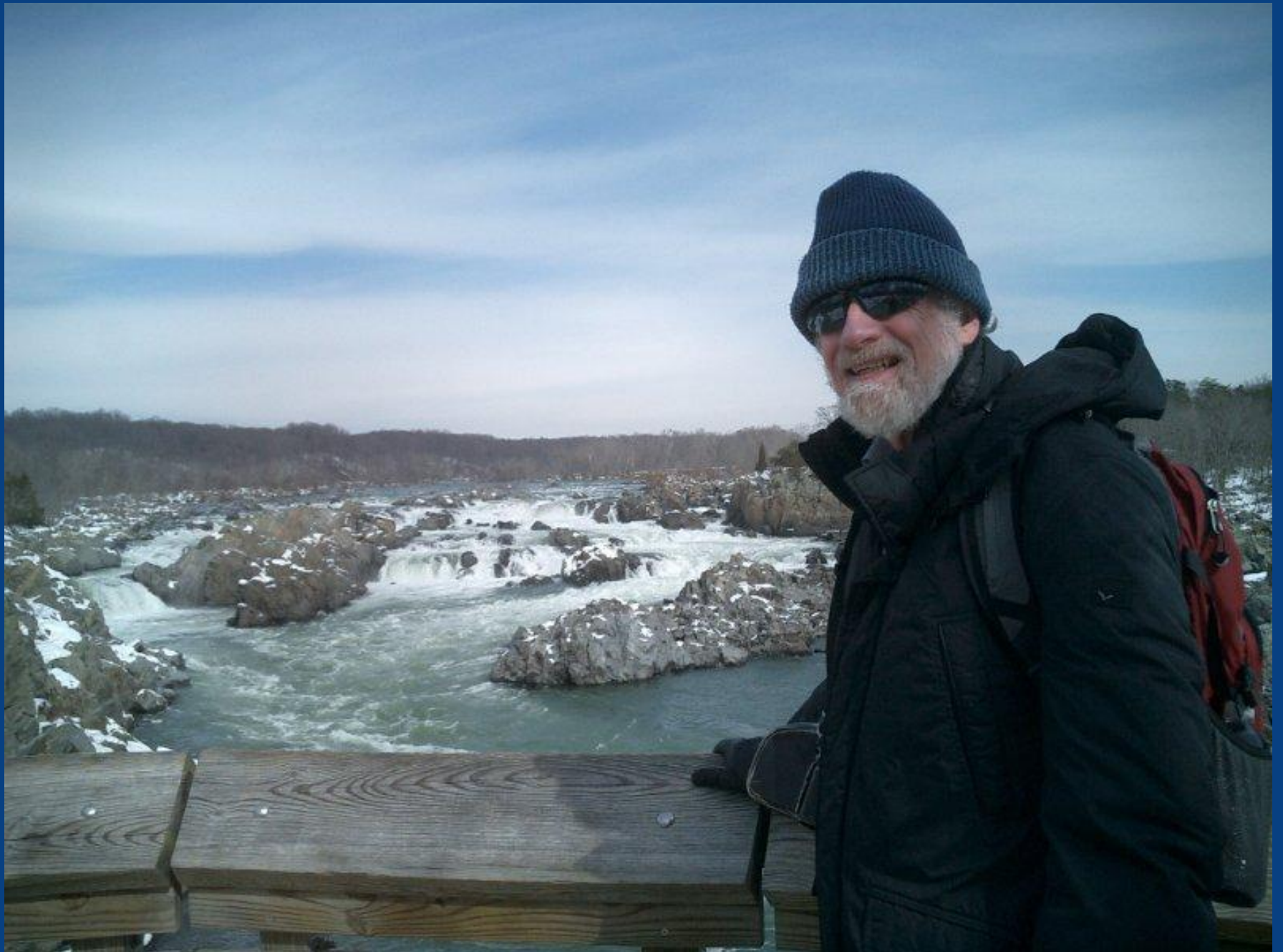


Greenhouse Gases and the Clean Air Act: An Overview

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FOR THE FUTURE

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I. Introduction:

