

Agenda Item 5.0

PSPC Meeting 278

August 19, 2010

Status of ISO-NE Electric Generator Air Emissions Report

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2008 Emissions Report

- The Environmental Advisory Group (EAG) requested an emissions report that has a greater focus on total system emissions than what had been presented in past Marginal Emission Rate Analysis (MEA) reports.
- The new “2008 New England Electric Generator Air Emissions Report” includes those changes
 - Presents both annual system emissions as well as marginal emission rates and replaces the MEA report
 - Also summarizes a special peak-load day NO_x analysis requested by environmental regulators via the EAG

Current Emissions Report Calculations

- Calculate total system emissions (in kTons) and annual emission rates (in lb/MWh) for NO_x, SO₂, and CO₂ for all ISO-administered New England generators
- Calculate marginal emission rates based only on emissions from natural gas and oil-fired generators
 - These units are considered to be the ones that typically respond to hourly increases or decreases in electrical demand
- In response to stakeholder discussions, the ISO is planning to evaluate other methods of calculating marginal emissions

Potential Changes for Next Year's Emissions Report

The ISO is evaluating the possibility of using other methods of calculating marginal emissions, such as:

- A method similar to the ISO's peak-day NO_x Analysis
 - The peak-day NO_x analysis calculated the emissions resulting from 500 MW of the highest bidding generators during the five highest peak days for the years 2005 through 2009.
 - This method accounts for generation that would not vary with the load (i.e. hydros, must-run units)
 - The ISO is investigating whether this method could be applied to all days of the year.

Potential Changes for Next Year's Emissions Report (cont.)

- Determining the actual marginal unit for all hours of the year
 - PJM has calculated marginal CO₂ emissions based on the last generating unit to be brought on line
 - It includes all types of units, and does not take into account generation that would not vary with load
 - The ISO has the data needed for this analysis and could perform the calculation relatively easily
 - The results of the analysis could be used as a comparison with the ISO's current marginal analysis, which is based on all gas and oil generation

Potential Changes for Next Year's Emissions Report (cont.)

The ISO is also reviewing reports suggested by the EAG which describe various issues related to the calculation of marginal emissions:

- “Reducing Emissions in Connecticut on High Electric Demand Days (HEDD)”, A Report for the CT Department of Environmental Protection and the US Environmental Protection Agency, by Chris James and Jeremy Fisher, July 25, 2008
- “Communicating complexity and informing decision-makers: challenges in the data and computation of environmental benefits of renewable energy”, MIT Master’s Thesis by Tarek Rached, May 18, 2008
- “Wind Energy and Air Emission Reduction Benefits: A Primer” by D. Jacobson and C. High for the National Renewable Energy Laboratory, February 2008

Next Steps

- The ISO will review the options and make a decision regarding the calculation of marginal emissions for next year's Electric Generator Air Emissions Report.

