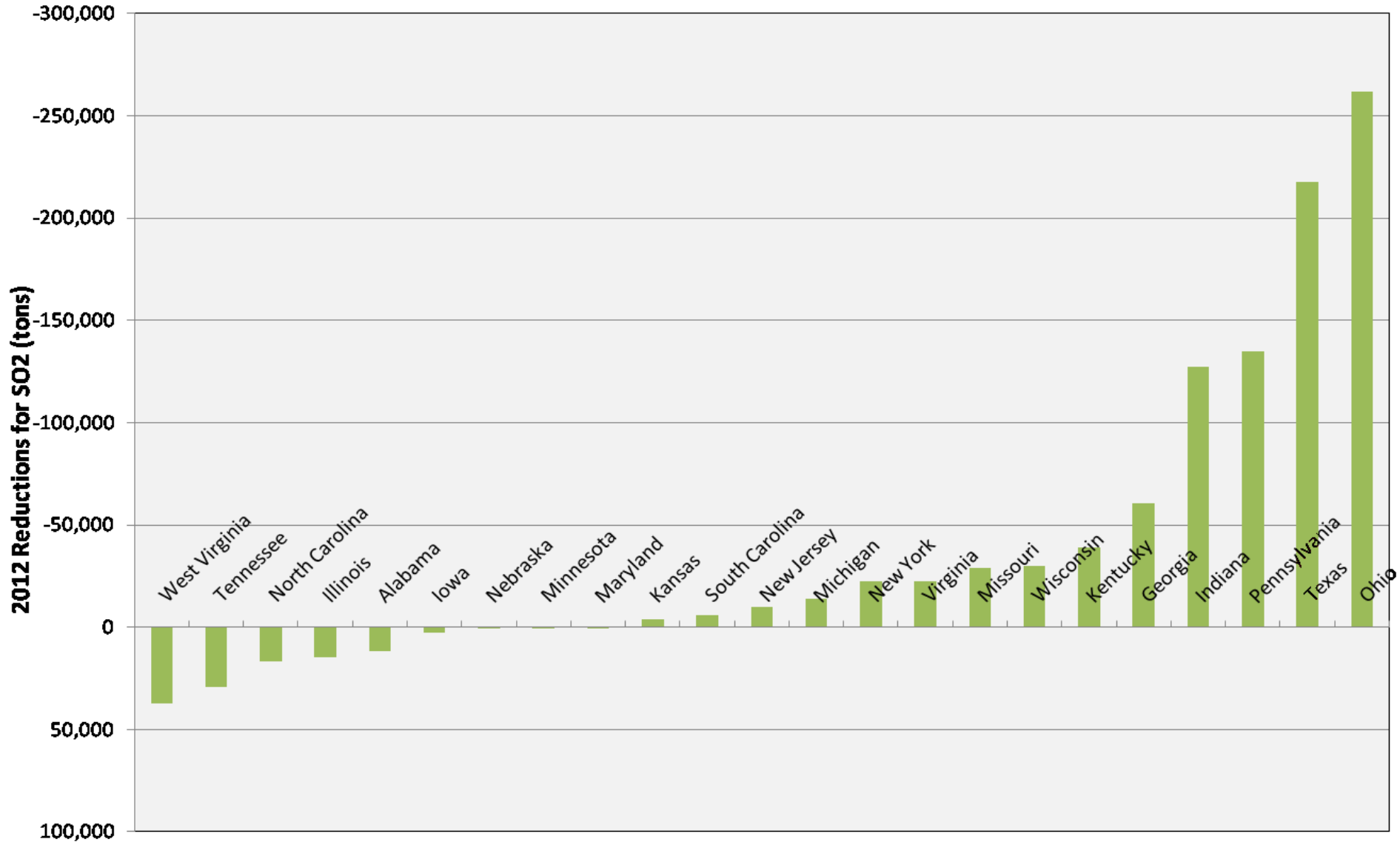
CSAPR

SO₂ Group 1 & 2 State Contributions to Downwind Nonattainment for Annual PM_{2.5} (μg/m³)*



