EPA's Clean Power Plan (CPP): How Will it Work and Will it Be Upheld?

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Presented by
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Introduction

• The Regulatory Assistance Project (RAP) is a global, non-profit team of energy experts, mostly veteran regulators, advising current regulators on the long-term economic and environmental sustainability of the power and natural gas sectors. ([www.raponline.org](http://www.raponline.org))
  – Non-advocacy; no interventions

• Ken Colburn is a Senior Associate at RAP. His experience as an air quality regulator came as Air Director for the State of New Hampshire and as Executive Director of NESCAUM.
Overview

• Setting aside the hype

• Issues and ideas on how the CPP will work
  – Final rule hits “reset button”
  – States get “first crack”
  – Not a “SIP”
  – Beyond the building blocks
  – Consider integrated approaches; co-benefits
  – Consider multi-state approaches
  – Federal enforceability
  – What will the Federal Plan look like?

• Key takeaways
Long lamented by many utilities and states, we see EPA’s CPP rule as legally binding under Mass. vs. EPA

Coal retirements will come from other EPA regs, dispatch not compensating for high fixed costs, and less investment due to weaker economics – not the CPP directly

We see the next wave of utility capital expenditures as driven by carbon regulation

Diligent management teams that get in front of their regulators (PUC & DEP) with articulate plans to achieve GHG targets could see their capex accelerate sooner

If you’re not at the table, you’re on the menu!
US Electric Utilities & IPPs
Does MATS Really Matter?

Recent industry buzz around Supreme Court hearings of EPA regs is misled
With many industry participants increasingly speculating over whether the Supreme Court will uphold the EPA’s Mercury and Air Toxics Standards (MATS) regulations, we wanted to emphasize we see little in immediate practical implications on power markets arising from a scenario where the Supreme Court overturns MATS. Rather, with the current gas price environment virtually ensuring limited run times on coal plants, particularly of the Appalachianness which are primarily impacted by these regulations, we do not think one units will elect to continue operations. Moreover, few have cleared PJM’s capacity market, and will not have the opportunity to do so via incremental – as we believe many of these units will be cash flow negative. Even if units were to extend their life, this would largely be through the summer period. For more on the latest state of coal-to-gas switching, please see our 3/23 note, ‘Coal’s Gritty Outlook’.

What about the timeline? Might be too late too.
Moreover, with the MATS regulations set to take effect shortly, a ruling in June from the Supreme Court could yet be ‘too late’ for many of the units to avoid compliance. We think this uncertainty only adds to the potential continued operations. Lastly, with many plants already having indicated their intentions to retire to staff, local permitting authorities, and other grid entities, we believe there is momentum behind many of the contemplated retirements. Among the largest NAPP generators, FirstEnergy, has suggested there is little they could do to delay processes already underway. The exception could yet be plants in relatively integrated states with greater latitude. Ultimately, with resource adequacy already in place, we believe few will opt to do so.

What about cost though – could there be more than meets the eye?
The bigger message around the case relates to whether the EPA would explicitly incorporate economic cost-benefit into its review process rather than simply make a separate executive order mandate in the Regulatory Impact Assessments. While the technical term would suggest the rules are required to be ‘appropriate’, formally requiring a cost calculation (even if seemingly unrealistically low in our view) would appear to nominally satisfy this requirement. For example, cost impact of $9.6B from these regulations was determined. We see the change as form over substance in the current case, but could prove an angle for opponents of EPA’s forthcoming implementation of rules regulating carbon emissions under 111(d) for existing sources, citing the exceptionally meaningful economic impacts. We are generally biased to believe the Supreme Court sides with an agency rulemaking, but see the wider implications from categorically forcing the introduction of economic cost-benefit analyses as potentially having wide ranging implications.

