



# **Regulating Greenhouse Gasses Under the Clean Air Act**

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# About NACAA

- ❑ National association of air pollution control agencies, located in Washington, D.C.
- ❑ 40 state agencies, Washington, D.C. and Territories
- ❑ 116 (of 117) local agencies
- ❑ Air Pollution control agencies are given “primary responsibility” under the Clean Air Act for implementation

# What I Will Cover

- ◆ GHG Regulatory History
- ◆ Overview of CAA § 111
- ◆ Proposed EPA carbon limits for new power plants
- ◆ Proposed EPA carbon limits for existing power plants
- ◆ Legal challenges to both rules

# Massachusetts v. EPA, 549 U.S. 497 (2007)

- 1999 petition to regulate GHG emissions under § 202(a)(1) of CAA
  - ◆ the EPA “shall by regulation prescribe . . . standards applicable to the emission of any air pollutant from any class . . . of new motor vehicles . . . which in [the EPA Administrator’s] judgment cause[s], or contribute[s] to, air pollution . . . reasonably . . . anticipated to endanger public health or welfare,” 42 U. S. C. § 7521(a)(1)
  - ◆ “air pollutant” defined at CAA § 302(g)
- EPA denied the petition in 2003
- Supreme Court found that:
  - ◆ GHGs are an “air pollutant” under § 302(g)
  - ◆ EPA lacks the discretion to decide whether to exercise its judgment under § 202(a)(1) to determine whether GHGs “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.”
  - ◆ EPA ordered to express its judgment on the endangerment question

# Endangerment Finding

- ❑ Finalized December 15, 2009
- ❑ The emission of six anthropogenic GHGs are causing climate change
  - ◆ Carbon dioxide (CO<sub>2</sub>)
  - ◆ Methane (CH<sub>4</sub>)
  - ◆ Nitrous oxide (N<sub>2</sub>O)
  - ◆ Hydrofluorocarbons (HFCs)
  - ◆ Perfluorocarbons (PFCs)
  - ◆ Sulfur hexafluoride (SF<sub>6</sub>)
- ❑ Combined emissions of these substances from motor vehicles will contribute to human health and welfare effects including higher temperatures, more extreme weather events, sea level rise and greater demand for water

# Mobile Source GHG Standards

## □ Phase One:

- ◆ Establishes CO<sub>2</sub> emission standards for light duty trucks and cars, commencing MY2012 (October 1, 2011)
- ◆ Essentially a fuel efficiency standard, which will increase from 30.1 to 35.5 MPG in 2012-2016
- ◆ Expected to reduce CO<sub>2</sub> emissions by 950 million metric tons over the lifetime of the MY2012-2016 vehicles

## □ Phase Two:

- ◆ GHG emissions standards for MYs 2017-2025 finalized in October 2012
- ◆ Incentivizes production of electric and fuel cell vehicles
- ◆ Requirement of 54.5 mpg by 2025

# CAA Cross-Triggering

## □ **Timing Rule (2010)**

- ◆ GHGs “subject to regulation” on January 2, 2011, when the LDV standards go into effect.
- ◆ As of January 2, 2011, pending PSD permits for new or modified sources subject to GHG BACT
- ◆ States must implement a PSD program for GHGs by January 2, 2011
- ◆ PSD is triggered based on GHG emissions alone (that is, GHG emissions can cause a source to be a major source)

## □ **Tailoring Rule (2010)**

- ◆ The Tailpipe Rule would increase Title V sources from 15,000 to six million, PSD permits from 300 per year to 40,000 per year
- ◆ EPA proposed Lower regulatory threshold levels in phases:
  - ✓ Phase I (January 2011-June 2011): 75,000 tpy CO<sub>2</sub>e and otherwise subject to PSD
  - ✓ Phase II (July 2011-June 30, 2013): Phase I sources plus 100,000 tpy CO<sub>2</sub>e new sources or 75,000 tpy CO<sub>2</sub> net emission increase sources
  - ✓ Phase III (July 1, 2012): Consider permanent exclusion of small sources
  - ✓ Phase IV (April 30, 2016): Final implementation rule