Source: Table V.D-1, Federal Register/Vol. 76, No. 152, page 48240

CSAPR Required 2012 Reductions for SO₂ Group 1 & 2 States*

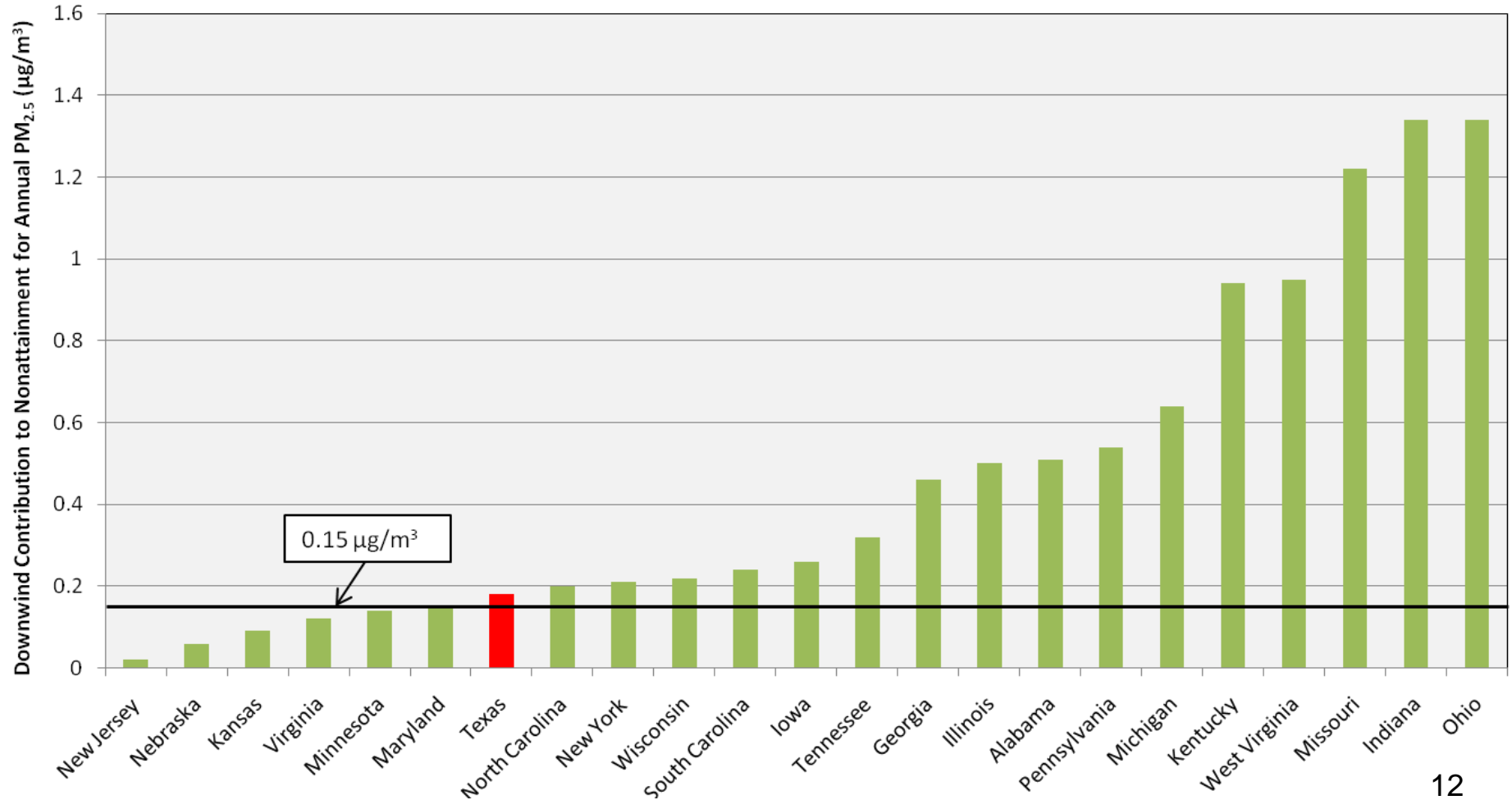


Source: Reductions are the differences between 2012 state budgets from Federal Register/Vol. 76, No. 152, pages 48261 and 48262, and the actual 2010 emissions from EPA's Clean Air Markets Division, Data & Maps, Quick Reports 11

Texas' Alleged Share of the Projected Problem

CSAPR

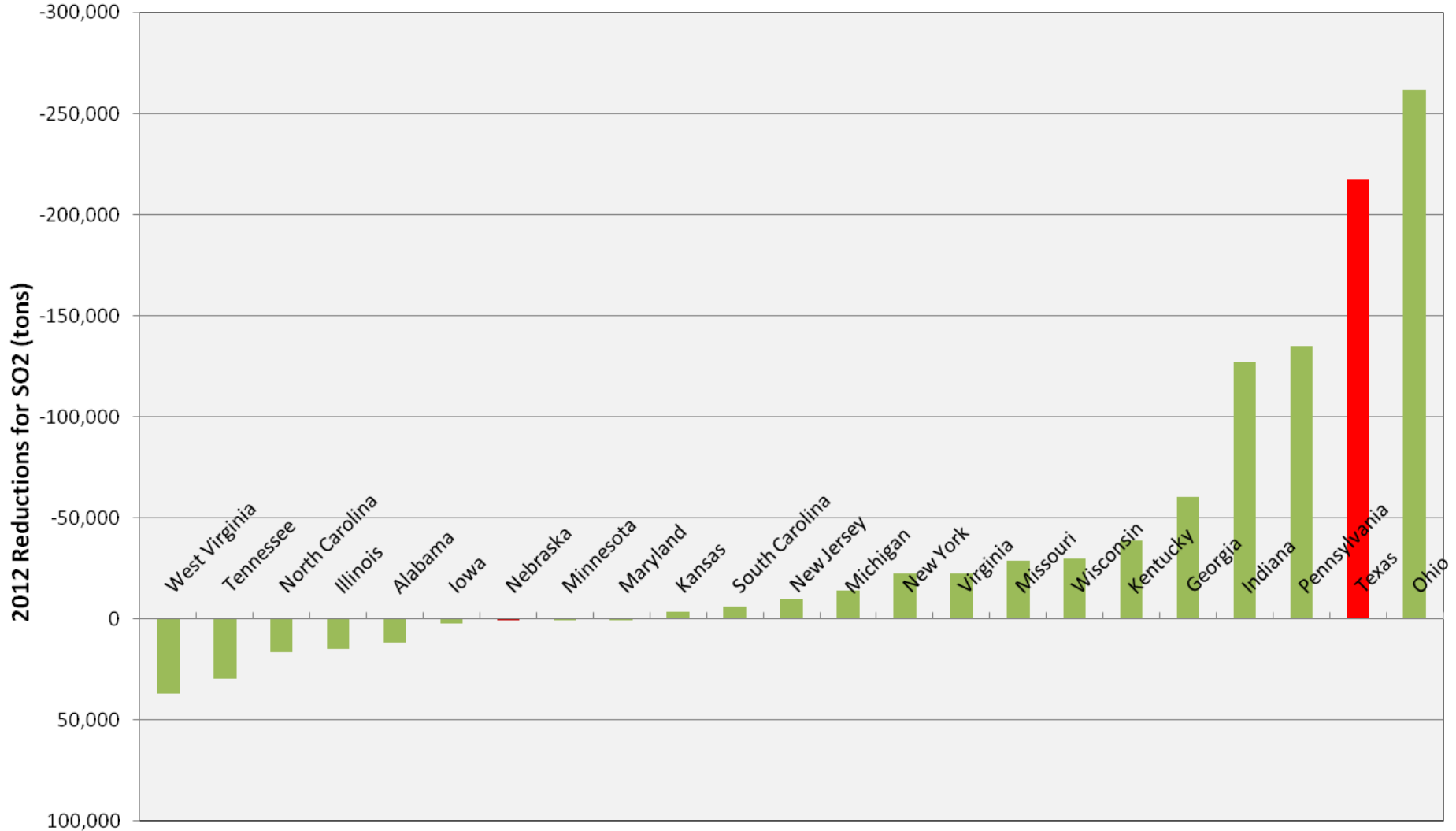
SO₂ Group 1 & 2 State Contributions to Downwind
Nonattainment for Annual PM_{2.5} (μg/m³)*



