

Imminent CO₂ Rules and Their Implications for U.S. Coal Industry

Presented by:

David M. Flannery

Steptoe & Johnson PLLC

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Remarkable Times

- Broad based attack by USEPA on all fossil fuels
- Particular attention being directed at coal burning electric power plants (CSAPR; MATS; GHG-NSPS)
- Significant judicial challenges are being directed at finalized rules: (CSAPR; MATS)
- New Source and Existing Source GHG rules now being developed for application to electric power generation

This presentation will review ...

- The CO₂ programs being developed by USEPA
- The threat that these CO₂ programs present to fossil-fuel fired electric power generation
- An assessment of the legal authority for the development of such programs

- 2007 – Massachusetts v. EPA, 549 U.S. 497 (2007); GHGs fall within definition of “air pollutants”
- 2009 – Endangerment funding
- Initial regulations:
 - automobile emissions
 - prevention of significant deterioration for stationary sources
- Legislation to revoke EPA authority failed
- Path clear for further rulemaking

New Source NSPS

- In April, 2012, USEPA proposed New Source Performance Standards (NSPS) for Greenhouse Gas (GHG) Emissions for certain EGUs.
 - Simple cycle gas turbines are exempt (even though the more efficient ones currently meet the rule).
- Combined cycle gas turbines will meet the rule.

New Sources NSPS (cont.)

- Coal fired units will not meet the rule without using carbon capture and storage.
- Carbon capture and storage:
 - is not yet commercially available,
 - has not yet been demonstrated at commercial scale, and
 - is likely to be prohibitively expensive.
- 2 million comments were filed on proposal
- A primary legal concern: the proposal sets single emission limit for plants regardless of fuel type, size of plants and other factors in violation of CAA

Existing Source Rule

- ▶ President Obama's June 25, 2013, memorandum to EPA calls for the agency to propose existing source rules for the power generation sector by June 2014, with a final rule by June 2015.
- ▶ Memo calls for the use of "market-based instruments."
- ▶ EPA's authority to regulate CO₂ emissions from existing sources is required by CAA §111(d) to be through state "guidelines."
- ▶ No immediate detail about emission reduction targets
- ▶ Significance of NRDC proposal?

