Energy Efficiency/Renewable Energy Roadmap Manual

National Webinar

1:30-3pm ET

U.S. Environmental Protection Agency

Office of Air Quality Planning and Standards

August 27, 2012

Welcome and Introductions

- Chris Stoneman
  - EPA's Office of Air Quality Planning and Standards
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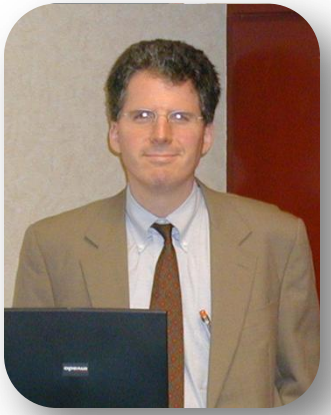

- Robyn DeYoung
  - EPA's Office of Atmospheric Programs
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Webinar Agenda

- Presentation on EE/RE roadmap manual
  - Chris Stoneman, Presenter
  - Three poll questions
- Presentation on EPA's EE/RE quantification tools and related information
  - Robyn DeYoung, Presenter
  - Two poll questions
- Question and answer session
- Survey questions

Webinar Objectives

- Introduce the July 3, 2012 EPA EE/RE roadmap manual
- Describe:
  - Tools available for quantifying EE/RE benefits
  - Energy policy and measurement resources
- Receive feedback on polling and survey questions
- Solicit your questions

Presentation Contents

- EE/RE SIP background
- What EPA has made available, including initial steps agencies can take
- The four pathways, including:
  - Decision-making Hub with examples
  - Documentation checklist
  - Examples for 1997 ozone SIP submittals
- Methods for quantifying EE/RE benefits
- Important elements for successful incorporation of EE/RE in SIPs/TIPs
- States that may want to consider EE/RE going forward
- Example potential policies, programs and measures for the manual
- Next steps

EE/RE SIP Background

- EPA's 2004 guidance yielded few examples of EE/RE integration in SIPs
- Reasons states have not implemented the 2004 guidance
  - Perceived effort necessary not justified by SIP credit expected
  - Needed clearer EPA guidance
  - Documentation requirements perceived as burdensome
  - Not clear what emissions reduction would be achievable

Time is Right to Renew Implementation of EE/RE Guidance

- Significant growth in state investments in electric EE programs to over $5 billion in 2011
- Twenty-nine states (and DC) have adopted renewable portfolio standards
- States need to find greater emission reductions to meet revised NAAQS
- Information on the energy and emissions impacts of EE/RE is increasingly widely available

What EPA has Made Available

- First version of the manual that serves as a roadmap to existing EE/RE guidance
- Complementary resources:
  - Draft quantification tools to be peer reviewed
    - Power Plant Emissions Calculator (P-PEC)
    - Hourly Marginal Emissions Tool (HMET)
      - *Under development*
  - Energy savings information for existing state EE policies
  - Online training on the electric energy sector

EE/RE Roadmap Manual

- Detailed and comprehensive
  - 12 individual documents – main body and 11 appendices covering a range of topics
- Accessible and easy to read
  - Written in straightforward terms with explanatory charts and figures
- Not "one size fits all" – provides options
  - Four different pathways for incorporating EE/RE policies and programs into SIPs
  - Four approaches for quantifying EE/RE emissions impacts

Initial Steps Agencies Can Take

- Learn about:
  - Existing EPA EE/RE SIP guidance
  - EE/RE policies and programs in the jurisdiction
  - Electric energy system
  - Roles and responsibilities of key state energy-related organizations
- Determine magnitude of potential emission benefits
  - Conduct initial screening analysis to see what potential could come from a jurisdiction's EE/RE policies and programs

Four Pathways

- Baseline Emissions Projection Pathway
  - Incorporation of the impact of EE/RE policies and programs in SIP/TIP EGU emissions forecast
  - Best suited for already adopted EE/RE policies and programs
- Control strategy pathway
  - Incorporation of EE/RE policies and programs in a SIP/TIP as a control strategy
  - Best suited for new EE/RE policies adopted after emissions forecast preparation but before SIP/TIP submittal to EPA

Four Pathways

- Emerging/Voluntary Measures Pathway
  - Incorporation of the impact of EE/RE policies as emerging and/or voluntary EE/RE measures (i.e., those that are difficult to enforce and/or quantify)
  - Best suited for locally-based initiatives designed to encourage or require citizens, businesses or local government to acquire more EE/RE
- Weight of Evidence pathway
  - Incorporation of the impact of EE/RE policies as part of a WOE demonstration that can include the impact of EE/RE policies and programs
  - Best suited for EE/RE policies and programs where modeling the impacts is either too resource intensive or not feasible and/or the jurisdiction is not interested in SIP/TIP credit

Getting Started: Decision-Making Hub

- A flow chart to help agencies navigate the decisions for how to incorporate EE/RE in SIPs (see page 22 of manual)
- Identifies the important questions agencies should consider when selecting pathways
  - Does the area:
    - Have EE/RE emerging or voluntary programs?
    - Want SIP credit?
    - Want a federally enforceable control strategy?
    - Have EE/RE policies and programs "on the books"?
    - Have emissions projection modeling?