Three misconceptions about GHGs and the CAA

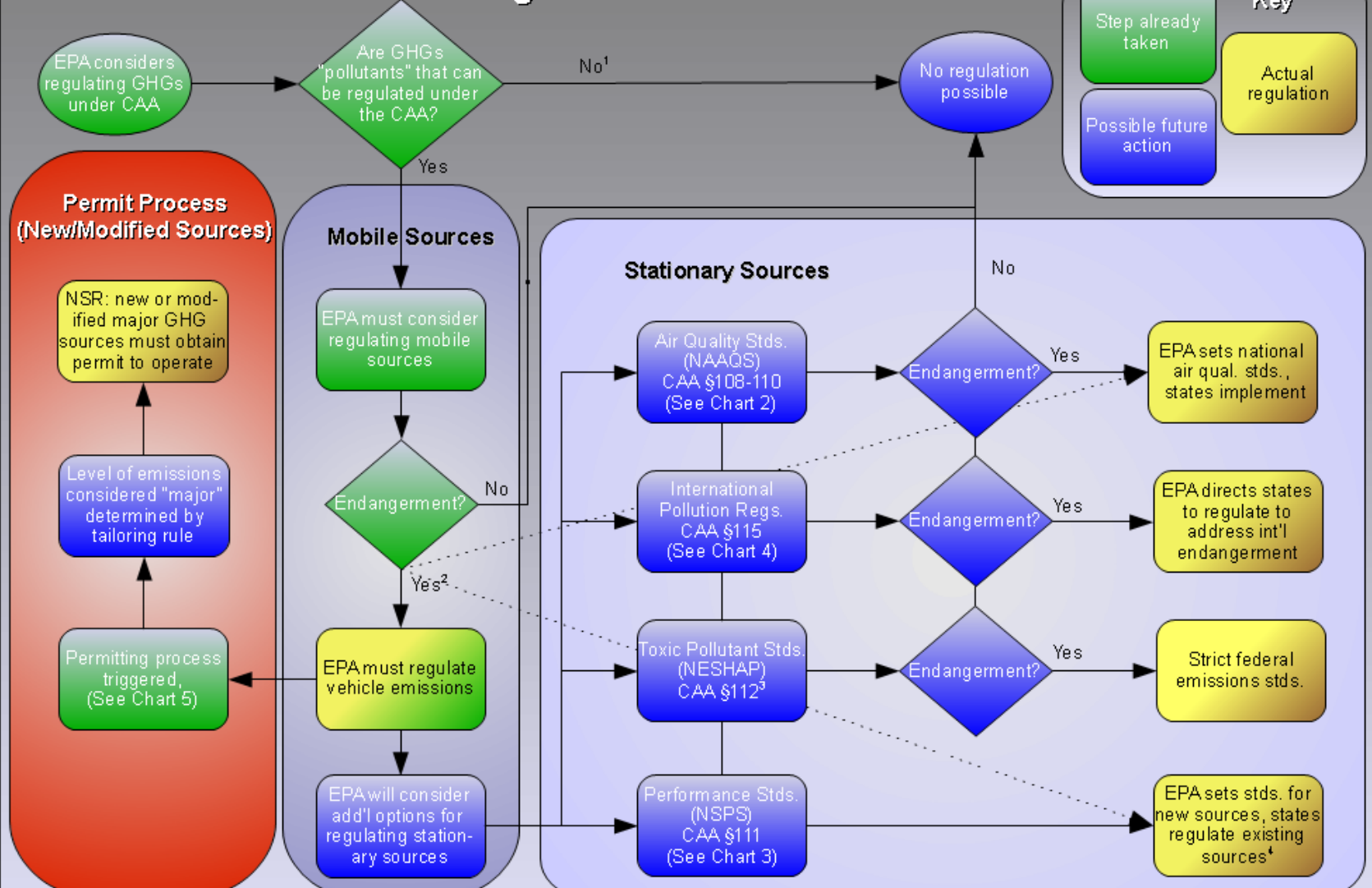
I. Introduction

- Three common misconceptions about CAA regulation of GHG emissions:
 - 1) The CAA is monolithic
 - 2) The CAA is known
 - 3) The CAA would (necessarily) be bad

