EPA’s Clean Power Plan: Opportunities and Impacts for Transmission and Renewables

Governors’ Wind Energy Coalition Workshop
Washington, DC – June 19, 2015

Presented by Ken Colburn, Principal
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)
  – Foundation-funded; some contracts
  – Non-advocacy; no interventions; no fees

• Ken Colburn is a principal 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.
The CPP is a “Different Animal”

• “Similar” ≠ identical
  – Little state experience
  – Cost/useful life considerations
  – Measures, timing, contents of state

Some states may approach 111(d) compliance planning as though it were a SIP, but are likely to face higher costs, fewer options, and less innovation as a result.

when a state plan is deficient

Introduction

Even before the US Environmental Protection Agency’s (EPA) Clean Power Plan (CPP) becomes final, states are initiating careful planning efforts to identify ways that its proposed requirements could be met. Many observers characterize these state plans—which EPA will require under Section 111(d) of the federal Clean Air Act (CAA)—as “State Implementation Plans” (SIPs) for greenhouse gas (GHG) emissions. In reality, however, the CAA’s requirements under 111(d) differ markedly from those for traditional criteria pollutant SIPs as found in Section 110 of the Act. Distinguishing the difference between Section 111(d) compliance plans and Section 110 SIPs is therefore quite important. States have significant differences that could operate to the detriment of the states if they constraining their 111(d) planning to SIP approaches.

1 42 U.S. Code § 7411 (d) (1).

www.raponline.org/document/download/id/7491
The Power Sector is Changing Rapidly: “Just Say No” May Not Be the Right Answer

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

EPA’s Building Blocks

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

- 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
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 must “think outside the blocks” to minimize cost
- Better to seek ‘approval’ than to ask permission
# NACAA’s Menu of Options

(Released May 21, 2015)

465 pages; ~20 pp/chapter

---

## Implementing EPA’s Clean Power Plan:
A Menu of Options

### Table of Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Figures</td>
<td>iii</td>
<td></td>
</tr>
<tr>
<td>List of Tables</td>
<td>vi</td>
<td></td>
</tr>
<tr>
<td>Acronym List</td>
<td>ix</td>
<td></td>
</tr>
<tr>
<td>Executive Summary</td>
<td>ES-1</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>Intro-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 1: Optimize Power Plant Operations</td>
<td>1-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 2: Implement Combined Heat and Power in the Electric Sector</td>
<td>2-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 3: Implement Combined Heat and Power in Other Sectors</td>
<td>3-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 4: Improve Coal Quality</td>
<td>4-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 5: Optimize Grid Operations</td>
<td>5-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 6: Increase Generation from Low-Emission Resources</td>
<td>7-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 7: Pursue Carbon Capture and Utilization or Sequestration</td>
<td>8-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 8: Retire Aging Power Plants</td>
<td>9-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 9: Switch Fuels at Existing Power Plants</td>
<td>10-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 10: Reduce Losses in the Transmission and Distribution System</td>
<td>11-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 11: Establish Energy Savings Targets for Utilities</td>
<td>12-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 12: Foster New Markets for Energy Efficiency</td>
<td>13-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 13: Pursue Behavioral Efficiency Programs</td>
<td>14-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 14: Boost Appliance Efficiency Standards</td>
<td>15-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 15: Boost Building Energy Codes</td>
<td>16-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 16: Increase Clean Energy Procurement Requirements</td>
<td>17-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 17: Encourage Clean Distributed Generation</td>
<td>18-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 18: Revise Transmission Pricing and Access Policies</td>
<td>19-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 19: Revise Capacity Market Practices and Policies</td>
<td>20-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 20: Improve Integration of Renewables into the Grid</td>
<td>21-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 21: Change the Dispatch Order of Power Plants</td>
<td>22-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 23: Improve Demand Response Policies and Programs</td>
<td>24-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 24: Adopt Market-Based Emissions Reduction Programs</td>
<td>25-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 25: Tax Carbon Dioxide Emissions</td>
<td>26-1</td>
<td></td>
</tr>
<tr>
<td>Chapter 26: Consider Emerging Technologies and Other Important Policies</td>
<td>27-1</td>
<td></td>
</tr>
</tbody>
</table>

