Environmental Metrics and Energy Efficiency Programs

NEEP M&V Forum

Sept 16, 2009

United States Environmental Protection Agency New England

Energy Efficiency and Environment

- What is EPA's interest??
- How to measure EE benefits and Net Savings
  - State Implementation Plan (SIP) Process
  - EE program metrics
- Can the two come together??
  - Net savings correlated to emission reductions???

SIP Baseline

- Current emission inventory
- Growth assumptions
- Avoid double counting
  - EE is often already included in growth assumptions
  - Gross vs. Net
- Can EE be used as an emission reduction strategy?

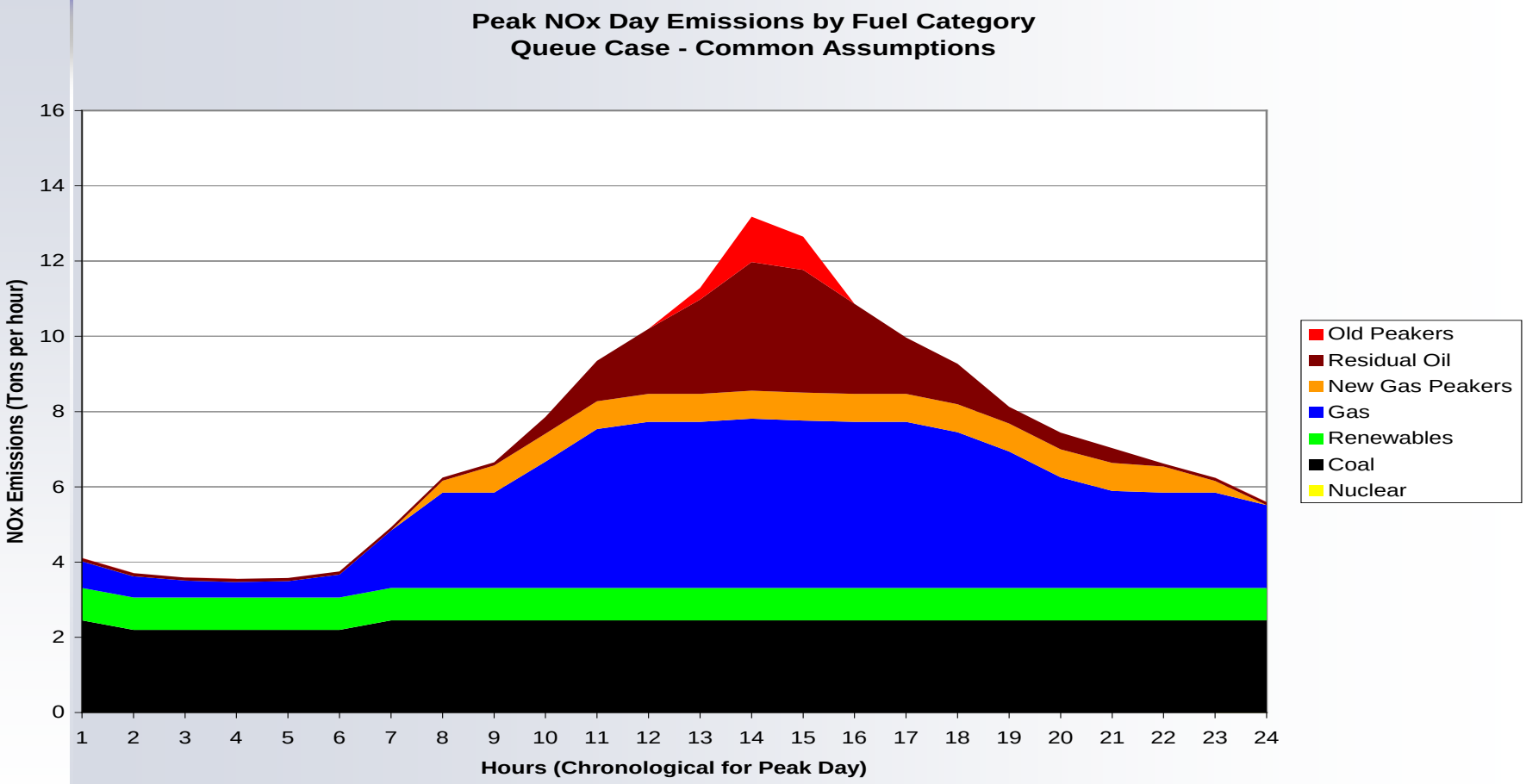
Additionality and Baselines

- Additionality
  - Would the emission reduction have happened in the absence of any program
- Avoided emissions vs. emission reductions
- How to get beyond baseline and account for emission reductions

Attribution

- Air Regulator focus is on savings and resultant emission reductions
- Is EE the best way to achieve emission reduction goals??
  - EE vs. pollution control on power plants
- Attribution in the aggregate is important
  - Program-specific attribution is less important to air regulators

Example of New England Peak Day NO_x Emissions (From ISO's Scenario Analysis' Queue Scenario)



Difficulties

- Location of emission reductions
- Regional nature of power grid
- Regional expanse of EE programs
- Program centric focus of EE measurement efforts
- Similar standards needed across states and regions
- Generator vs. Customer, and Annual vs. Lifetime savings
- Time of day of energy displacement
  - Not all MWh are the same
  - High Electric Demand Days (HEDDs)

EE and SIPs

- In a SIP, any emission reductions must be:
  - Quantifiable
  - Surplus
  - Enforceable
  - Permanent
- Is EE program fully implemented?
- Were projected energy savings met?
- Evaluate assumptions used to predict location of emission reductions
- Measure total amount of electricity consumed before and after measure taken
- Specific monitoring, recordkeeping and reporting requirements

Questions???