I. Introduction

- #1: Is the CAA monolithic? No...
 - Includes many programs targeting different emissions sources and different pollutants
 - substantial overlap and triggering between these programs
 - EPA has lots of discretion, but it isn't unlimited

Chart 1: Overview of GHG Regulation under the Clean Air Act



Notes:

1. Foreclosed by *Massachusetts v. EPA*.
2. Some argue that an endangerment finding for mobile sources (under §202) legally requires the EPA to issue air quality standards (NAAQS), performance standards (NSPS), or both for stationary sources. These are open legal questions and will likely be the subject of lawsuits. If these lawsuits are successful, the EPA will be forced to implement NAAQS, NSPS, or both regulatory schemes for stationary sources.
3. The toxic pollutant regulatory scheme under CAA §112 is considered by the EPA and most scholars to be a poor fit for GHG regulation. For this reason, no separate chart has been drawn.
4. Regulation of existing sources with performance standards (CAA §111(d)) is not permitted when a national air quality standard (NAAQS) has been set under §110 or when §112 regulations are in place for a given pollutant.

I. Introduction

- #2: Is CAA regulation of GHGs well understood? No...
 - old law: 1970s vintage, last amended 20 years ago
 - Clinton, Bush, and now Obama-administration EPAs have had varying attitudes toward CAA and GHGs

I. Introduction

- EPA moves in 2009 and 2010 have clarified some of its plans for regulating GHGs.
 - We know the legal foundation
 - We know a lot about regulations for cars
 - We know something about regulation of new/modified facilities
 - We know very little about regulation of existing facilities.

Outline of GHG Regulation under the Clean Air Act

1970-2008: Legal Foundation

- Clean Air Act: statutory authority
- *Massachusetts v. EPA*
- Preemption?

Known



Mobile Sources

2009-2010: EPA Action

- Endangerment Finding
- New CAFE Standards
- Revised "Johnson Memo"

Understood

The Future

Stationary Sources

Preconstruction Permits (New/Modified Sources)

- Tailoring Rule
- BACT?

Regulatory Pathways (Existing Sources)

- At least four possible pathways
- NSPS appears most likely
- Legal challenges?

Unknown

I. Introduction

- #3: Would using the CAA to regulate GHGs would necessarily be bad (that is, less efficient than a carbon price)? Maybe not...
 - In the short term, smart EPA regulation could achieve similar results at similar cost
 - More on this later

II. What we Know:

Legal Foundations and Mobile Source Regs

Outline of GHG Regulation under the Clean Air Act

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II. What We Know

- CAA is the legal foundation for (almost) all EPA regulation of GHGs
 - Act *requires* the EPA to identify threats to public health or welfare from air pollution
 - ...and *requires* it to regulate pollutants if such threats are identified
 - *Mass v. EPA* determines that GHGs are subject to the CAA

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II. What We Know

- EPA has moved most aggressively for mobile sources
 - *Mass v. EPA* under CAA §202
 - 12/2009: §202 Endangerment Finding
 - 3/2010: New fleet emissions standards (CAFE)

II. What We Know

- New standards will take effect 1/1/2011
- More is coming:
 - Stricter standards for 2016 and beyond
 - Standards for heavy vehicles
- Mobile-source regulation is relatively well understood and politically uncontroversial

II. What We Know

- But mobile-source regulation cannot exist alone – it triggers other programs under the CAA
- EPA “Johnson Memo”: regulation of a pollutant anywhere under the CAA triggers consideration of that pollutant in permit process for new/modified stationary sources

III. What We Don't Know:

Stationary-source regulation

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III. What We Don't Know

- This means CAFE triggers NSR/PSD process
 - Preconstruction permits required for new and modified stationary-source GHGs
 - Starting in January 2011
 - Case-by-case BACT
 - Tailoring rule limits reach

III. What We Don't Know

- Industry is very worried about this, in large part because so much is unknown
 - Will the tailoring rule survive legal challenge?
 - Legal justification is flimsy; standing may be biggest hurdle
 - How difficult will GHG NSR be?
 - Definition of BACT is key
 - Will Congress get involved?