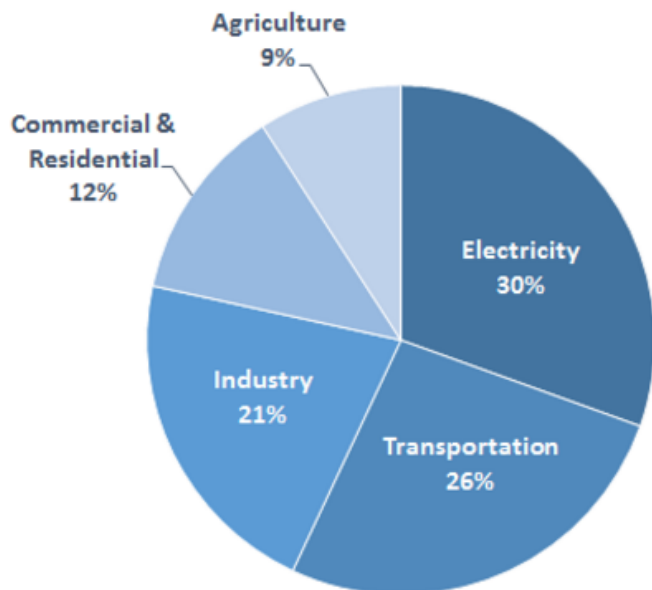
# Utility Air Regulatory Group v. EPA (2014)

- ❑ EPA cannot “tailor” statutory emission thresholds
- ❑ EPA cannot require stationary sources to obtain Prevention of Significant Deterioration (PSD) and Title V permits based solely on their potential greenhouse gas (GHG) emissions
- ❑ Sources already subject to stationary source permitting requirements due to their emissions of conventional pollutants can be required to install best available control technology (BACT) for GHGs, if the source emits more than a de minimis amount of GHGs

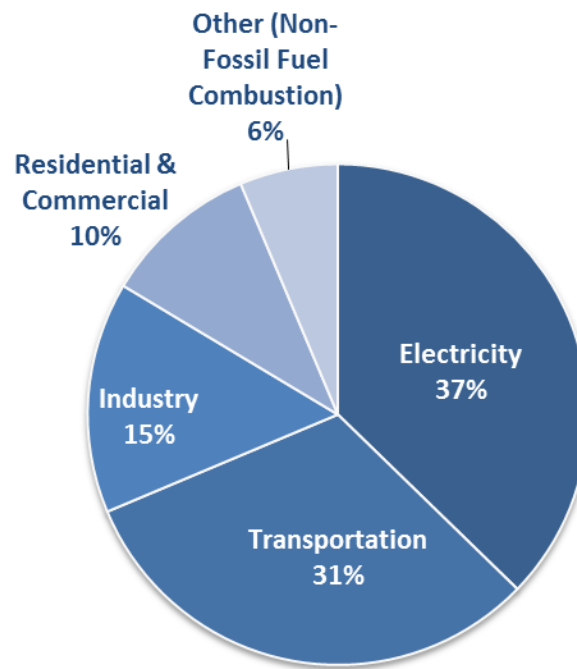


# Why Focus on the Power Sector?

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2014



U.S. Carbon Dioxide Emissions, By Source



Source: Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014, U.S. EPA

# Section 111 of the Clean Air Act (42 U.S.C. § 7411)

- Section 111(b) – New Sources (includes modified and reconstructed sources)
  - ◆ Applies to any category of sources that “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare”
  - ◆ EPA establishes “Federal standards of performance” for each source category
- Section 111(d) – Existing Sources
  - ◆ Applies to “any existing source for any air pollutant...”
    - ✓ Not covered by a NAAQS; or
    - ✓ Not “emitted from a source category which is regulated under section ...[112] of ... [the Clean Air Act]”
    - ✓ “but to which a standard of performance ... would apply if such existing source were a new source”
  - ◆ EPA issues emission guidelines (40 C.F.R. Part 60, Subpart B) and each state sets its standards of performance consistent with EPA guidelines
  - ◆ EPA may “prescribe a plan for a State in cases where the State fails to submit a satisfactory plan” or if a state fails to enforce its plan

