Incorporating EE/RE Policies and Programs into Air Quality Plans

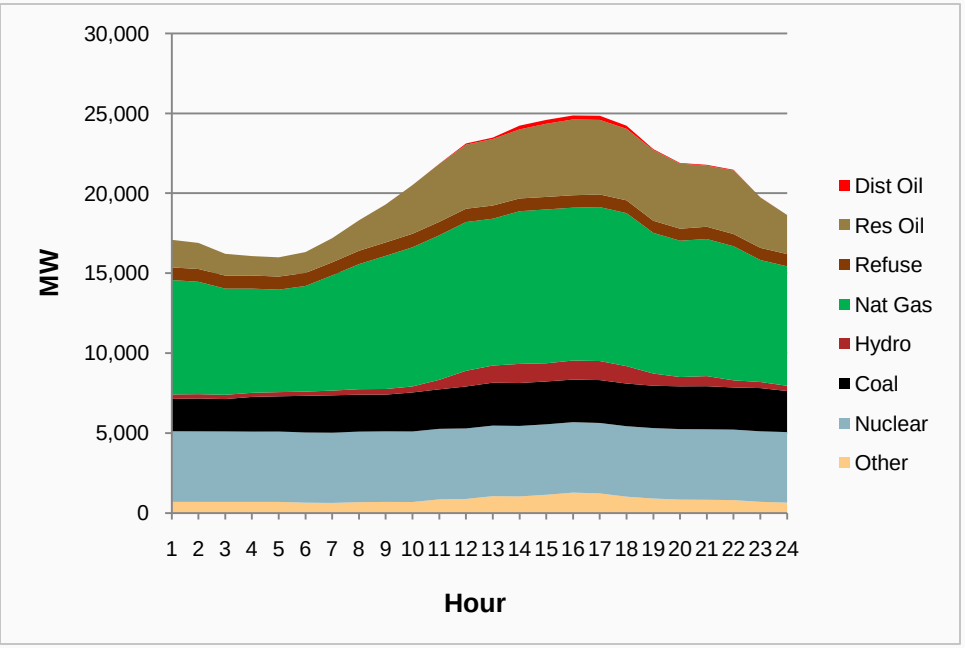
NEEP EM&V Meeting

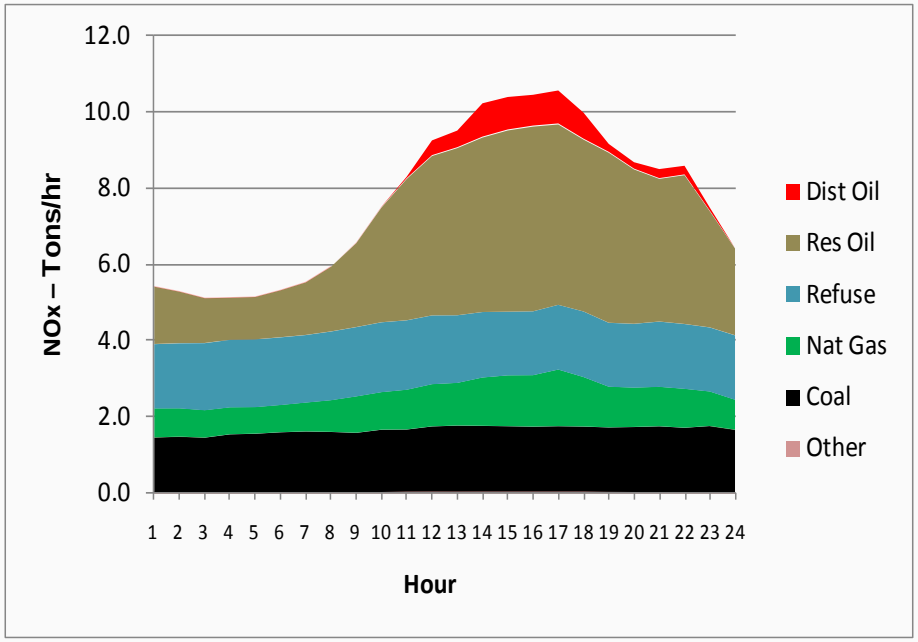
October 2011

Background and Evolution

- Under the Clean Air Act, EPA regulates emissions of pollutants from power plants
- Historical focus has been on pollution control
- 1990's brought strategies such as Cap and Trade
- Now beginning to look are renewable and demand side resources
  - Clarifying existing guidance for states, tribes and local agencies to incorporate these approaches into air quality plans

