

Annual
**Georgia
Environmental
Conference**

Sustaining the Future for the People of Georgia™



Air Regulation Update

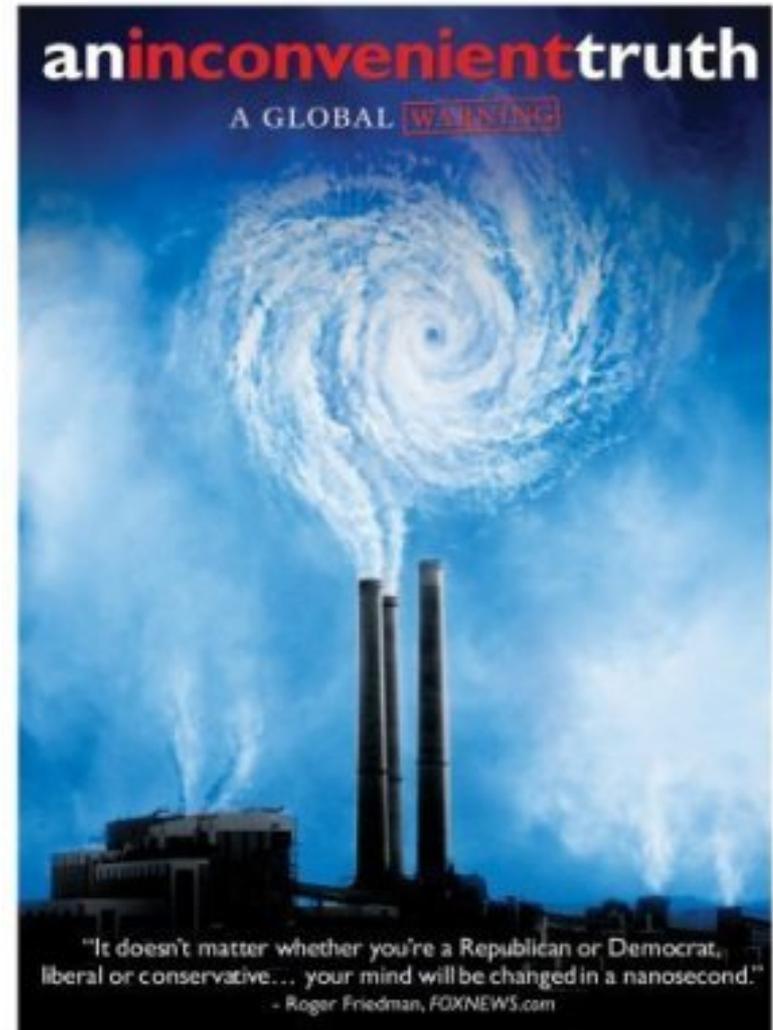
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Greenhouse Gases



GHG Permitting

- ***Initially*** upheld by D.C. Circuit
- Over **100 permits** issued by EPA & States
- Lots of paper, but few real constraints
 - “Potential-to-emit” limits; efficiency limits
 - opportunities for challenge
 - more than just utilities:
 - OCI Beaumont LLC (methanol/ammonia)
 - Formosa Plastics Corporation (olefin)
 - ONEOK Hydrocarbon (natural gas liquids)
 - Voestalpine (iron production plant)
 - C3 Petrochemicals LLC (PDH plant)



GHG Permitting

- GHG Control Technology (BACT)
 - “NEPA”-like analysis of control options
 - What about carbon capture & sequestration?
 - EPA considers CCS “available” under Step 2
 - Must reject based on cost under Step 4
 - Energy efficiency?
 - Entire plant, not just new/modified unit?
 - Technology choice?
 - Pollution controls?
 - Lightbulbs?



GHG Permitting

- ***UARG v. EPA, 134 S. Ct. 2427 (2014)***

✗ **NO Permit “TRIGGER”**: “[EPA] may not treat [GHGs] as a pollutant for purposes of defining a ‘major emitting facility’ (or a ‘modification’ thereof)”

✓ **GHG BACT SURVIVES**: “EPA may, however, continue to treat [GHGs] as a ‘pollutant subject to regulation under this chapter’ for purposes of requiring BACT”



GHG Permitting

Who won?

EPA's Response

- “Today, the Supreme Court largely upheld EPA's approach to focusing Clean Air Act permits on only the largest stationary sources of greenhouse gases such as power plants, refineries, and other types of industrial facilities. The Supreme Court's decision is a win for our efforts to reduce carbon pollution.”

Supreme Court Opinion

- “Since, as we hold above, the statute does not compel EPA's interpretation, it would be patently unreasonable—not to say outrageous—for EPA to insist on seizing expansive power that it admits the statute is not designed to grant.”

GHG Permitting

What's Next?

EPA's Response

Dept. of Justice Spokeswoman
Ellen Canale:

- "Today's decision in no way affects the emissions standards proposed by the agency earlier this month."