Source: Table V.D-1, Federal Register/Vol. 76, No. 152, page 48240

Texas' Required Share of the Mandated Solution

CSAPR Required
2012 Reductions for SO₂ Group 1 & 2 States*



Source: Reductions are the differences between 2012 state budgets from Federal Register/Vol. 76, No. 152, pages 48261 and 48262, and the actual 2010 emissions from EPA's Clean Air Markets Division, Data & Maps, Quick Reports



EPA's Ozone Rule

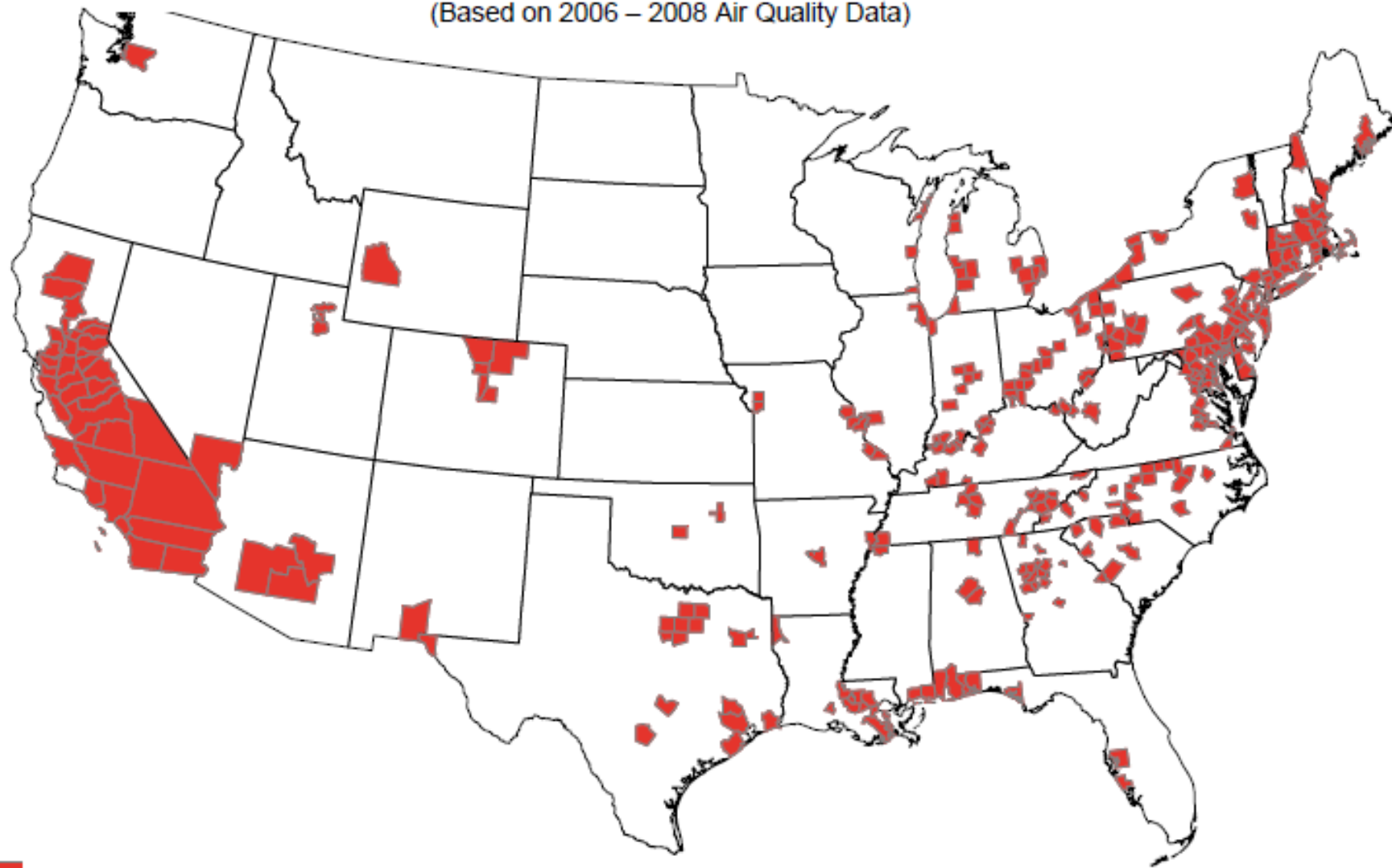


- Proposed January 2010; projected finalization by August 2011.
- 85 ppb primary limit was replaced in 2008 with 75ppb limit.
- Current proposal revokes 2008 limit and will replace with limit between 60-70 ppb.
- Rule also proposes a seasonal secondary standard to protect public welfare and environment (e.g. sensitive vegetation).
- Monitored U.S. counties that would violate primary standard:
 - 70 ppb: 515 counties (76% of monitored)
 - 65 ppb: 608 counties (90% of monitored)
 - 60 ppb: 650 counties (96% of monitored)
- State Nonattainment Designations (*originally*) Due: January 2012.
- State SIP Revisions (*originally*) Due: August 2014.
- EPA predicts cost of compliance up to \$90 billion.