Example Peak Day Production vs Emissions – July 19, 2005





Purpose of the Guidance/Manual

- Important to account for and encourage incorporating EE/RE in SIPs
- But agencies need more detailed information
- To help, manual provides a roadmap that:
  - Clarifies guidance on four pathways:
    - Baseline emissions forecast pathway
    - SIP control strategy pathway
    - Emerging/voluntary measures pathway
    - Weight-of-evidence (WOE) pathway
  - Provides accessibility to a range of audiences
  - Allows for different techniques/approaches

Getting Started

- Need to understand:
  - State and local EE/RE policies and programs
  - Electric energy system
  - Roles and responsibilities of energy-related organizations
  - Magnitude of potential emission benefits
  - Existing EPA EE/RE SIP guidance

SIP Criteria

- For the control strategy and emerging/voluntary measures pathways, emission reductions must be
  - Quantifiable
  - Surplus
  - Enforceable
  - Permanent
- Need an emissions baseline
  - EPA currently using IPM dispatch model to establish baseline
    - Currently incorporates existing Federal EE policies

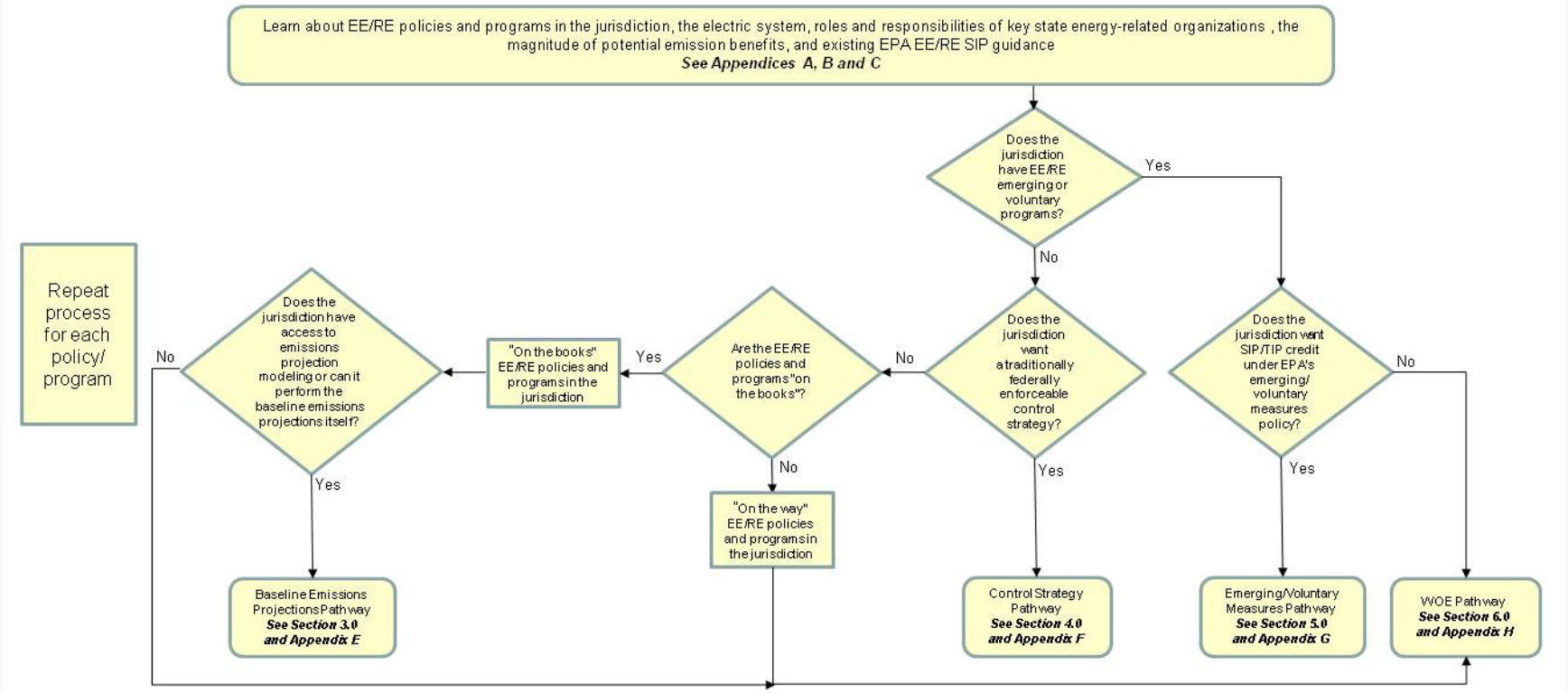
EE Data Gaps

- EE Programs were designed for different purposes than environmental
  - Market transformation
  - Benefit/cost justifications
  - NOT environmental
  - Increased EE does not necessarily equate to lower energy consumption and fewer air emissions
- How to quantify environmental benefits
  - Temporal and spatial issues
  - Not all kwh are equal

Decision-Making Flow Chart

- Help agencies navigate decision-making for the four pathways
- Identifies the important EE/RE characteristics and questions to consider

EE/RE SIP Pathway Flow Chart



Note: This flowchart is intended to accommodate most EE/RE policies/programs, but not necessarily all. State, tribal and local agencies should consult with EPA regional offices on individual policies/programs that the flowchart does not address.