Supreme Court Opinion

- When an agency claims to discover in a long-extant statute an unheralded power to regulate "a significant portion of the American economy," ... we typically greet its announcement with a measure of skepticism. We expect Congress to speak clearly if it wishes to assign to an agency decisions of vast "economic and political significance."

GHG Regulation Under § 111

- **§111(b) New Source Performance Standards (NSPS)**

- “Performance Standards” set by **EPA** reflecting ...
 - The degree of “emission limitation achievable” ...
 - through “application” ...
 - of the “best system of emission reduction” ...
 - that has been “adequately demonstrated”
- “New sources” include “modifications” of existing sources
- Must be established before §111(d)



- **§111(d) Emission Guidelines (EG or ESPS)**

- **STATES** set the “Performance Standards;” EPA sets “procedure” and issues “emission guidelines”
- States may take into account remaining useful life



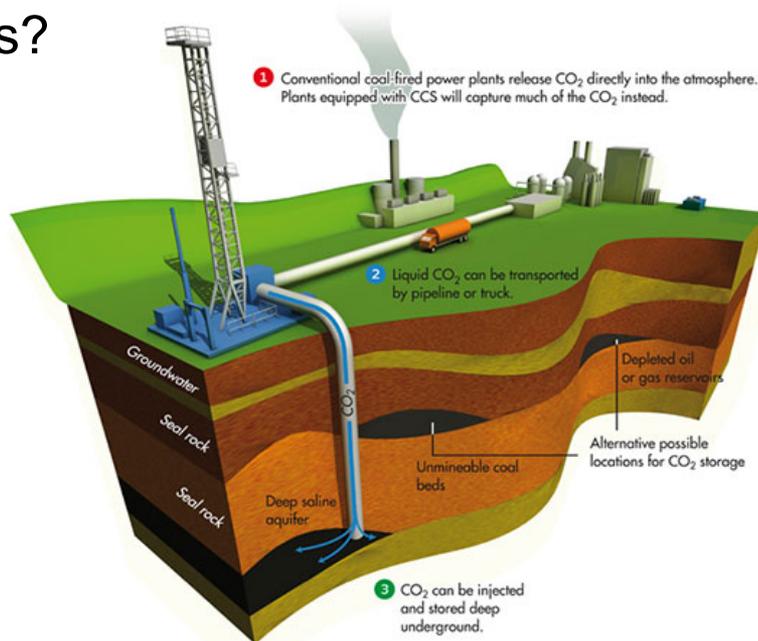
§111(b) NSPS



Coal-Fired Units

September 2013 “re-proposal” for partial carbon capture & sequestration for all new coal-fired units (1,100 lb/MWh)

- Is CCS “demonstrated” and “achievable”?
- Precedent for ~80 other categories?

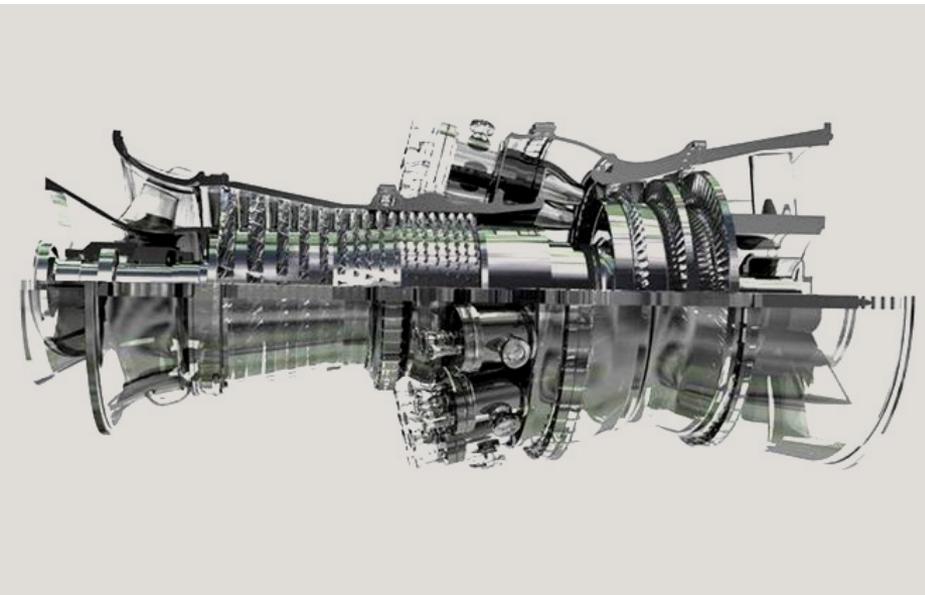


§111(b) NSPS



Natural Gas-Fired Units

- 1,000 for >850 mmBtu/hr & 1,100 for <850 mmBtu/hr
- No additional controls required for combined cycle (CC) units
- Should not apply to simple-cycle turbines (CTs), although not automatic – depends on capacity factor (33%)



