Choosing Our Energy Future

TOWN HALL DISCUSSION OF GEORGIA’S OPTIONS FOR IMPLEMENTING THE CLEAN POWER PLAN

September 28, 2015
#GaCPP
Teeing Up the Café Conversations

Presentation by topic area experts
- Maximizing Innovation, Economic Development and Jobs
- Exploring Environmental Benefits and Co-Benefits
- Ensuring Equity and Environmental Justice -- What is Known
- Options for Design of a Market-Based System
- Multi-State Approaches: Options, Pros, and Cons

Topic area discussion groups
Report out and reflections
TOPIC 1: Maximizing Innovation, Economic Development and Jobs

Expert Presenter:
- Costas Simoglou
  Georgia Department of Economic Development, Center for Innovation for Energy

Discussion Leaders:
- Tim Echols
  Georgia Public Service Commission
- John Sibley
  Southface Energy Institute

Recorders:
- Alex Smith
  Georgia Tech
- Yeong Jae Kim
  Georgia Tech
Maximizing Innovation, Economic Development and Jobs-- What is Known

$33 Billion per year
Flows out of the state

Approx. Annual Cash Outflow For Energy

Approx. Annual State Gov. Budget

$33,000,000,000

$20,000,000,000
Maximizing Innovation, Economic Development and Jobs-- What is Known

The Energy Ecosystem
Maximizing Innovation, Economic Development and Jobs – Key Questions

<table>
<thead>
<tr>
<th>MAXIMIZING INNOVATION AND ECONOMIC DEVELOPMENT</th>
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<tbody>
<tr>
<td>How can Georgia’s compliance plan maximize innovation, economic development, and the clean energy industry in Georgia?</td>
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<tr>
<td>How could it spur innovation and technological development...or not?</td>
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<table>
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<tr>
<th>ECONOMIC DEVELOPMENT &amp; JOBS: WINNERS AND LOSERS</th>
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<tr>
<td>What types of jobs are likely to be created or lost?</td>
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<td>Is it possible to think about the net economic impact of regulations on job creation?</td>
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TOPIC 2: Exploring Environmental Benefits and Co-Benefits

Expert Presenter:
- Matt Strickland  
  Rollins School of Public Health, Emory University

Discussion Leaders:
- Stephanie Stuckey Benfield  
  Mayor’s Office of Sustainability - City of Atlanta
- Ted Russell  
  Civil and Environmental Engineering, Georgia Tech

Recorders:
- Dr. Emanuele Massetti  
  Georgia Tech
- Nicole Swartwood  
  Emory University
Exploring Environmental Benefits and Co-Benefits -- What is Known

Scenario 1: “Inside the fence line” compliance
- 2-3% reductions in CO$_2$, NO$_x$, Hg; 3% increase in SO$_2$
- No improvement in avoidance of premature deaths from PM$_{2.5}$ and ozone

Scenario 2: “Demand-side improvements in energy efficiency”
- 22-27% reductions in CO$_2$, NO$_x$, Hg, and SO$_2$
- 3500 [780 to 6100] annual premature deaths avoided from PM$_{2.5}$ and ozone

Scenario 3: “Social cost of carbon of US$43 t$^1$”
- Reductions: 40% in CO$_2$; 27% in SO$_2$, Hg; 16% in NO$_x$
- 3200 [720 to 5700] annual premature deaths avoided from PM$_{2.5}$ and ozone

Other benefits: Reductions in nitrogen deposition, visibility improvements

GEORGIA: A Health Benefits Hotspot
AIR QUALITY AND HEALTH BENEFITS OF A POWER PLANT CARBON STANDARD

**Soot Reduced in 2020**
- Change in Fine Particulate Matter (micrograms per cubic meter)
  - -1.35
  - 0

**Smog Reduced in 2020**
- Change in Peak Summer Ozone (parts per billion)
  - -3.6
  - 0

**Georgia’s Health**

- Cumulative Lives Saved from 2020 to 2030: 1200
- Cumulative Hospitalizations Prevented from 2020 to 2030: 440
- Cumulative Heart Attacks Prevented from 2020 to 2030: 70