Types of Policies/Programs Suitable for Each Pathway

- Baseline emissions projection pathway
  - "On the books" policies and programs
- Control strategy pathway
  - "On the way" policies and programs
- Emerging/voluntary measures pathway
  - Locally-based EE/RE activities not enforceable and not easy to quantify
- WOE pathway
  - EE/RE policies and programs not placed in other pathways

Appendix C: Existing EE/RE Guidance

Purpose: Provide background on EPA guidance related to four pathways

Baseline Pathway	Control Measure Pathway	Emerging/Voluntary Measures Pathway	WOE Pathway

• Documents on estimating future year emissions
• IPM to predict future EGU emissions
• Other methods to estimate future-year emissions
	• EE/RE SIP guidance
	• Guidance addresses:
	  • Quantifiable
	  • Surplus
	  • Enforceable
	  • Permanent
		• Emerging and voluntary measures guidance addresses:
		  • Quantifiable
		  • Surplus
		  • Enforceable
		  • Permanent
		• Bundling emerging/voluntary measures guidance
			• Modeling guidance
			• Addresses WOE demonstrations

Appendix I: Quantification Approaches

Step 2: Quantify or estimate displaced EGU emissions from energy impacts of an energy efficiency policy or renewable energy policy

- Dispatch and capacity expansion models approach
- Adjusted historical hourly generation stacking approach
- Capacity factor as a proxy for dispatch order
- eGRID subregion emission rates approach

Appendix J: EPA's Methodology for Estimating Energy Impacts of EE/RE Policies

Purpose: Provide EPA's methodology for estimating energy savings impacts of state "on the books" EE/RE policies

- Help states incorporate "on the books" EE/RE policies into future attainment year baselines
- Focus on policies not accounted for in DOE's Annual Energy Outlook
- Develop methods to estimate energy impacts of existing policies not reflected in AEO 2010

Website for Location of Manual

- http://www.epa.gov/airquality/eere.html