Counties With Monitors Violating the March 2008 Ground-Level Ozone Standards

0.075 parts per million

(Based on 2006 – 2008 Air Quality Data)



322 of 675¹ monitored counties violate the standard

Notes:

1. Counties with at least one monitor with complete data for 2006 – 2008
2. To determine compliance with the March 2008 ozone standards, the 3-year average is truncated to three decimal places.

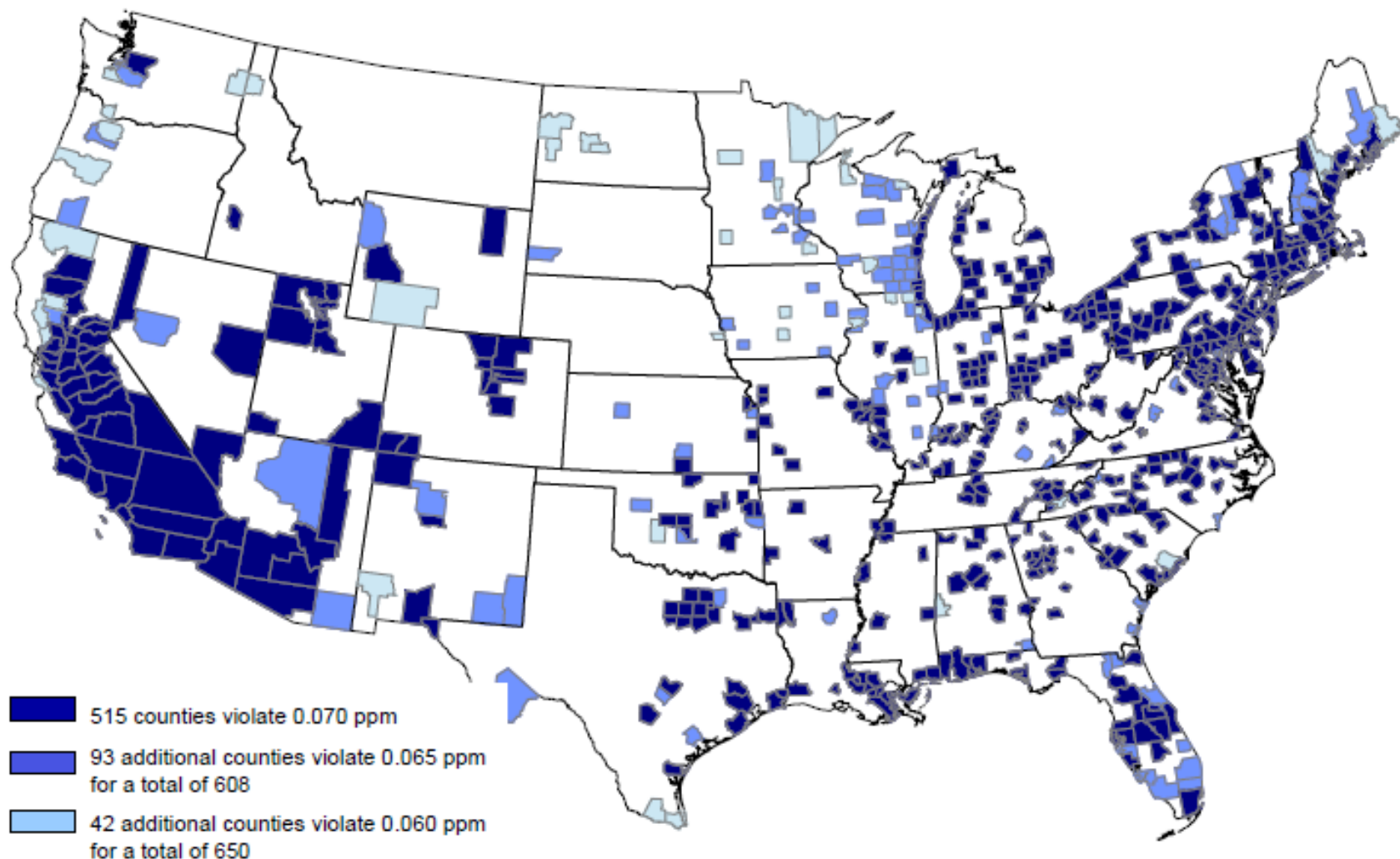
Source: EPA

Counties With Monitors Violating Primary 8-hour Ground-level Ozone Standards

0.060 - 0.070 parts per million

(Based on 2006 – 2008 Air Quality Data)

EPA will not designate areas as nonattainment on these data, but likely on 2008 – 2010 data which are expected to show improved air quality.

