Eastern Regional Technical Advisory Committee (ERTAC) Electric Generating Unit (EGU) Forecasting Tool

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Background

- ERTAC is a collaborative effort to improve emission inventories among the northeastern, mid-Atlantic, southeastern, and Lake Michigan area states; other member states; industry representatives; and multi-jurisdictional planning organization (MJO) representatives.

- EGU emissions in the past have been grown by the Integrated Planning Model (IPM), but there have been concerns with estimated EGU operations in load pockets.
Background (cont.)

- ERTAC has developed the EGU Projection Tool which can be used to grow EGU air emissions inventories for SIP planning purposes.

- The tool uses base year hourly USEPA Clean Air Markets Division data and fuel specific growth rates and other information to estimate future emissions.
EGU Projection Tool Subcommittees

- Implementation – create logic for software
- Growth – regional specific growth rates for peak/off-peak
- Data Tracking – improve default data to reflect state specific information
- Renewables & Conservation – characterize programs not already included in growth factors
How does the ERTAC EGU Projection Tool work?

- Starting point: 2007 CEM data by region
  - Units ordered from maximum to minimum hours operated
- States provide information: new units, controls & other changes
- Regional growth rates
  - Base – Energy Information Administration (EIA) Annual Energy Outlook (AEO)
  - Peak – North American Electric Reliability Corporation (NERC)
- Future hourly estimates based on base year activity
  - Temporal profile matches meteorology
- Growth beyond regional capacity results in “Generation Deficit Units” (referred to as “generic units” in IPM)
- Test hourly reserve capacity
Benefits of ERTAC EGU Projection Tool

- Conservative predictions
  - No big swings in generation
  - No unexpected unit shutdowns
- Inputs are completely transparent
- Software is not proprietary
- Output files are hourly and reflect base year meteorology
  - Hourly emissions reflect HEDD concerns
- Quickly evaluates various scenarios
  - Regional and fuel modularity
  - Can test retirements, growth, and controls
Progress so far....

- **EGU Projection Tool Development:**
  - Methodology created, documentation crafted
  - Preprocessor & projection running on Linux and Windows (GA, VA, MARAMA, IN, NJ, OTC)
  - Developing post-processing software to SMOKE

- **Estimating Growth in Generation:**
  - Growth rates and regions defined
  - Created growth rate inputs using AEO/NERC 2013
Progress so far....(cont.)

- **Input File Development:**
  - Unit file and future controls file reviewed by states
  - Cap files developed based on CAIR caps
  - Further state input ongoing (updates every 4 months)

- **Results:**
  - Version 1.65 complete for continental U.S. (CONUS)
  - Used AEO/NERC 2013 growth factors
  - Ran output through first iterations of the post-processor
  - 1 round of member state review

- **Sensitivities:**
  - Conducted scenarios with varied input values
  - Ran alternative growth rate sensitivities
Stakeholder Webinars hosted by MARAMA

• Wednesday, May 15 from 1-3 PM
  – How does the ERTAC EGU projection tool work?
  – Preprocessing, Modularity, Growth Rates

• Thursday, May 16 from 1-3 PM
  – ERTAC EGU projection tool results presentation
  – Unit level activity and facility level results

• Connecticut DEEP has sent information on the webinars to the SIPRAC mailing list.
Questions?

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