§111(b) NSPS



Modifications & Reconstructions

- **COAL:** 2% efficiency improvement, but need not do any better than 1,900 or 2,100 lb/MWh, depending on size
- **NATURAL GAS:** combined cycle technology to meet 1,000 lb/MWh

“EPA expects few units would trigger either the modification or the reconstruction provisions that we are proposing today”



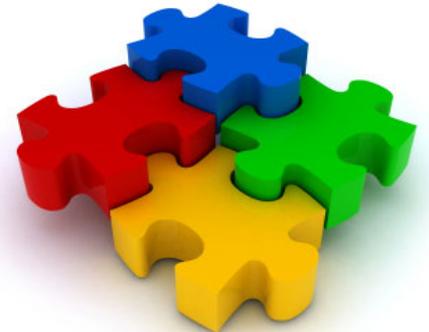
§111(d) EG



State-by-State Goals

Each state must meet a mandatory “carbon-intensity” goal (lb/MWh) set through four “building block” assumptions:

1. Improve **efficiency** at coal plants by 6%
2. **Re-dispatch** natural gas to 70%, displacing coal
3. Increase **renewables** and maintain **nuclear** capacity
4. Increase demand-side **energy efficiency** to 1.5%

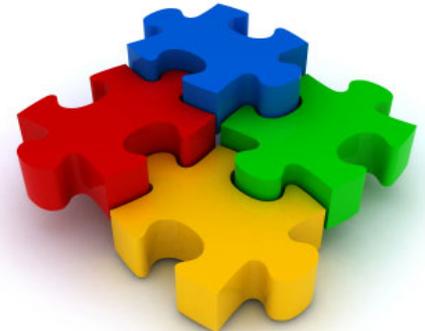


§111(d) EG



Building Block #1: Heat Rate Improvements of 6%

- Assumes 4% improvement based on eliminating variability in heat rate
 - Based on reducing variability to match best 10% of units
- Assumes 2% improvement based on capital projects
 - Based on assumption that only half have already been done



§111(d) EG



Building Block #2: Re-dispatch of Natural Gas to 70%

- Existing natural gas combined cycle units must increase from an average of 35% run-time to 70% run-time
- EPA assumes 70% is possible because 10% of the units in the country operate at that level
- EPA assumes sufficient natural gas is available
- Under-construction natural gas included in the analysis, but not new natural gas



§111(d) EG



Building Block #3: Zero-Emitting (Renewable / Nuclear)

Renewable

- Existing renewable counts
- Regional targets set (10% for the southeast) and growth factor needed to reach targets applied to each state

Nuclear

- Existing nuclear does not count, except for 5.8% assumed to be “at risk” for retirement
- NEW nuclear counts 100% (5 units)



§111(d) EG



Building Block #4: Demand-Side Energy Efficiency

- EPA assumes 1.5% annual reduction in demand is possible based on a few states' achievement
- Each state must improve 0.2% each year until 1.5%
- Total improvement over life of the program is ~10%



§111(d) EG



Costs & Benefits

EPA claims:

- Benefit: 30% reduction in CO₂ by 2030
- Benefit: \$34-\$66 billion in climate and health benefits
- Cost: \$7.1-\$8.8 billion ANNUAL compliance costs

but ...



§111(d) EG



Costs & Benefits

“Even if the U.S. were to reduce its greenhouse gas emissions to zero, that step would be far from enough to avoid substantial climate change.”

—EPA Social Cost of Carbon TSD

- Benefit calculation based on 2005; rule based on 2012
- Climate benefit calculations based on GLOBAL benefits
- Health benefits based on lower DM in attainment areas



§111(d) EG



Potential Legal Flaws

- EPA appears to set the “**performance standard**” for states, rather than issuing a procedure and guidelines
- EPA is attempting to regulate **non-emitting facilities** and entities (wind, solar, nuclear) under the Clean **AIR** Act
- EPA is not allowing the **flexibility** it claims (e.g., hydro)
- EPA may be precluded from regulating utilities under both CAA **Section 112 (MATS)** and Section 111(d)
- EPA appears to be using **one sentence** in the CAA to restructure the entire U.S. electricity system

§111(d) EG



If I'm not a utility, why do I care?

- Are you an “affected entity”?

i.e., are you “another entity with obligations under this subpart for the purpose of meeting the emissions performance goal requirements in these emission guidelines?”

- Are you next in line?

1. Are there other ways to do what you do that emit less CO₂?
2. Could EPA require you to ask your customers to reduce demand for your product?

- Petroleum Refining
- Pulp & Paper
- Landfills
- Iron & Steel
- Animal Feeding
- Portland Cement



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