**Georgia’s Air**

- Operating Coal Plants

**Notes:**
These maps show reductions in fine particulate matter and peak summer ozone, and the resulting health benefits under Policy Scenario 2 compared to the 2020 reference case. For soot and smog, negative values = lower pollution. The health benefits assume a linear increase from the 2020 annual estimate. By comparison, Scenario 1 resulted in 30 lives saved, and Scenario 3 resulted in 1100 lives saved. Source: Health Co-benefits of Carbon Standards for Existing Power Plants. www.chgeharvard.org/health-co-benefits.
## Exploring Environmental Benefits and Co-Benefits – Key Questions

### Designing Plans to Maximize Environmental Co-Benefits

- What are the implications for local pollution regulation?
  - air, water, waste, health

- Can we design the plan in a way that helps with future regulatory changes?

### Designing Plans to Maximize Health Co-Benefits

- What are the total health benefits of pursuing the Clean Power Plan?

- Can we design the plan to maximize health co-benefits?
**TOPIC 3:** Ensuring Equity and Environmental Justice

**Expert Presenter:**
- Makara Rumley
  EPA Region IV

**Discussion Leaders:**
- Ian Karra
  Sierra Club
- Christian Braneon
  EPA Region IV

**Recorders:**
- Jeff Hubbs
  Georgia Tech
- Evan Mallen
  Georgia Tech
Where do Vulnerable Communities Fit in the CPP?

• The EPA put a number of considerations in place to help ensure that the CPP and the proposed federal plan do not disproportionately impact vulnerable communities (low income, communities of color, and indigenous communities); this includes:
  • Conducting a proximity analysis to help states and overburdened communities engage with one another during state plan development process; communities with EPA during comment period of proposed federal plan
  • Requiring that states engage with all stakeholders, including communities
  • EPA conducting an analysis during the implementation phase to determine the impacts of the CPP on communities; EPA encourages states to do the same
  • Encouraging that states employ a multi-pollutant approach, when devising their state plans
  • Providing resources on federal, state, and local available programs that assist communities in accessing EE/RE resources
• Clean Energy Incentive Program (CEIP)
Community Engagement in State Plan Development

• The CPP gives states opportunities to ensure communities share in the benefits of a clean energy economy, including energy efficiency and renewable energy

• To help ensure communities – particularly low-income, communities of color, and indigenous communities – have opportunities to participate in decision-making, EPA is requiring that states demonstrate that they meaningfully engage with the public, including communities, in the formulation of their state plans

• This will:
  o Provide an avenue for communities to hear from the state about strategies that might work best to tackle climate pollution, and
  o Allow stakeholders to provide input on where possible impacts to low-income, communities of color, and indigenous communities could occur along with strategies to mitigate those impacts

• EPA will provide additional information to facilitate engagement between communities and states as implementation of the CPP moves forward
CEIP: Incentives for Early Investments

- The Clean Energy Incentive Program (CEIP) incentivizes early investments that generate wind and solar power or reduce end-use energy demand during 2020 and 2021.

- CEIP is an optional, “matching fund” program which states may choose to use to incentivize early investments in wind and solar measures in all settings, and demand-side energy efficiency (EE) measures implemented in low-income communities.
  - EPA will provide matching allowances or Emission Rate Credits (ERCs) to states that participate in the CEIP.
  - Up to an amount equal to the equivalent of 300 million short tons of CO₂ emissions.
  - **Match is double for low-income EE projects**, targeted at removing historic barriers to deployment of these measures.
  - States with more challenging emissions reduction targets have access to proportionately larger share of the match.

http://www2.epa.gov/cleanpowerplan/fact-sheet-clean-energy-incentive-program
EPA Region 4 CPP Contacts for Communities