For further reference see our note December 1st, ‘Adding Cost to the EPA Equation’ when the case was initially taken up.
The Power Sector is Changing Rapidly: “Just Say No” May Not Be a Wise Answer

Q. What are the top three emerging technologies that you think your utility should invest more in?

- Energy Storage: 53%
- Energy efficiency: 41%
- Utility-scale renewables: 37%
- Demand response: 37%
- Distributed solar: 32%
- Microgrids: 27%
- Electric vehicle infrastructure: 24%
- Natural gas peaking power plants: 18%
- Environmental upgrades: 13%
- Carbon capture and storage: 8%
- Other: 8%
- Coal gasification: 3%

The Power Sector is Changing Rapidly: “Just Say No” May Not Be a Wise Answer

Q. What do you think your utility’s business model will be in 20 years?

- Traditional vertically integrated regulated utility: 54% current, 18% future
- Energy services utility: 11% current, 32% future
- Smart integrator utility: 8% current, 24% future
- Deregulated distribution utility: 17% current, 15% future
- Other: 10% current, 10% future

The Power Sector is Changing Rapidly: “Just Say No” May Not Be a Wise Answer

Q. What new business models is your utility developing?

- 71% Energy efficiency and demand response
- 51% Consumer information services
- 48% Distributed generation
- 25% Distributed system platform
- 21% Premium power options
- 9% Other

The Power Sector is Changing Rapidly: “Just Say No” May Not Be a Wise Answer

Q. How should the EPA move ahead with its plan to reduce carbon dioxide emissions 30% nationwide by 2030?

- 34% EPA should hold to current emissions reduction targets and timetable
- 28% EPA should make emissions reduction targets and timetable more aggressive
- 20% EPA should lessen emissions reduction targets and timetables
- 19% EPA should scrap plan entirely

The Power Sector is Changing Rapidly: “Just Say No” May Not Be a Wise Answer

Elected officials may want to exercise caution in positioning their states against these industry trends...

CPP Rule Finalization Hits “Reset Button”

• BSER “goes away”
• States get a target, and a clean sheet
• EPA moves into “approve” mode (or not)
• ...and imposes the Federal Plan if necessary

• Essentially, unchartered waters
States Get “First Crack” at Implementation...

...but it may be possible to have too much flexibility
...and 111(d) Is Not a § 110 SIP

• “Similar” ≠ identical
  – Little state experience
  – Cost/useful life considerations
  – Measures, timing, contents of state plans
  – Multi-state options
  – Federal response when a state plan is deficient

Some states may approach 111(d) compliance planning as though it were a SIP, but they may endure higher costs, fewer options, and less innovation as a result.
CPP Planning Necessitates New Partnership Among State Regulators

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<tr>
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<th>Authority to Adopt Emission Reduction Requirements?</th>
<th>Authority to Approve Cost Recovery from Ratepayers?</th>
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<tbody>
<tr>
<td>PUCs/PSCs</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>DEPs/DEQs</td>
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“State environmental regulators will become substantially more important, with responsibilities rivaling those of the PUCs, effectively dictating resource adequacy considerations as they unveil their respective State Implementation Plans (SIPs) in coming years.” (UBS, 2015)
Flexibility: EPA’s Building Blocks

1. Heat Rate Improvements
2. Redispatch to Gas
3. Renewable and Nuclear Generation
4. Energy Efficiency (EE)

- Establish Energy Efficiency Targets (EE, DSM, EERS)
- Pursue Behavioral Efficiency Programs
- Boost Appliance Standards
- Boost Building Codes

Increase Low-GHG Generation

Electric-Sector CHP

Optimize Power Plant Operations

Retire Aging Power Plants
But Many Other Technology & Policy Options Exist

- Optimize Grid Operations
- Reduce Losses in the T&D System
- Privately-delivered Energy Efficiency
- Encourage Clean Distributed Generation
- Revise Capacity Market Practices
- Improve Utility Resource Planning
- Adopt Cap-and-Invest Programs (e.g., RGGI)
- Adopt Environmental Dispatch or a “Carbon Adder”
- Tax Carbon Dioxide Emissions (“price-based” vs. rate/mass)
- Water Conservation

“Menu of Options” coming from the National Association of Clean Air Agencies (NACAA) later this spring
State 111(d) Compliance Plans: The Actual Opportunity

Conventional Wisdom: Actual Opportunity:

State Compliance = 1 + 2 + 3 + 4 + Beyond

- Each BB likely > 0
- Some BBs *may* be zero

Keys:
- States can think outside the “Building Block Box”
- Better to seek ‘approval’ than to ask permission
Example: Boost EE to Ease Requirements on Coal Plants in Texas?