III. What We Don't Know

- But NSR/PSD is only a preconstruction permitting process
 - Only applies to new sources, or those undergoing major modification
 - What about the large number of existing emissions sources?
- Huge area of uncertainty – EPA has said almost nothing

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III. What We Don't Know

- EPA has at least 4 possible pathways under the CAA, but:
 - Some are a poor fit for GHGs
 - Some are legally problematic
 - Some are mutually exclusive

III. What We Don't Know

- The EPA could set a nationwide air quality standard (NAAQS) for GHGs
 - Traditional tool for conventional pollutants, but likely a poor fit for GHGs
 - What level?
 - How would states plan?
 - No apparent constituency
 - Could be forced by courts

III. What We Don't Know

- EPA could regulate GHGs as hazardous air pollutants
 - Also a poor fit – MACT, low threshold
- EPA could regulate GHGs under CAA §115 for international pollutants
 - Never-used provision
 - Legally questionable

III. What We Don't Know

- This leaves one program:
 - EPA could regulate using performance standards (NSPS)
 - These also apply to existing sources through the states

III. What We Don't Know

NSPS Advantages	NSPS Disadvantages
Established program	NAAQS legal risk
Relatively speedy	Some legal risk with trading
Relatively flexible	Can be highly technical
State involvement	
Generally solid legal basis	
EPA can consider costs	

III. What We Don't Know

- Anecdotal evidence points to performance standards as EPA's preferred pathway
 - President has requested funding
- NSPS revisions probably must include GHGs anyway

III. What We Don't Know

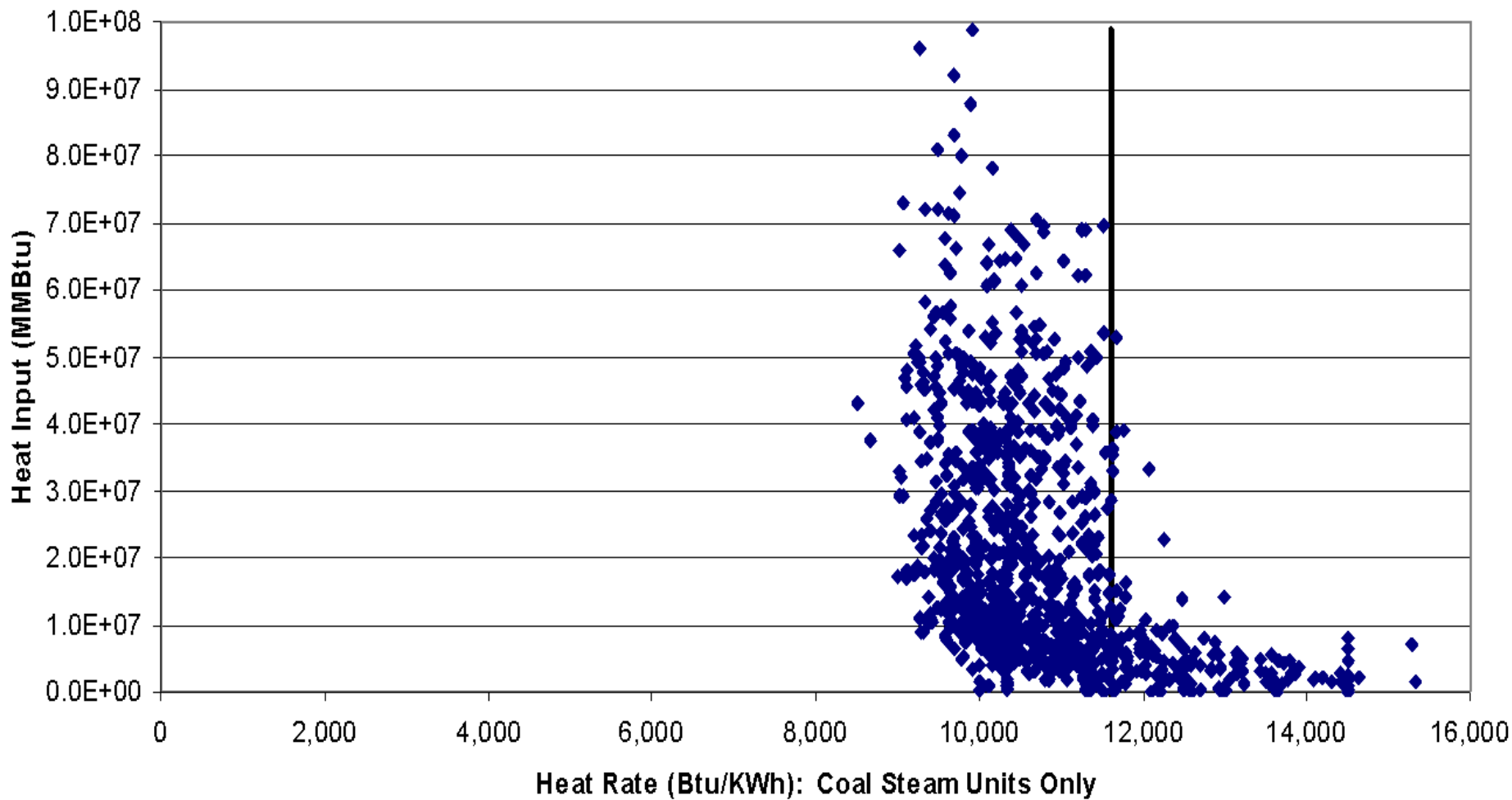
- Performance standards therefore appear to be the regulatory pathway that is most:
 - practical
 - predictable
 - and likely
- But EPA has yet to show its hand