R4 CPP Lead
Ken Mitchell
Email: mitchell.ken@epa.gov
Phone: 404-562-9065

R4 CPP Community Issues
Christian Braneon
Email: braneon.christian@epa.gov
Phone: 404-562-9608

R4 CPP Community Issues
MaKara Rumley
Email: rumley.makara@epa.gov
Phone: 404 562-8357

Clean Power Plan Community Portal:
http://www2.epa.gov/cleanpowerplan/clean-power-plan-community-page
Ensuring Equity and Environmental Justice – Key Questions

**EQUITABLE OUTCOMES**

- How are these regulations likely to impact environmental justice and equitable outcomes for lower and middle-income residents?

- How are the Clean Power Plan regulations likely to impact electricity rates and other indirect market effects?

**PARTICIPATION IN PLAN FORMATION & IMPLEMENTATION**

- What are the opportunities to shape the Georgia Clean Power Plan to promote more equitable outcomes?

- How can we engage a broad participation in the design of Georgia’s draft state plan?
TOPIC 4: Options for Design of a Market-Based System

Expert Presenter:
- Dan Matisoff
  School of Public Policy, Georgia Tech

Discussion Leaders:
- Charles Rossmann
  Southern Company
- Nick Cooper
  Georgia Public Service Commission

Recorders:
- Mallory Flowers
  Georgia Tech
- Gyungwon Kim
  Georgia Tech
Options for Design of a Market Based System -- What is Known

- **Flexibility Mechanisms – Larger is More Efficient!**
  - Mass vs. Intensity
    - Intensity distorts market and is complex
  - Tax vs. Cap & Trade
    - Tax is more efficient, simpler, but politically difficult
  - Within State vs. Multi-state compatible
    - Multistate will lower costs
  - Power Sector or Power + Industrial + other?
    - Larger markets are better!

- **Allocation methods (auction vs. free allocation) and potential pitfalls**
  - Auctioning helps facilitate market
  - Revenue recycling
  - Reduces “windfall profits”
  - Other market “failures”
Options for Design of a Market Based System – Key Questions

**DESIGNING THE MARKET MECHANISMS**

How does the mass vs. rate choice influence efficiency and market design?

What market-design features need to be in place to create an efficient market system?
  ▪ Which flexibility provisions?

**ECONOMIC VALUE CREATION**

How can Georgia create economic value from emission reduction credits and allowances?

How should permits be allocated?
  ▪ Auction vs. free allocation?
  ▪ Who decides: How many should be free? How should those be allocated?
Expert Presenter:
- Katie Southworth
  Natural Resources Defense Council

Discussion Leaders:
- Abby Fox
  Southeast Energy Efficiency Alliance
- Claudette Ayanaba
  Georgia Environmental Protection Division

Recorders:
- Ben Staver
  Georgia Tech
- Xiaojing Sun
  Georgia Tech
Cross-State Coordination: Options, Pros, and Cons -- What is Known

State Plan Options:
- Taking a coordinated approach: Mass v Rate considerations
- Trading-ready plans

Pros: (potential)
- Regulatory certainty? Trading ready plans can mitigate need for complicated regional plan – may lessen need or urgency.
- Reliability?
- Least Cost? (Share administrative costs (modeling)?)
- Increase compliance options?
- Utility market territory alignment?

Cons: (potential)
- EM&V and uniformity of crediting?
- Timing/ administrative capacity/ politics?
- “Loss of Sovereignty” issues?
Who can trade with whom?

Source: Synapse
Cross-State Coordination: Options, Pros, and Cons – Key Questions

POTENTIAL FOR REGIONAL COOPERATION

What are the risks / benefits of regional collaboration?

What are the barriers that need to be overcome to facilitate regional coordination?

OPTIONS FOR REGIONAL COOPERATION

How can state agencies, utilities, and others coordinate so that state plans reflect the common needs of regions?

How does the mass vs. rate choice influence the prospects for cross-state cooperation?
## Our Process of Dialogue

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