(c) **Development of Standards, Regulations, or Guidelines for Power Plants.**

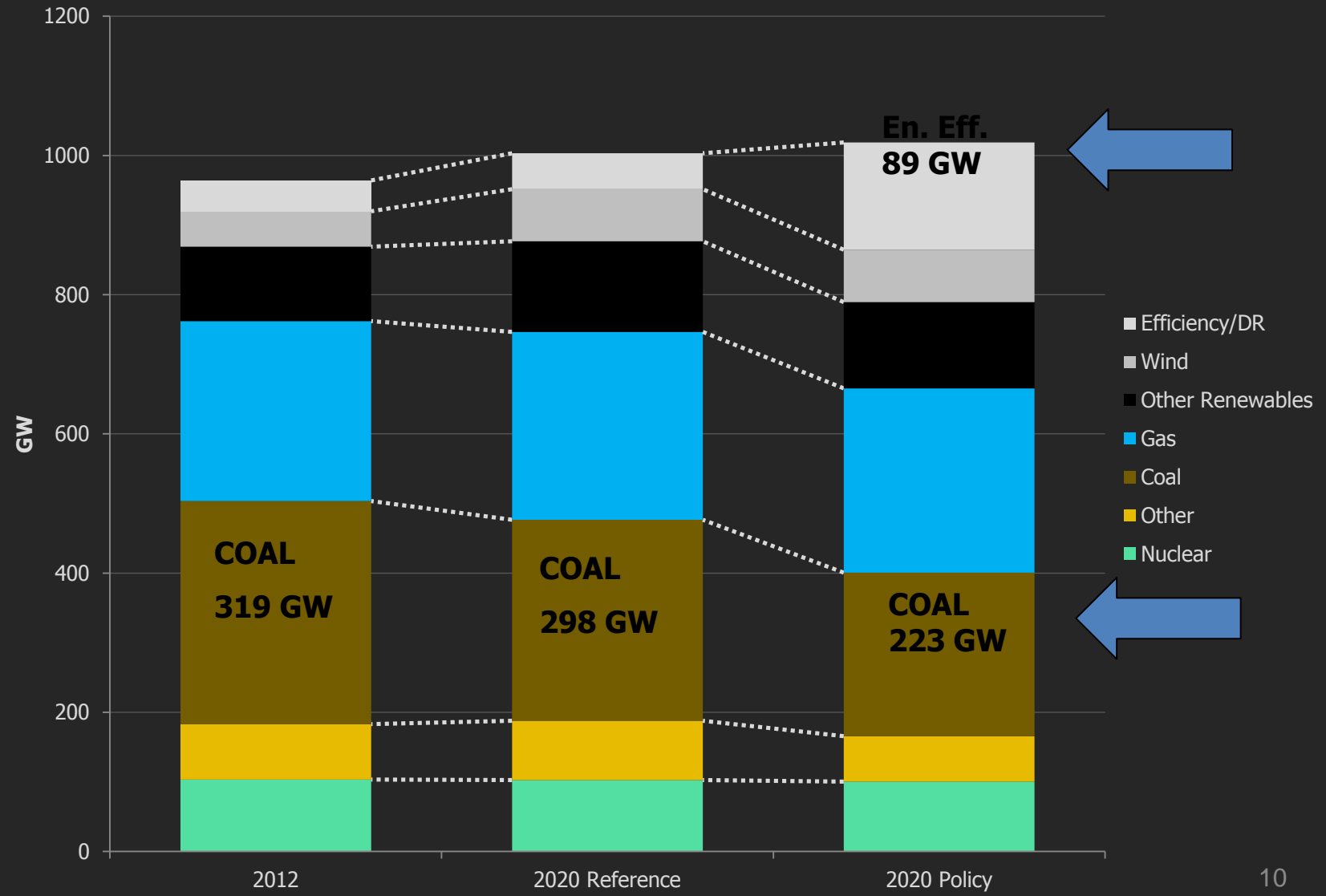
In developing standards, regulations, or guidelines pursuant to subsection (b) of this section, and consistent with Executive Orders 12866 of September 30, 1993, as amended, and 13563 of January 18, 2011, you shall ensure, to the greatest extent possible, that you:

- (i) launch this effort through direct engagement with States, as they will play a central role in establishing and implementing standards for existing power plants, and, at the same time, with leaders in the power sector, labor leaders, non-governmental organizations, other experts, tribal officials, other stakeholders, and members of the public, on issues informing the design of the program;
- (ii) consistent with achieving regulatory objectives and taking into account other relevant environmental regulations and policies that affect the power sector, tailor regulations and guidelines to reduce costs;
- (iii) **develop approaches that allow the use of market-based instruments, performance standards, and other regulatory flexibilities;**
- (iv) ensure that the standards enable continued reliance on a range of energy sources and technologies;

NRDC's Proposal for Section 111(d) CO₂ Emission Standards

- Coal generating unit emission rate would decline from an average of 2,100 lb. CO₂/MWh in 2012 to 1,500 lb. in 2020 and 1,200 lb in 2025.
- Implementation through broad-based emissions “averaging” with other sources, across states, with credits for reductions achieved by energy efficiency.

