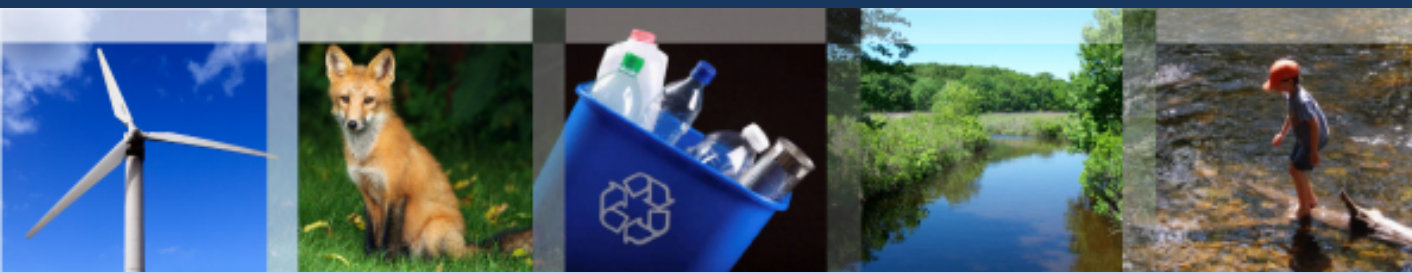# Connecticut Department of Energy and Environmental Protection

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

May 9, 2013
Wendy Jacobs
SIPRAC

Connecticut Department of Energy and Environmental Protection

# 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.

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# 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.

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# 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

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# 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

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# 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

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# 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

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# 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.

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# Questions?

Wendy Jacobs
Wendy.jacobs@ct.gov
(860) 424-3457

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