Four Flowchart Examples

- Proposed state or local government green power purchase agreement
  - Is this "on the books"?
    - No
  - Is it emerging or voluntary?
    - Yes
  - Does the area want SIP credit?
    - Maybe

Emerging/voluntary measures or WOE pathway

Four Flowchart Examples

- Mandatory commercial whole-building energy use disclosure @ time of sale or lease
  - Is this "on the books"?
    - Yes
  - Is it emerging or voluntary?
    - Yes
  - Does the area want SIP credit?
    - Maybe

→ Emerging/voluntary measures or WOE pathway

Four Flowchart Examples

- Existing state Renewable Portfolio Standard policy with mandatory goal
  - Is this "on the books"?
    - Yes
  - Is it emerging or voluntary?
    - No
  - Does the area want traditional, federal enforceability?
    - Maybe

→ Baseline or control strategy pathway

Four Flowchart Examples

- Proposed increase in stringency for existing state Renewable Portfolio Standard policy with mandatory goal
  - Is this "on the books"?
    - No
  - Is it emerging or voluntary?
    - No
  - Does the area want traditional, federal enforceability?
    - Maybe

→ Control strategy or WOE pathway

Four Pathways: Documentation Checklist

	Identify and Describe Policies/ Programs to Include	Quantify Impacts	In Place for Planning Period	Ensure No Double Counting	Ensure Federal Enforceability
Baseline Pathway	Yes	Yes	Yes	Yes	No
Control Strategy Pathway	Yes	Quantifiable	Permanent	Surplus	Enforceable
Emerging/ Voluntary Measures Pathway	Yes	Emerging measures to receive provisional SIP credit when quantification uncertain	Permanent	Surplus	Voluntary measures ok if agency assures that emission reductions credited in the SIP/TIP occur
WOE Pathway	Yes	Yes	Yes	Yes	No

Pathway Examples for 1997 Ozone SIP Submittals

- Baseline emissions forecast
  - Renewable portfolio standards as incorporated in the Energy Information Administration's Annual Energy Outlook
  - Reflected in modeling performed for 1997 ozone NAAQS
- Control strategy pathway
  - State of TX included impact of EE programs as control measure in Dallas, TX 8-hour ozone SIP
    - EE measures implemented in new construction

Pathway Examples for 1997 Ozone SIP Submittals

- Emerging/voluntary measures pathway
  - DC Region (via the MWCOG)
    - Bundled voluntary control measures (i.e., wind energy purchase and LED traffic lights) in 1 hour and 8 hour ozone SIPs
  - Shreveport, LA
    - Voluntary control measure (i.e., EE measures in municipal buildings) in 8 hour ozone early-action compact SIP revision
- Weight of evidence pathway
  - Connecticut WOE demonstration in 8-hour ozone SIP

EE/RE Quantification Methods: EPA Recommendations for SIP/TIP Pathways

	Basic Approach: eGrid Emission Rates	Basic Approach: Capacity Factor Emission Rates	Midrange Approach: Historical Hourly Emission Rates	Sophisticated approach: Energy models
Baseline Pathway	No	No	Yes	Yes
Control Strategy Pathway	No	Yes	Yes	Yes
Emerging/ Voluntary Measures Pathway	No	Yes	No	No
WOE Pathway	Yes	Yes	Yes	Yes

Important Elements for Successful Incorporation of EE/RE in SIPs/TIPs

- EE/RE policies and programs
  - More aggressive state-wide policies produce greater potential emission benefits
    - For example, the higher the percentage target of a state-wide renewable portfolio standard, then the greater the potential emission benefit
    - Working regionally to combine impacts is also beneficial
- Dialogue with energy agencies
  - Establishment of strong working relationships and partnerships among energy and environmental agencies within a state or locality
    - Greater understanding of the details of relevant EE/RE policies and the associated emission benefits
    - Transfer of energy information needed for SIP documentation
    - Facilitate successful monitoring of compliance with adopted EE/RE policies

Important Elements for Incorporating EE/RE in SIPs/TIPs

- Quantification of whether and to what extent the EE/RE initiative is affecting a particular nonattainment area
  - Roadmap describes emission quantification approaches states can apply to understand the magnitude and location of EE/RE policy and program emission impacts

States that May Want to Consider EE/RE Going Forward

- Ozone Advance areas
  - To date, 24 areas in 17 states have signed up to participate in the program
  - These areas may want to consider quantifying EE/RE emissions benefits under this program
- 2008 ozone NAAQS
  - Areas designated nonattainment that have to prepare attainment demonstrations may want to consider quantifying EE/RE emissions benefits under this program
  - Could incorporate EE/RE benefits in the upcoming SIP
- Other areas may want to plan for possible, tighter NAAQS in the future
  - Consider quantifying EE/RE emissions benefits for use in a future SIP

Examples of Potential SIP EE/RE Policies, Programs and Measures

- Energy Efficiency Resource Standards (EERS)
- State energy efficiency appliance standards
- State-mandated municipal government electricity consumption reductions
- Renewable Portfolio Standard
- Local Renewable Energy Certificate purchases

Example: State of CT Energy Efficiency Resource Standard

- Example for illustrative purposes only
  - Approvability is a separate discussion
- CT RPS requires each electric supplier/distribution company to obtain at least 4% of retail load thru CHP and EE by 2010
- EPA estimates 326 GWh of energy savings from this policy in 2012 (using P-PEC tool)
  - 98 tons/year of NOx reductions
  - 321 tons/year of SO2 reductions

Example: State of CT Energy Efficiency Resource Standard

- EERS policy:
  - Permanent
  - Quantifiable
  - "On the books"
  - Mandatory
  - Could be federally enforceable
- Therefore, appears to be a candidate for all pathways except:
  - It wouldn't be a good candidate for the emerging/voluntary measures pathway because it exceeds the pathway's criteria

Next Steps

- Working with interested state and local agencies to apply manual and quantify EE/RE
  - Plans underway to develop examples with MA, NY and MD
  - Several other states have started to engage
- Providing technical assistance, tools and training