IV. The Smart EPA:

How the agency can get results efficiently

IV. The Smart EPA:

- At RFF, we've studied how performance standards for GHGs might work in practice
 - we consider only one type of source: coal
- Two readily-identifiable opportunities in the coal sector:
 - 1) efficiency improvements
 - 2) biomass co-firing



IV. The Smart EPA:

- The conventional EPA approach could reach *efficiency gains only* with traditional tools:
 - Either all plants would be required to get more efficient
 - Or the least-efficient plants would be required to improve (or shut down)

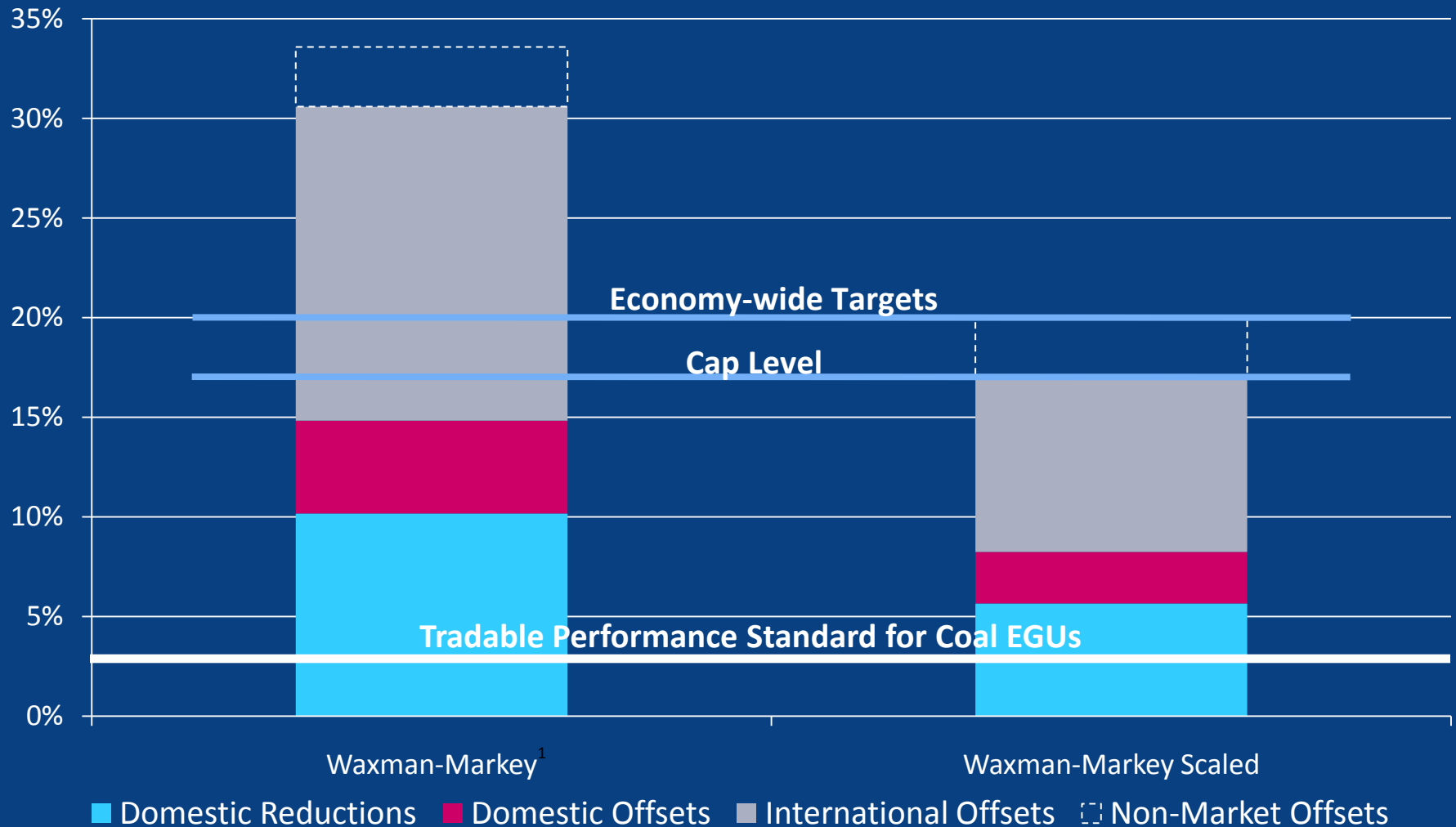
IV. The Smart EPA:

- The *smart* EPA could use limited market tools under the CAA to achieve efficiency gains *and* biomass co-firing
 - More emissions benefits, very likely at lower cost
 - Some legal risk since market-based regulation under NSPS has only been rarely used

IV. The Smart EPA:

- This regulation could result in:
 - Up to 10% lower GHG emissions from coal
 - Up to 3% lower total US GHG emissions
- This is a small, but nontrivial portion of the current 17%/2020 goal
- Similar to the reductions from the electricity sector in Waxman-Markey

Emission Reductions in 2020 (from 2005 Levels)



Note: Waxman-Markey EIA modeling results include banking

¹ EIA 2009. Energy Market and Economic Impacts of H.R. 2454 - Basic Case. <<http://www.eia.doe.gov/oiaf/servicerpt/hr2454/excel/hr2454cap.xls>>

IV. The Smart EPA:

- We have not estimated the costs of this regulatory approach, but they would likely be modest
- Short-term moves that would be made are probably the same as would be made under a carbon price

IV. Conclusions

IV. Conclusions

- 1) The CAA was not designed to address GHGs, and is an awkward tool, but until and unless Congress acts, the EPA must regulate.
- 2) There is significant continuing uncertainty about how GHG regulation under the CAA will work for stationary sources.

IV. Conclusions

- 3) EPA regulation of GHGs with the CAA need not be costly or inefficient, at least in the short term
 - For example, EPA can achieve an up to 10% reduction in GHG emissions from coal at costs likely similar to those under a carbon price
 - EPA can and should use market-based tools

IV. Conclusions

- 4) The CAA is a useful, but limited tool
 - new legislation is still superior:
 - Economywide carbon price is more efficient
 - Can include international offsets
 - Can include renewables

IV. Conclusions

- Regulating carbon is a big amendment to the social contract – legislation is preferable
- However, CAA can achieve real reductions until that legislation passes