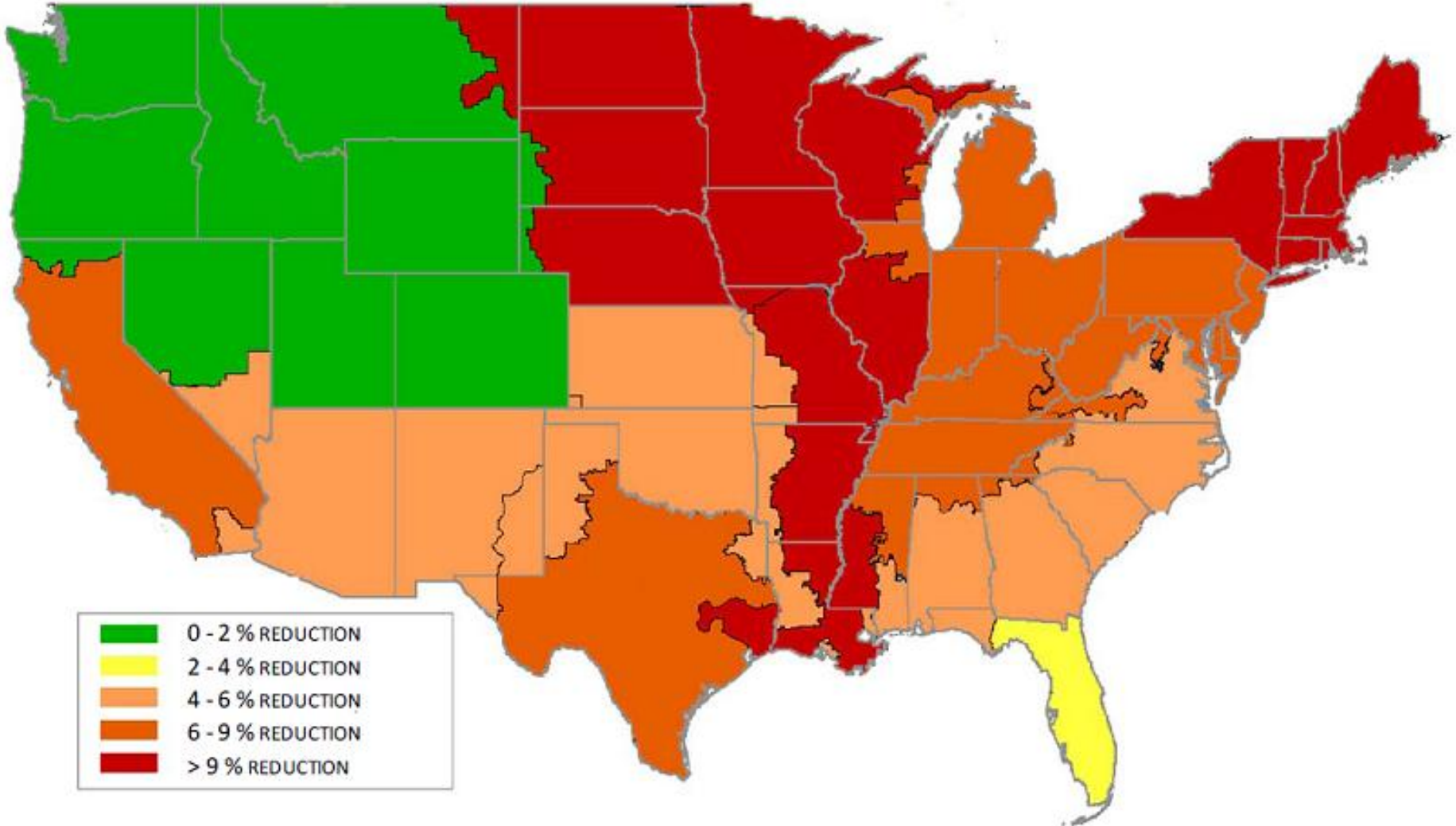


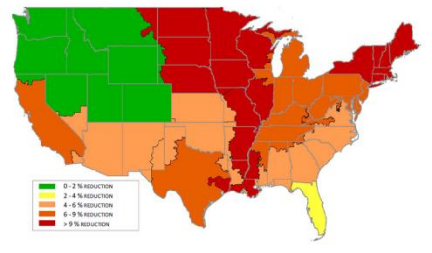
Notes:

1. No monitored counties outside the continental U.S. violate.
2. EPA is proposing to determine compliance with a revised primary ozone standard by rounding the 3-year average to three decimal places.

Source: EPA

Risk to Electric Generating Fleet: Reduction in Adjusted Potential Capacity Resources *(before deep cuts made in final CSAPR)*

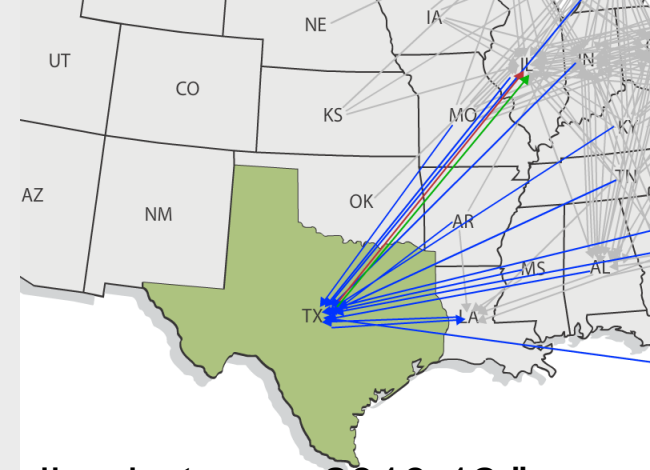




Risk to Electric Generating Fleet

- Already announced coal-retirements between 2010 and 2022 are approximately 35,100 MW.
- NERC estimates potential capacity reduction of ~31 to 70 GW by 2015; ~40 to 69 GW by 2018.
- EEI predicts nationwide unplanned coal retirements ranging from ~33 to 75 GW by 2015.
- Impacts will be much greater because predictions do not include deeper cuts in final CSAPR rule.

Risk to Reliability: Texas Example



EPA Statements/Assumptions about Texas:

- “Reserve margin of approximately 25% under CSAPR”.
- “9 GW of new or expanded cleaner generation coming online between 2010-12.”
- Capacity factor of wind generation assumed to be 100%

Before CSAPR Final Rule, Electric Reliability Council of Texas (ERCOT):

- ‘11 GW of retirements in TX by 2016 (1,200 MW of coal, 9,800 MW of gas)’
- ‘-2.3% reserve margin after retirements (16% lower than required reserve margin)’
- ‘The Effective Load-Carrying Capability (ELCC) of Wind Generation is 8.7%’

Since CSAPR Final Rule:

- ERCOT has stated that CSAPR January 2012 compliance date will require many plants to limit or shut down operations.
- Full impact of CSAPR to be announced in updated report in Sep. 2012.
- Litigation imminent.