# Best System of Emission Reductions

- Standard of Performance (42 U.S.C § 7411(a)(1))
  - ◆ “The term ‘standard of performance’ means a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.”
- Best System of Emission Reduction (BSER) is a key legal term for both § 111(b) and (d).
  - ◆ 111(b) – EPA uses BSER to set the “standard of performance” for new, modified, and reconstructed sources
  - ◆ 111(d) – EPA uses BSER to sets the guidelines by which state “standards of performance” will be evaluated for approval

# 111(b) Standard for New Units

- Proposal published in the *Federal Register* January 8, 2014; final rule published on October 23, 2015

	New	Modified	Reconstructed
Coal-fired units	1,400 lbs CO <sub>2</sub> /MWh based on partial application of carbon capture and storage	Future performance consistent with past performance measured from 2002 until the time of modification	1,800 lbs CO <sub>2</sub> /MWh or 2,000 lbs CO <sub>2</sub> /MWh depending on size
Natural Gas-fired units	1,000 lbs CO <sub>2</sub> /MWh based on natural gas combined cycle technology	n/a	1,000 lbs CO <sub>2</sub> /MWh

# North Dakota v. EPA

- ❑ 25 states led by North Dakota and West Virginia challenged the 111(b) rule in the D.C. Circuit on October 23, 2015
- ❑ Original court-ordered schedule required all briefs by October 21, 2016
- ❑ The D.C. Circuit halted the briefing schedule on June 24, 2016 while separate administrative challenges to the rule proceed
  - ◆ Motions to consolidate due July 12, 2016
  - ◆ Motions to amend briefing schedule and format due August 4, 2016
- ❑ No oral argument date has been scheduled

# Key Legal Arguments

- ❑ **Definition of BSER:** EPA's reliance on Carbon Capture and Storage (CCS) for coal-fire units was not "adequately demonstrated."
  - ◆ CCS is not commercially available or technically feasible
  - ◆ EPA forbidden from relying on CCS projects that received DOE funding
- ❑ **Arbitrary and Capricious:** Separate demonstrations of the technology (capture, transmission and storage) was arbitrary and capricious

# 111(d) Standard for New Units

- ❑ Called “The Clean Power Plan”
- ❑ Proposed on June 18, 2014; final rule published in the *Federal Register* on October 23, 2015
- ❑ States must submit compliance plans to meet EPA CO<sub>2</sub> emission targets but have significant flexibility
- ❑ Federal compliance plans apply to states who choose not to or fail to submit an approvable plan
- ❑ First state plan submittal deadline on September 6, 2016, but all states can extend the deadline two years to September 6, 2018
- ❑ Power plants not subject to the rule until January 1, 2022
- ❑ EPA estimates that CO<sub>2</sub> emissions from existing power plants will decrease 32 percent below 2005 levels by 2030 with the rule in place

