

The Clean Power Plan: Implications and Key Issues of State Compliance Options

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Key Issues

1. Why use market-based compliance
2. Market signals rate-based
3. Market signals mass-based
4. EPA's Regulatory Impact Analysis
5. Load growth and new units
6. Addressing risk of leakage to new units
7. Mass-based compliance and new units
8. Allowance allocation
9. Benefits of trading-ready

Why Use Markets or Challenges of Non Market-Based Compliance

Significant uncertainty in electricity sector: fuel prices, demand, technology

- Investment decisions are difficult
- Accurately projecting future dispatch 10+ years out almost impossible
 - Existing utility regulation does not attempt to do this

Non-market based compliance requires setting dispatch limits or minimum generation

Markets provide flexibility for small utilities, individual unit owners

Market Signals Rate-Based Compliance

Units operating below regulated rate earns ERC

- Operating creates product plant owner can sell
- Creates subsidy for these sources, similar to PTC

Units operating above regulated rate must buy ERCs

- Additional operating cost

NGCC units may be below category specific rate and blended rate

- Earn GS-ERCs

All coal units* above regulated rates

Rate-based subsidizes new EE, RE, nuclear

Can cause wholesale prices to drop *but* total system cost increase with regulation

Market Signals Mass-Based Compliance

Cost of allowance represents cost on emissions

- Cost signal to coal and NG proportional to their emissions

How allowances are distributed typically does not impact dispatch of units

- If auction or give away plants/markets will operate the same
- Unless allowances incentivize generation → updating output-based allocation
- How allowances are allocation *does* impact end-use prices

Regulatory Impact Analysis Overview

2 scenarios: blended rate with RE/EE ERC trading across interconnects, mass-based existing intrastate

Rate more RE than mass, increased use existing NGCC

Mass shifts some generation to new NGCC

Policy cost increase for rate of 4.7% in 2030, compared to 2.7% for mass

Load Growth and New Units

Rule does not restrict load growth, it restricts emissions from covered sources

- Rate-based → can build new NGCC
- Mass-based covered existing → can build new NGCC but EPA is attempting to create economic incentives to operate existing NGCC (addressing leakage)
- Mass-based covering new + existing → caps affected emissions including new NGCC
 - Projected growth rate covered sources?

Addressing Risk of Leakage

Mass-based plans must address risk of leakage to new units beyond what would occur category specific rate based compliance

3 options available to states

- Include new units under mass limits with new source complement
- Use an allocation method that counteracts leakage
 - EPA proposes using both output based allocation and allocating to RE in model rule
- Other methods demonstrated by state to prevent leakage

Unclear if model rule method fully addresses leakage

Mass-Based Compliance and New Units

Whether to include new NGCC is a threshold level question.

	Cumulative Interim Goal Budget	Final Goal Budget
National increase in emissions budget with New Source Complements	1.8%	2.5%

Load growth assumptions in new source complement:

- 0.7% annual growth in Eastern and Western Interconnects, 0.9% ERCOT
- 2004-2014 annualized growth 0.3% nationwide

Benefits including new units:

- Avoid market distortions
- Emission integrity/avoid leakage
- May be less stringent

Benefits existing units only:

- No limit new NGCC generation
- May be less stringent

Allowance Allocation Mass-Based

Difficult decision

3 basic options

- Distribute based on historical gen/emissions
 - Rational? Windfall profits
- Auction
 - Generates revenue that can be used to compensate ratepayers
- Updating: earn by operating
 - Incentive to operate

Benefits of trading-ready

Wider market will lower total cost

- more buyers and sellers
- Reliability safety valve
 - No transmission constraints in emissions markets

Gains for variation across wide geography

- Different resources (wind, solar, low cost NG)
- Demand growth rates
- Weather
- Unexpected opportunities

Low cost states also “win” → make money reducing emissions

Thank you

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Additional resources:

<https://nicholasinstitute.duke.edu/focal-areas/clean-air-act-clean-power-plan#.UiDC4NLktyx>