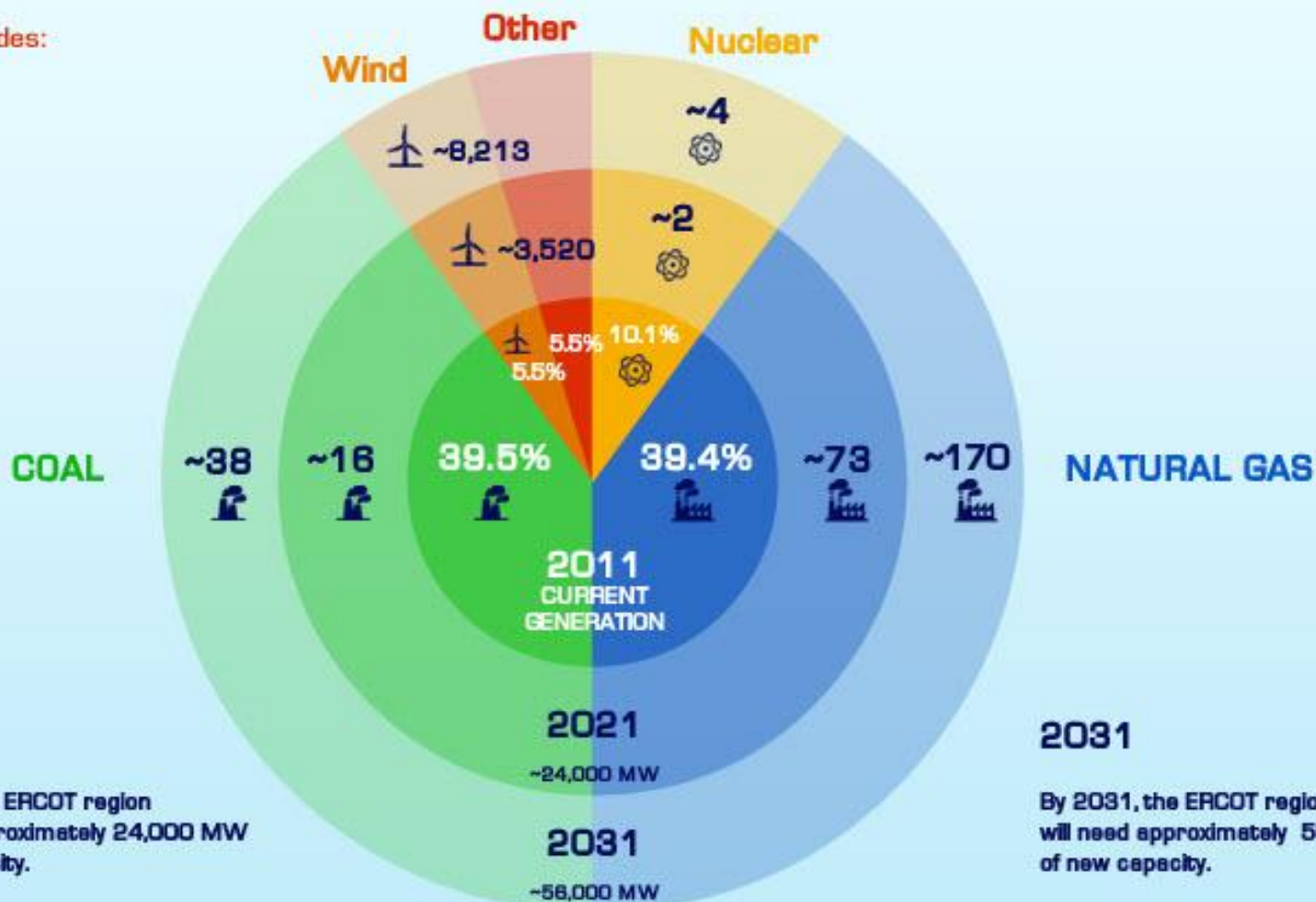


Texas Generation and Demand Projections – 2011, 2021 and 2031

Projected New Generation Requirements Based on Current Production

Other includes:

Petro
Hydro
Biomass
Others



2021

By 2021, the ERCOT region will need approximately 24,000 MW of new capacity.

2031

By 2031, the ERCOT region will need approximately 58,000 MW of new capacity.

Based on ERCOT Report on Capacity, Demand and Reserves in the ERCOT Region, May 2011 and average facility baseload according to U.S. Energy Information Administration, Facility Output Capacity, 2009 (Form EIA-860 Database).

Wind calculations are based on 2009 data, which demonstrate an average generating capacity of 1.5 MW per turbine and a 25% capacity factor. Note, however, that ERCOT uses an 8.7% factor for wind generation nameplate capacity when calculating reserve margins.

What Can States Do To Respond?