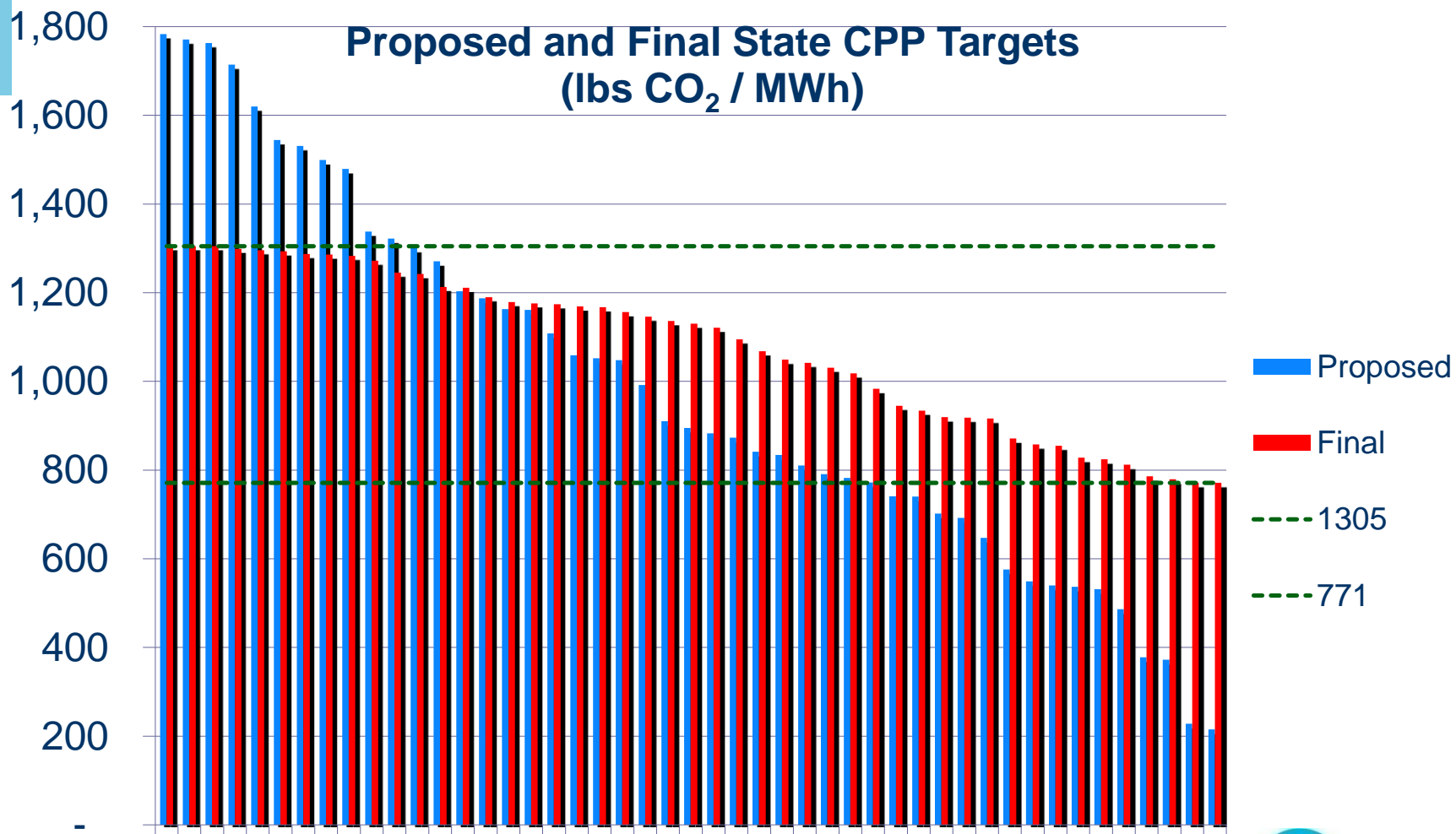
# Clean Power Plan Deadlines

September 6, 2016	Initial submittal (extension request) or final state plan due
September 6, 2017	State progress reports due (extension states)
September 6, 2018	Final state plans due (extension states)
January 1, 2022 to December 31, 2024	Interim Step One
January 1, 2025 to December 31, 2027	Interim Step Two
January 1, 2028 to December 31, 2029	Interim Step Three
January 1, 2030 to December 31, 2031	Final Period