NRDC Projected Power Generation Capacity, 2012 - 2020 (@ 1500 lb CO2/MWh)



NRDC Proposal

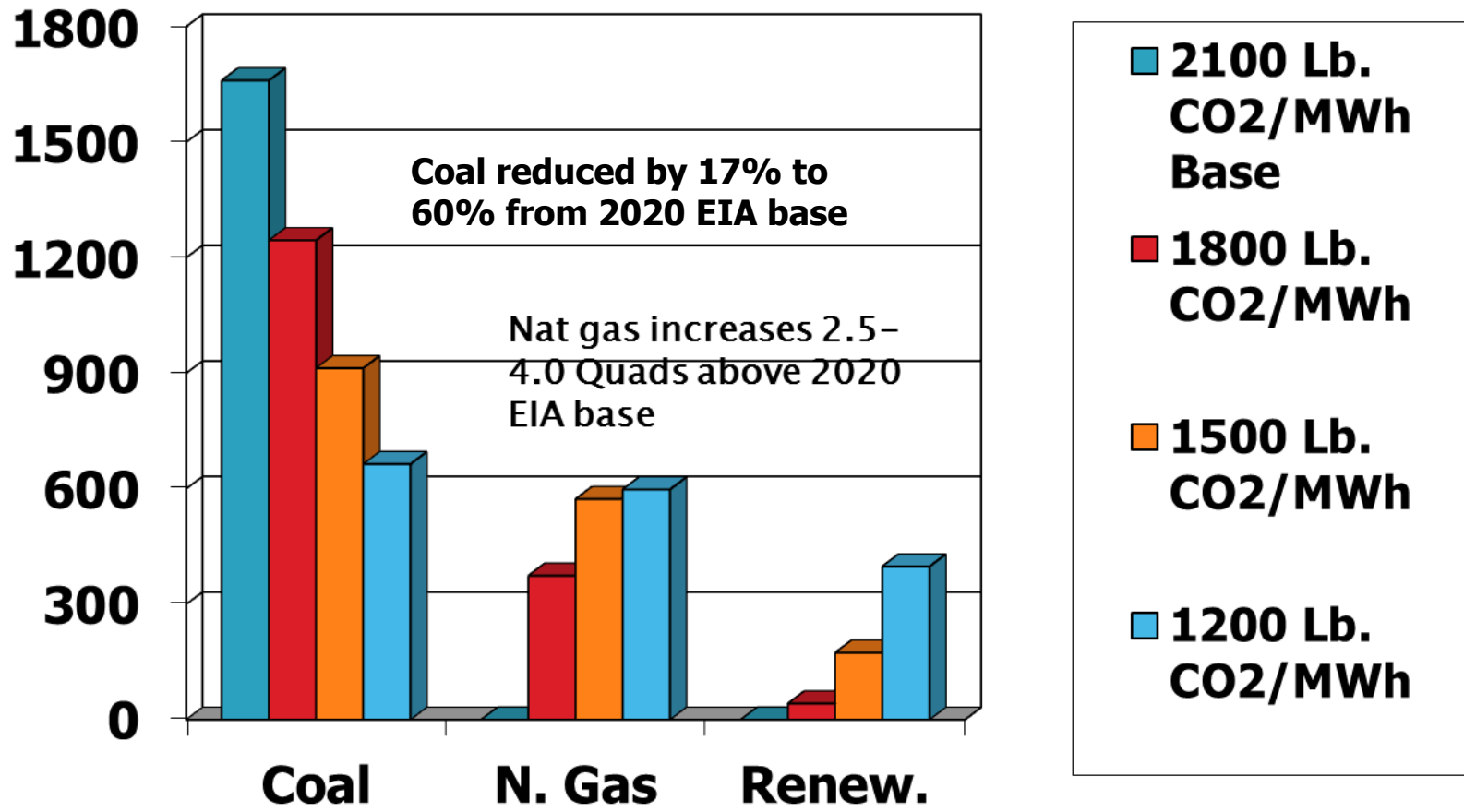
- ▶ Depends on huge investments in energy efficiency to achieve reductions, but has no regulatory driver. 89 GW is equivalent to more than twice the electricity generated in California in 2012.
- ▶ Standards do not reflect Section 111(d) requirements for source-specific “Best System of Emission Reduction” that is “adequately demonstrated.”

