Energy Efficiency/Renewable Energy Roadmap Manual

National Webinar

1:30-3pm ET

U.S. Environmental Protection Agency

Office of Air Quality Planning and Standards

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Welcome and Introductions

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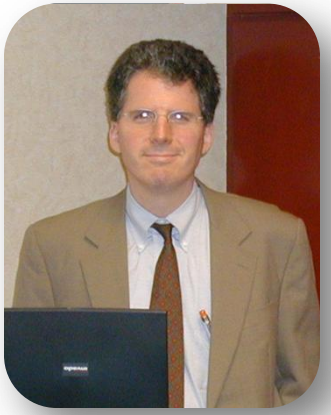

Webinar Agenda

- Presentation on EE/RE manual
  - Chris Stoneman, Presenter
  - Two poll questions
- Presentation on EPA's EE/RE quantification tools and related information
  - Robyn DeYoung, Presenter
  - Two poll questions
- Question and answer session
- Completion of 4 survey questions

Webinar Objectives

- Provide
- Describe
- Provide an example of how to apply the manual
- Solicit your questions

Presentation Contents

- EE/RE – SIP background
- What EPA has made available
- Manual contents
  - Main body
  - Appendices
- Examples of potential SIP EE/RE policies, programs and measures
- Important elements for successful incorporation of EE/RE in sips
- States that may want to consider EE/RE going forward
- Next steps

EE/RE SIP Background

- EPA's 2004 guidance has yielded few examples of EE/RE integration in SIPs
- Variety of reasons states have not implemented guidance
  - Perceived effort necessary not justified by SIP credit expected
  - Lack of clear 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

- On July 2 EPA issued first version of 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)
      - ***To be released***
  - Energy savings information for existing state EE policies
  - Online training on the electric energy sector

EE/RE Roadmap Manual

- Detailed and comprehensive
  - Over 200 pages long
  - 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 States 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

Getting Started: Decision-Making Hub

- A flow chart to help agencies navigate the decisions for how to incorporate EE/RE in SIPs
- 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?

Five 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

Five 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

Five 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

Five Flowchart Examples

- Existing Energy Efficiency Resource Standard 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

Five 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

- 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 reduce emissions
- 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

Four Pathways: Documentation Checklist

- Identify and describe EE/RE programs and policies to include
  - All four pathways
- Perform an analysis of the expected energy/emissions impacts
  - All four pathways
- Ensure they will be in place for the duration of the planning period
  - All four pathways with two caveats:
    - Control strategy: demonstrate measures are permanent
    - Emerging/voluntary measures: certify measures are permanent

Four Pathways: Documentation Checklist

- Ensure no double counting
  - All four pathways with two caveats:
    - Control strategy: demonstrate they are surplus
    - Emerging/voluntary measures: certify they are surplus
- Ensure EE/RE programs and policies are federally enforceable
  - Control strategy pathway only

Four Pathways: Documentation Checklist

	Identify and Describe Policies 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	Yes	Demonstrate permanence	Demonstrate surplus	Yes
Emerging/ Voluntary Measures Pathway	Yes	Yes	Certify permanence	Certify surplus	No
WOE Pathway	Yes	Yes	Yes	Yes	No

Control Strategy Pathway

Permanent	Enforceable	Quantifiable	Surplus
• Evidence that regulation or legislation is mandated through the attainment year	• EPA has ability to enforce EE/RE policies and programs brought into SIPs as control strategies • Federal enforceability is key for expanded SIP credit	• Use a reliable and replicable emissions quantification approach that illustrates which EGUs will reduce emissions based on EE/RE policies and programs	• Document no double counting of emissions reductions • Demonstrate emission reductions are not used for other CAA requirements (e.g., under a cap and trade program)

Emerging/Voluntary Measures Pathway

Permanent

- Should be fully implemented during the term for which emission reductions are granted

Enforceable

- Flexibility for voluntary measures by requiring agency to assure that emission reductions credited in the SIP/TIP occur
- Agencies would commit to monitor, assess and report on emission reductions resulting from voluntary measures and to remedy shortfalls

Quantifiable

- For emerging/voluntary measures, presumptive SIP credit limit is 6 percent
- Flexibility for emerging measures to receive provisional SIP credit upfront when quantification uncertain

Surplus

- Jurisdictions cannot "double-count" emissions

Examples for Each Pathway

- Baseline emissions forecast
  - Renewable portfolio standards as incorporated in the Department of Energy 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

Examples for Each Pathway

- Emerging/voluntary measures pathway
  - DC Region (via the MWCOG)
    - 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

Methods for Quantifying EE/RE Policies and Programs

- Basic approach: eGRID sub region "non-base load" emission rates
  - Suitable for WOE pathway
- Basic approach: Capacity factor emission rates
  - Suitable for control strategy, emerging/voluntary measures and WOE pathways
- Midrange approach: Historical hourly emission rates
  - Suitable for baseline emissions projection, control strategy, and WOE pathways
- Sophisticated approach: Energy models
  - Suitable for baseline emissions projection, control strategy, and WOE pathways

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

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

Important Elements for Successful Incorporation of EE/RE in SIPs

- 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

- 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 under this program

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

Example: State of CT Energy Efficiency Resource Standard

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

Example: State of CT Energy Efficiency Resource Standard

- Because the policy is mandatory:
  - It is a candidate for all pathways except emerging/voluntary
- Because the policy is "on the books":
  - It is a candidate for the baseline emissions forecast pathway