Summary of State Goal Rate (lbs/MWh) Calculation Steps*

- Step 1: Calculation of 2012 Fossil Emission Rate
- Step 2: Apply BB1 (6% HRI)
- Step 3a: Apply BB2 (Shift NGCC to 70% Capacity Factor)
- Step 3b: Apply BB2 for Under Construction NGCC
- Step 4a: Apply BB3 (Nuclear Component)
- Step 4b: Apply BB3 (RE Generation Component)
- Step 5: Apply BB4 (MWh of EE)

Final 2030 State Goal Rate (option 1): 791 lbs/MWh
Consider Co-Benefits as Well as Carbon & Cost

- Good 111(d) choices can help air quality; good air quality choices can help 111(d) compliance
- Ditto for increasing water concerns
- Integrated multi-pollutant, multi-media approach can lower cost, risk (IMPEAQ)

**Energy solutions for a changing world**

www.raponline.org/document/download/id/6440
EPA Clean Air Science Advisory Committee (CASAC) is considering 60-70 ppb range for new NAAQS.
Subcritical Coal Units vs. Water Stress

...And Costs & Risks Generally

Quantifying EE Emissions Reductions: Apply a “Mobile Source Analogy”

Clean Air SIP

Clean Air SIP

Clean Air SIP
Other Ways to Simplify EE Emissions Quantification

1. “Deemed Energy Savings” for good EE programs...
   – Why not “Deemed Emission Reductions” too?

2. “AP-42 Emission Factors” hierarchy approach...
   – Why not apply to EE emissions reductions?

3. Modeling: EPA provides the MOVES model for states to assess vehicle emissions...
   – Why not a similar model for EE (AVERT?)

REMEMBER: §111(d) is NOT a SIP; EPA has far greater flexibility than under §110
Consider Multi-State CPP Plans

- Larger “market” areas = lower costs
- Align with Electricity Control Areas?
- Collaborate on a “modular” basis (EE, RE)?
Federal Enforceability

• “EPA will take over your state energy efficiency programs!”

• Could EPA?  Would EPA?  Has EPA?
  – Maybe; No; No

• What does actually occur?
  – EPA determines deficiency; notifies state
  – Gives opportunity to correct
  – Implements federal plan (no takeover)
  – Consider: 20-year Boston Harbor clean up

Clean Air Act § 110 SIPs vs. § 111
What Will the Federal Plan Look Like?

• Nobody knows, but...
  – States relinquish their “first crack” rights
• EPA is freed from adherence to BSER blocks
• EPA unlikely to do a different plan for each state
  – i.e., could develop and administer one plan applicable to all subject states
• Like, perhaps, a mass-based cap & trade system?
• Does “Just Say No” help EPA get there?
Numerous Other Issues

• Revised “glide path” (interim goal)?
• Different treatment of nuclear units?
• Multi-year baseline option?
• Different treatment of EE and RE?
• A “safety valve”? 
• Others?

Don’t expect final rule to answer all questions; no one has ever done this before...
Key Take-Aways: Help Your States...

- Recognize that 111(d) is *not* a SIP
- Think outside the “Building Block Box”
- Think integrated (ozone/particulates, water, risk co-benefits)
- Think regional (multi-state)
- Think least-cost, least-risk
  - Changing industry raises specter of stranded-costs
- “Ask not what it needs to be; ask what you want it to be”
Thank You for Your Time and Attention

About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts focused on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies to:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raponline.org

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