An Alternative Analysis of Potential Impacts*

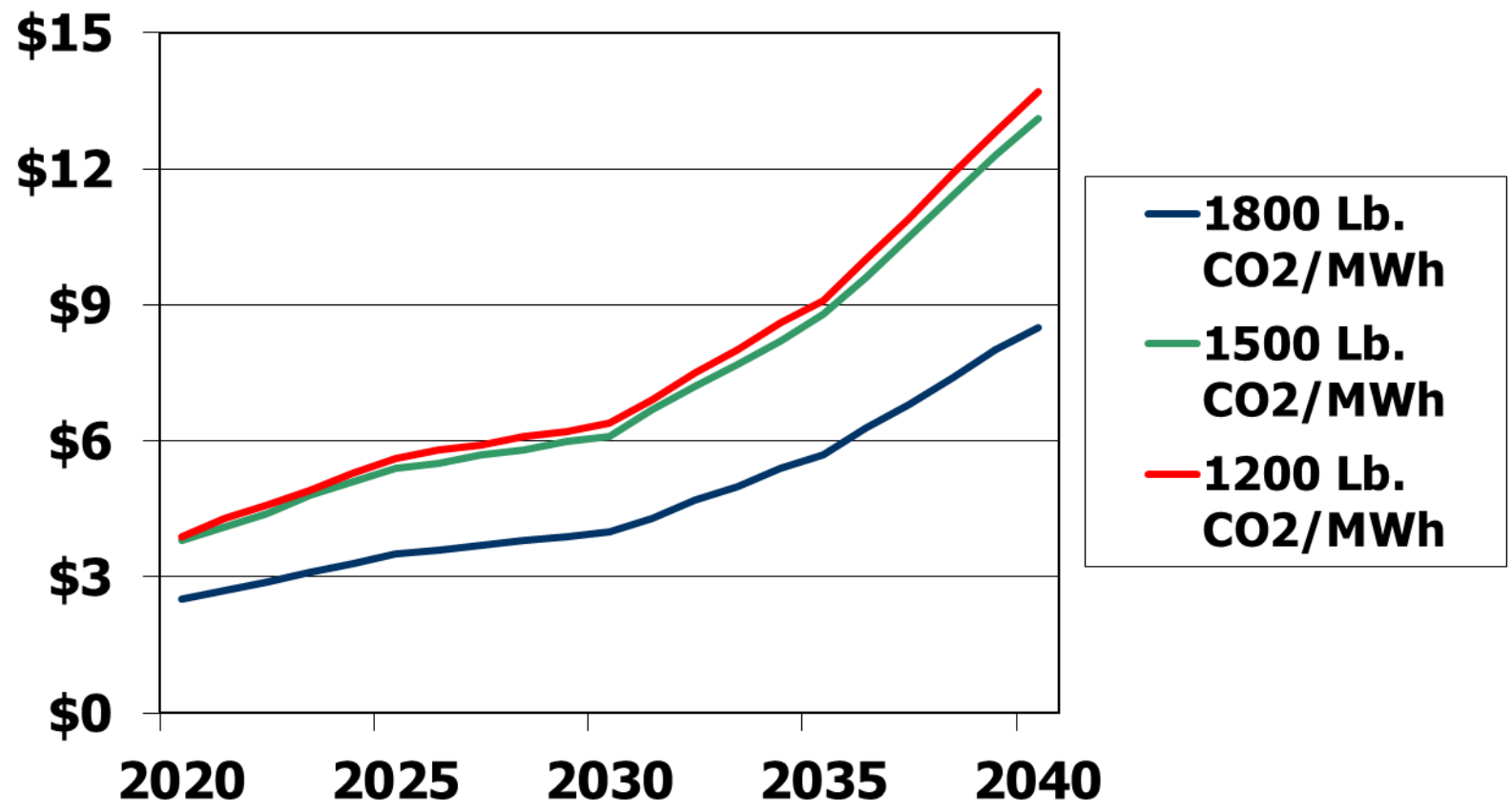
- Assume NRDC's proposed CO₂ emission rate limits with natural gas and renewables as principal alternatives.
- Estimate incremental costs for natural gas using DOE/EIA AEO 2013 reference case delivered fuel price projections to 2040, taking into account heat rate differential.