# State Target Development

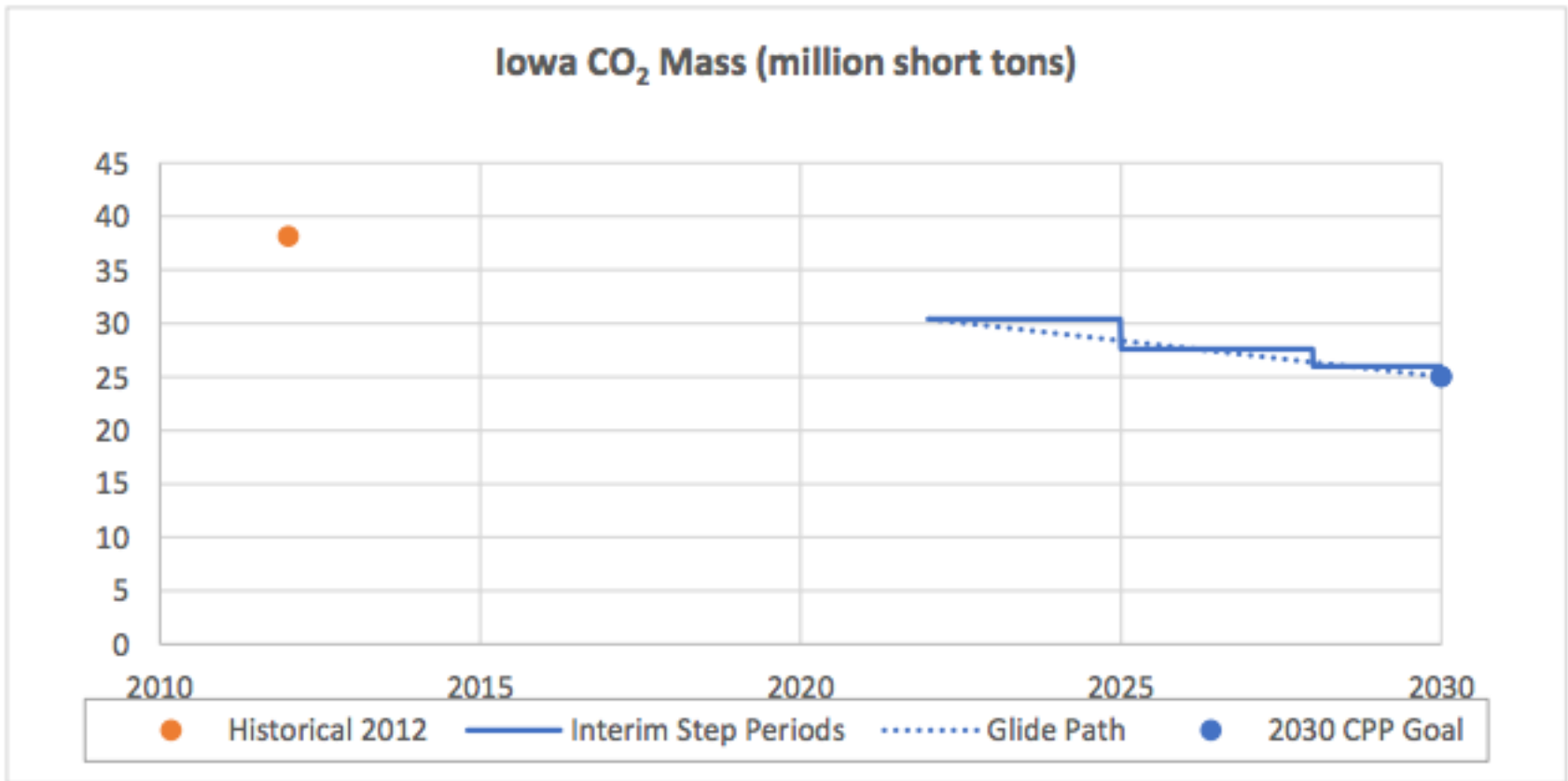
	Proposed Rule	Final Rule
BSER Based on	<ul style="list-style-type: none"> <li>• <b>Heat rate improvements</b> at each power plant (Building Block One)</li> <li>• <b>Generation shifting</b> from affected coal-fired units to natural gas-fired units (Building Block Two)</li> <li>• <b>New zero/low-emitting energy generation</b> (Building Block Three)</li> <li>• Reducing demand through <b>energy efficiency</b> (Building Block Four)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Heat rate improvements</b> at each power plant (Building Block One)</li> <li>• <b>Generation shifting</b> from affected coal-fired units to natural gas-fired units (Building Block Two)</li> <li>• <b>New zero/low-emitting energy generation</b> (Building Block Three)</li> </ul>
...used to develop the following state compliance options:	<ul style="list-style-type: none"> <li>• A <b>state-specific rate-based goal</b> applied uniformly to coal- and natural gas-fired power plants</li> <li>• An unspecified option to adopt an “equivalent” <b>state-specific mass-based goal</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Two separate, nationally uniform rate-based goals</b> for coal- and natural gas-fired power plants plus three “equivalent” state-specific options:               <ul style="list-style-type: none"> <li>• A <b>single rate-based goal</b> applicable to both coal- and natural gas-fired power plants</li> <li>• A <b>mass-based goal</b> applicable to existing sources</li> <li>• A <b>mass-based goal</b> applicable to new and existing sources</li> </ul> </li> </ul>