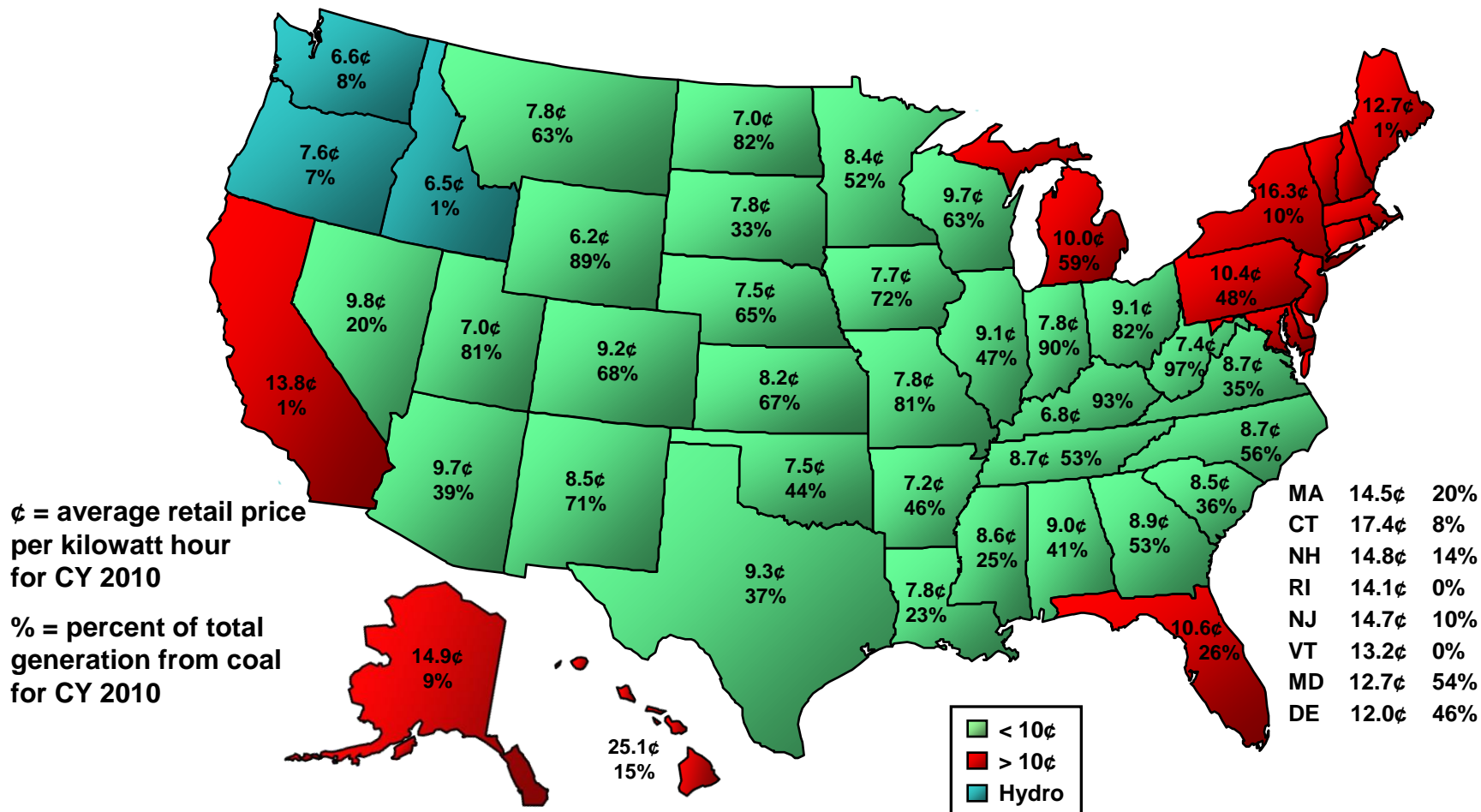


- File Comments:
 - SPP, ERCOT, PUCT, PJM, Midwest Independent Transmission System Operator, New York Independent System Operator, and NARUC have all filed comments with EPA and express reliability concerns.
- Pass Resolutions:
 - NARUC, NCSL, SLC, and ALEC have all passed resolutions calling for responsible regulation and to minimize impacts to reliability and ratepayers.
- Work with Congressional Delegations to constrain EPA's overreach.
- Petition EPA for reconsideration.
- File lawsuits to stop EPA.