*Prepared by Gene Trisko for American Coalition for Clean Coal Electricity

Projected Generation Changes 2020 (Million Megawatt-Hrs)



Projected Incremental Cost of Natural Gas for Coal Displaced (Bil. 2010 \$)



NRDC Proposal

- Assumes industry-wide CO2 emission rate targets for existing coal-based generation that are not achievable with existing technology.
- Use of inter-source averaging and interstate trading may not be consistent with 111(d).
- 111(d) seems to call for unit-specific emission reduction assessments, while providing compliance flexibility such as plant-wide averaging “inside the fence.”

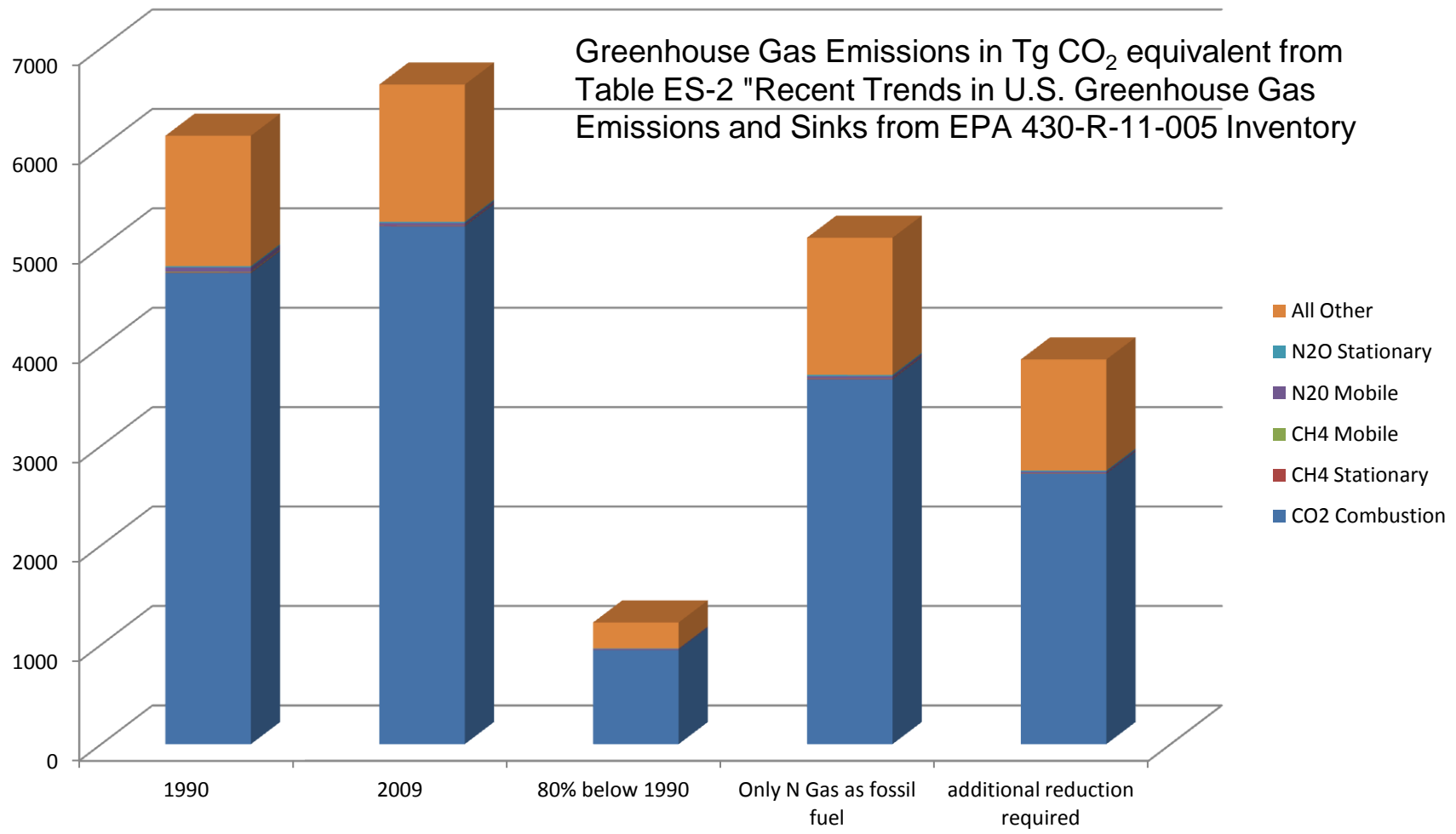
Section 111(d) Excerpt

(d)(1) The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 110 under which each State shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 108(a) or 112(b)(1)(A) but (ii) to which a standard of performance under this section would apply if such existing source were a new source, and (B) provides for the implementation and enforcement of such standards of performance. Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies.

Impact on Climate Change

- Is a rule which effectively prohibits the construction of new electrical generating facilities that use coal in the United States going to make a significant difference in emissions?
- The National Academy of Sciences report, “*America’s Climate Choices*” recommends that actions be taken now to start reducing U.S. greenhouse gas emissions to levels between 50% and 80% below 1990 levels.

Gas Only Is Not Enough



ECOS Resolution

- In the spring of 2012, the Environmental Council of the States (ECOS) passed resolution 12-1 “Challenges of Achieving Significant Greenhouse Gas (GHG) Emissions Reductions.”
- Resolution requests that the USEPA develop scenarios that will produce an 80 percent reduction in GHG emissions nationally, from a 2005 baseline, in 2050 or beyond; and to analyze costs and benefits of each scenario along costs and benefits of not obtaining these GHG reductions.

ECOS Resolution

- U.S. EPA has decided not to spend the resources required to develop the requested scenario, but rather to develop rules to reduce GHG emissions, even if these rules do not materially reduce U.S. emissions.
- The NSPS for EGUs effectively bans new coal fired facilities in the U.S. without any public plan to actually reduce U.S. (or world) GHG emissions to the levels advocated by the National Academy of Sciences.

SAVING LIVES AND REDUCING COSTLY HEALTH PROBLEMS



CARBON LIMITS WILL CUT OTHER POLLUTANTS AND...