# Example State Goal Options

Proposed Rule	Final Rule
	1,305 lbs CO <sub>2</sub> /MWh (Coal) and 771 lbs CO <sub>2</sub> MWh (Natural Gas)
1,301 lbs CO <sub>2</sub> /MWh	1,283 lbs CO <sub>2</sub> /MWh
Unspecified mass-based target	50,036,272 Short tons of CO <sub>2</sub> (Existing Sources Only)
	50,563,762 short tons of CO <sub>2</sub> (Existing and New Sources)

# Example State Mass-Based Goal



Source: EPA's Iowa Clean Power Plan Fact Sheet

# Rate v. Mass

## □ Rate-based compliance:

- ◆ Each affected power plant must show that:

$$CO_2 \text{ emission rate} = \frac{\sum M_{CO_2}}{\sum MWh_{op} + \sum MWh_{ERC}}$$

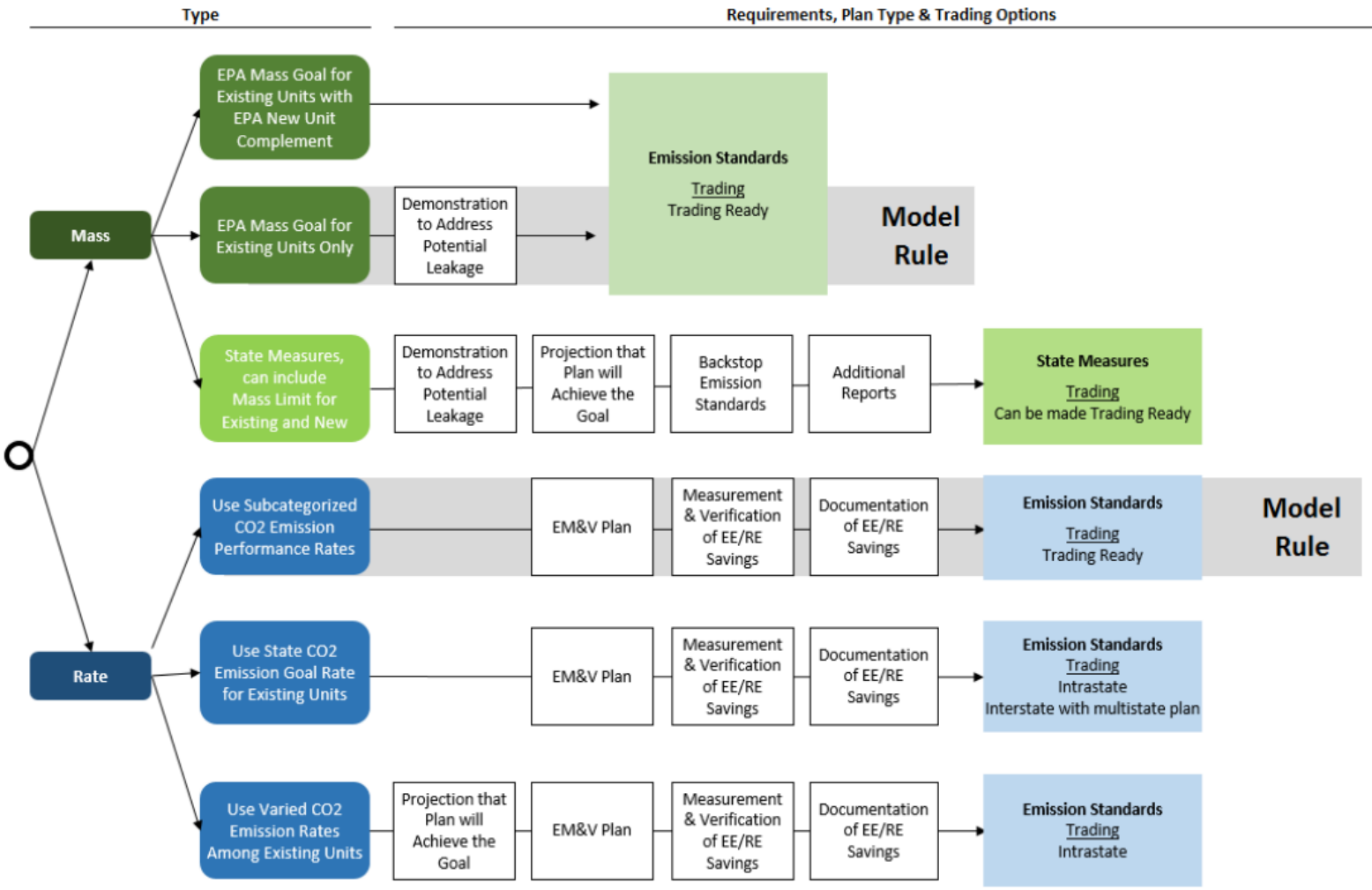
- ◆ No hard limit on CO<sub>2</sub> emissions
- ◆ States must certify and track “emission reduction credits” or ERCs