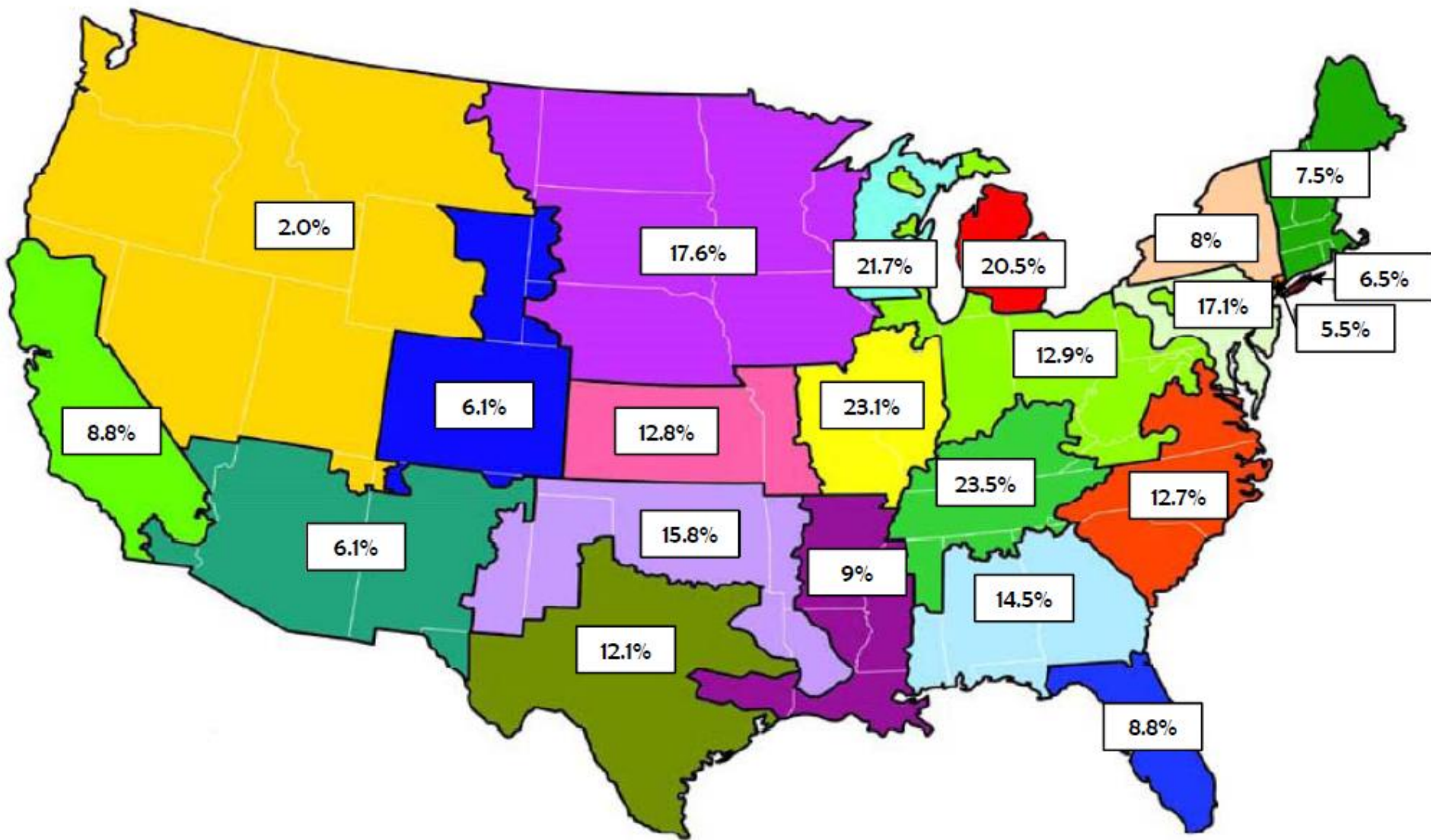


Low-Cost Electricity Comes from Coal

Electric Customers Pay Some of the Lowest Rates in the Nation Due to Coal-Fueled Generation

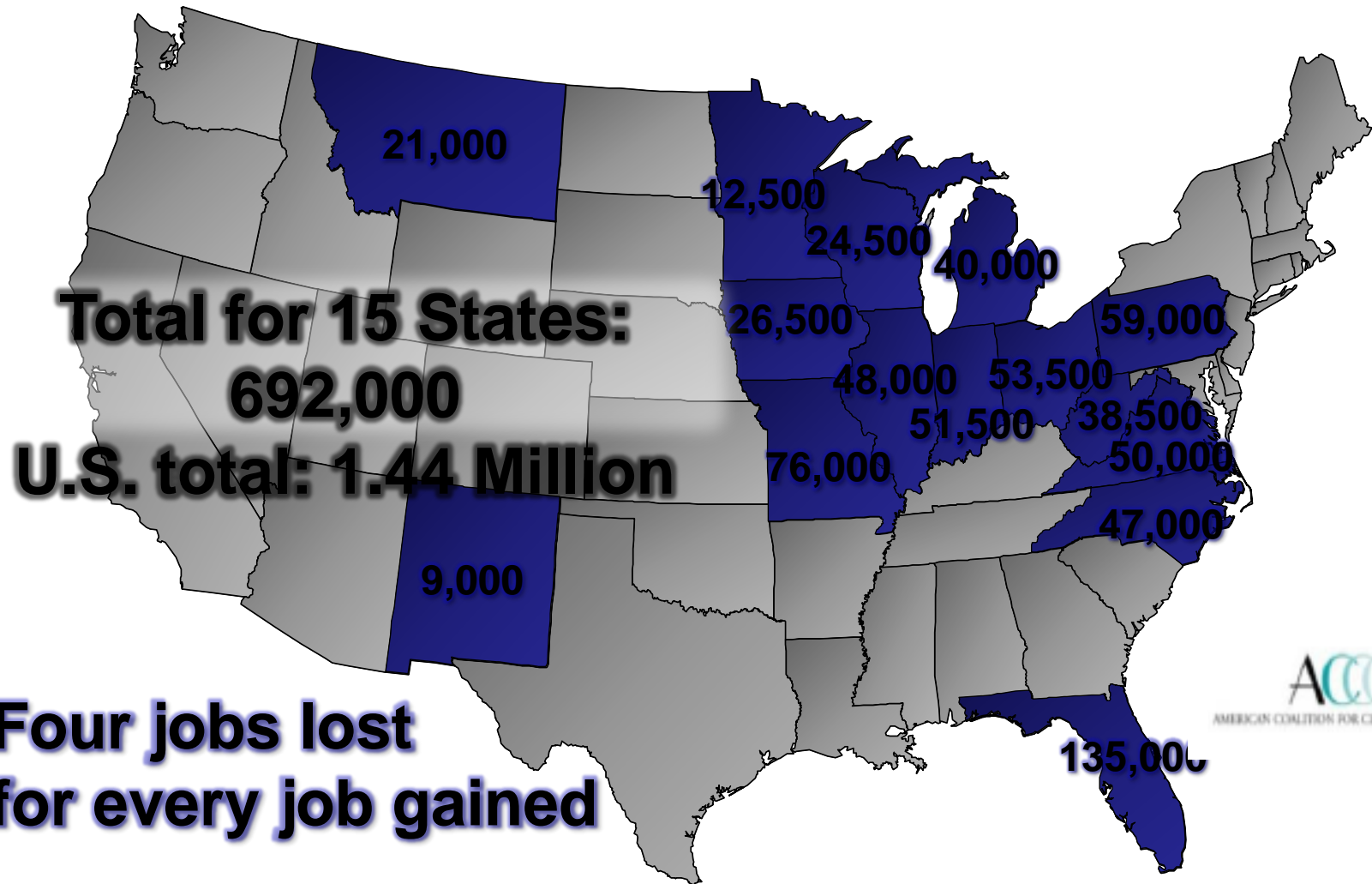


Average Regional Electricity Price Increases in 2016 due to Transport Rule and MACT Proposals



****Does factor in deeper cuts in final CSAPR rule.***

Net employment losses due to EPA's proposed Transport Rule and Utility MACT Rule



**Does factor in deeper cuts in final CSAPR rule.*

2013-2020 (Job-

QUESTIONS?

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