save as many as 3,600 lives

prevent over 23,000 asthma attacks

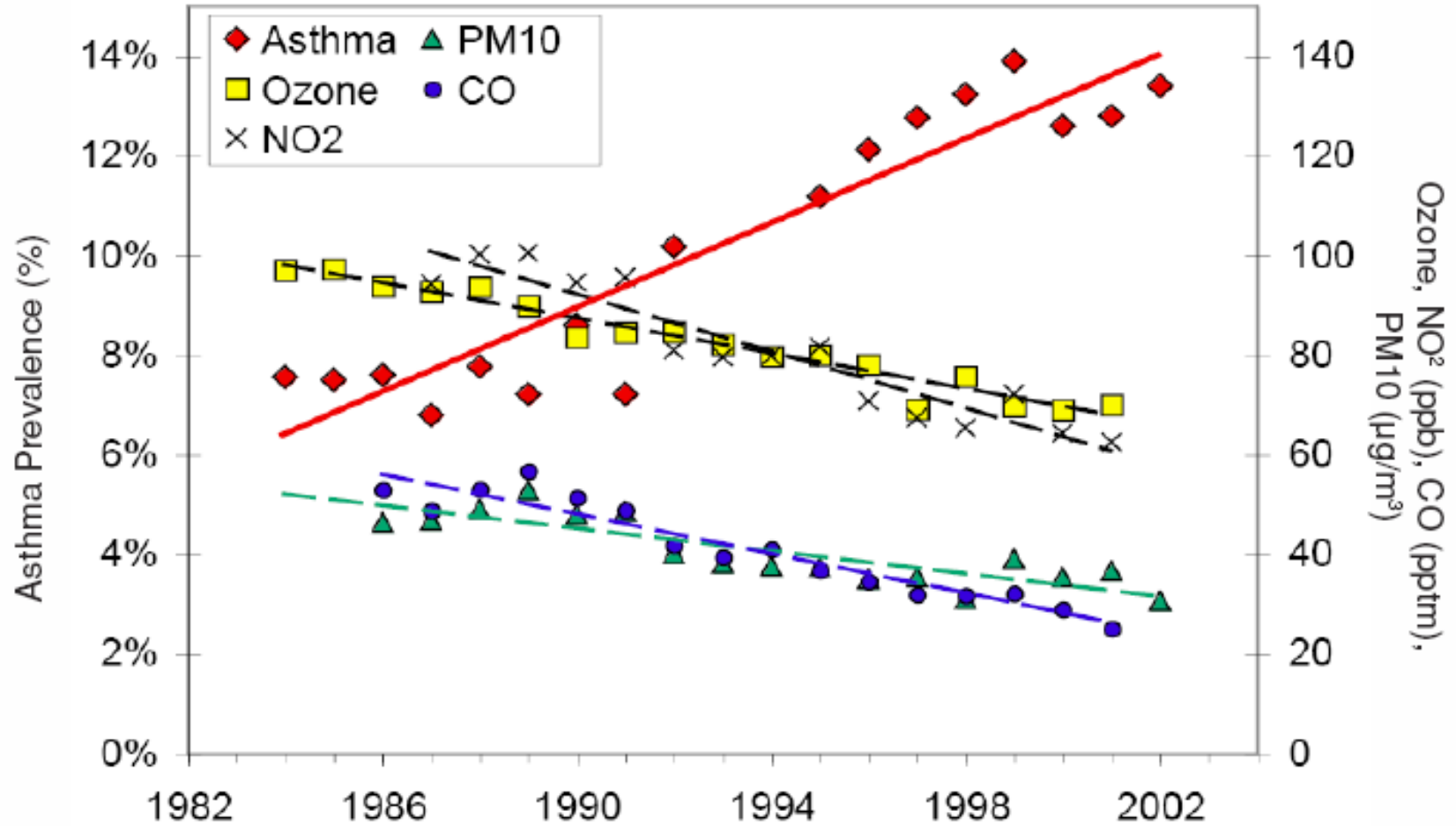
avoid over 2,300 emergency room visits and hospital admissions

prevent nearly 1.2 million restricted activity and work loss days

AVOIDING UP TO \$26 BILLION IN HEALTH DAMAGES FOR AMERICANS IN 2020 ALONE

A Statistical Note on Asthma

Figure 1. Trend in Asthma Prevalence vs. Trends in Air Pollution in California



Source: Schwartz, J. "The Health Effects of Air Pollution," (2006).

Conclusion

- Proposed new source performance standard will preclude new coal-fired EGUs
- Few details on President's existing source standard
- NRDC proposal depends on energy efficiency to achieve reductions, but has no regulatory driver.
- Coal retirements much larger if energy efficiency goals are not achieved
- Existing source proposal does not reflect CAA Section 111(d) requirements for Best System of Emission Reduction that is "adequately demonstrated."

Conclusion (cont.)

- States most dependent on coal will be hardest hit; some states will have little or no controls – regardless of their total CO2 emissions.
- The existing source GHG rule is subject to a consent decree, negotiated between EPA and environmental interests with no Congressional involvement.
- The proposal may force retirements of coal units that have just invested more than \$9 Billion for compliance with EPA's MATS rule.

Contact Information

David M. Flannery
Steptoe & Johnson PLLC
P.O. Box 1588
Charleston, WV 25326-1588

(304) 353-8171

Dave.flannery@steptoe-johnson.com