## □ Mass-based compliance:

- ◆ Affected power plants must surrender one allowance for each ton of CO<sub>2</sub> emitted
- ◆ States cannot exceed their total CO<sub>2</sub> allowance budget

# Key State Design Choices

- ❑ Which compliance target do I adopt?
  - ◆ Rate or mass?
- ❑ How much trading do I allow?
  - ◆ Between affected power plants?
  - ◆ Between states?
- ❑ What regulatory instruments will I rely on?
  - ◆ Impose direct emission limits on power plants?
  - ◆ Adopt state measures?
- ❑ What are my policy objectives?



Source: EPA

# West Virginia v. EPA

- ❑ First petitions filed on October 23, 2015, the CPP's *Federal Register* publication date
  - ◆ 100+ parties filed dozens of petitions challenging the rule
  - ◆ 27 state petitioners led by West Virginia and Texas
  - ◆ 18 states intervened in support of EPA
- ❑ Included a request for an immediate stay
  - ◆ Denied by D.C. Circuit on January 21, 2016
  - ◆ Granted by Supreme Court on February 9, 2016
- ❑ Oral argument scheduled for September 27, 2016



# Key Legal Arguments – CPP Challenge

- ❑ **112 Exclusion:** EPA may not use Section 111 to regulate source categories it has already chosen to regulate under Section 112
- ❑ **Definition of BSER:** The reductions must be implemented at the source (i.e., building blocks two and three are not authorized by Section 111(d))
- ❑ **Federalism:** The rule intrudes on the states' traditional regulatory role
- ❑ **Notice and Comment:** The final rule was not a reasonably foreseeable evolution of the proposed rule
- ❑ **Additional BSER Challenges:** The building blocks are not adequately demonstrated; the standards are not achievable by sources
- ❑ **Constitutional Challenges:** The CPP commandeers state resources

“Relying on an obscure provision of the Clean Air Act, EPA’s Rule seeks to effect an ‘aggressive transformation’ of the mix of electricity generation in nearly every State by systematically ‘decarboniz[ing]’ power generation and ushering in a new “clean energy” economy.” (citations omitted)

-- Petitioners’ Brief on Core Legal Issues (February 19, 2016)

“Petitioners’ core legal arguments largely rest on hyperbolic mischaracterizations of this Rule as broadly regulating energy markets and generation. This Rule is an air-pollution rule specifically authorized by the CAA. It is not an energy rule.”

-- EPA’s Brief (March 28, 2016)

# Additional Resources

- ❑ [NACAA's Implementing EPA's Clean Power Plan: Model State Plans](#)
- ❑ Litigation Briefs:
  - ◆ [Petitioners' Brief on Core Legal Issues](#)
  - ◆ [Petitioners' Brief on Procedural and Record based Issues](#)
  - ◆ [EPA's Brief](#)

# For Further Information

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