---

10 Chapters on Technology Options

15 Chapters on Policy Options

www.4cleanair.org/NACAA_Menu_of_Options
NACAA’s Menu of Options

Chapter 4: Improve Coal Quality ......................................................... 4-1
Chapter 5: Optimize Grid Operations ............................................. 5-1
Chapter 6: Increase Generation from Low-Emission Resources ........ 6-1
Chapter 7: Pursue Carbon Capture and Utilization or Sequestration .... 7-1
Chapter 8: Retire Aging Power Plants ............................................. 8-1
Chapter 9: Switch Fuels at Existing Power Plants ......................... 9-1
Chapter 10: Reduce Losses in the Transmission and Distribution System .... 10-1
Chapter 11: Establish Energy Savings Targets for Utilities ................. 11-1
Chapter 12: Foster New Markets for Energy Efficiency .................... 12-1
Chapter 13: Pursue Behavioral Efficiency Programs .......................... 13-1
Chapter 14: Boost Appliance Efficiency Standards .......................... 14-1
Chapter 15: Boost Building Energy Codes ...................................... 15-1
Chapter 16: Increase Clean Energy Procurement Requirements ........ 16-1
Chapter 17: Encourage Clean Distributed Generation ...................... 17-1
Chapter 18: Revise Transmission Pricing and Access Policies .............. 18-1
Chapter 19: Revise Capacity Market Practices and Policies ............... 19-1
Chapter 20: Improve Integration of Renewables into the Grid .............. 20-1
Chapter 21: Change the Dispatch Order of Power Plants .................... 21-1
Chapter 23: Improve Demand Response Policies and Programs .......... 23-1
Chapter 24: Adopt Market-Based Emissions Reduction Programs .......... 24-1
Chapter 25: Tax Carbon Dioxide Emissions .................................... 25-1
Chapter 26: Consider Emerging Technologies and Other Important Policies 26-1
Good News: Wind is “on CPP’s Ground Floor”

- Key component of an EPA building blocks
- Several complementary transmission-related options
- Continued investment in wind, transmission expected

Bad News: Many Challenges Remain

- Curtailment; inadequate transmission
- How to count and use RE in CPP compliance?
- How to count PPA’s and interstate transfers?
- How to work together on joint/regional plans?
  - Resource rich vs. poor states may have very different views
Recommendations

• Ensure that your state’s planning:
  – Thinks beyond EPA’s building blocks
  – Has a good handle on existing and planned RE
  – Has a good handle on rate-to-mass conversion & issues
  – Engages other states regarding joint/regional plans
    (Comprehensive vs. modular; “trading ready”; may be lowest
    cost compliance)
  – Does not self-constrain to traditional air quality practices (§110)

• Identify possible changes in final rule
  – Targets vs. RECs? Regional RE areas? Baseline? Glide path?

• Identify and engage allies
  – DR providers; RTOs/EIMs, storage, etc.
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

Ken Colburn: kcolburn@raponline.org
617-784-6975
Transmission investment in 2015 forecast at about $17.2bn in projects

6/11/2015
By Corina Rivera Linares
Chief Analyst

*PennWell's Kent Knutson said that from 2015 to 2018, the average investment that TransmissionHub is tracking is about $23.4bn a year*

Transmission investment in 2015 is forecast at about $17.2bn in projects, down from about $23bn that was forecast earlier this year, PennWell Director of Hub Services Kent Knutson said on June 10.

Discussing transmission investment trends during TransmissionHub's “Quarterly Market Update” webcast, Knutson noted that 2015 is a good year, but with investments lower than expected. Some projects are being pushed for completion into 2016, while in “2017 and beyond, a lot of the projects are conceptual and it'll be interesting to see how they move forward and get developed.”
Long lamented by many utilities and states, we see EPA’s CPP rule as legally binding under Massachusetts 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 capex as driven by regulation of carbon emissions in the US

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!
What to Expect in the Final Rule

• Different state targets
• 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...