

Analysis of New York City Peaking Turbine Emissions During High Demand Days

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- Reported are for cap and trade program
- Actual should be used for ozone modeling
- Low Mass Emitters
 - Conservative estimates
 - Different Options
- Actual Emissions
 - Average instead of maximum
 - Adjust for meteorology of episode

- Reported Peak Day
 - 74 tons, 0.455 lb/mmBtu
- Actual Peak Day
 - 52 tons, 0.393 lb/mmBtu
- Tonnage Difference is 30% lower
- Rate Difference is 14% lower

- NESCAUM paper reduced peakers to 0.1 lb/mmBtu
- Hot and humid conditions during episodes reduces control efficiencies
- Turbines are old and not designed for water injection
- Realistic rates for water injection
 - 0.3 for oil-firing turbines
 - 0.15 for gas-firing turbines
- Not clear how many NYC turbines could be controlled due to physical constraints

- NRG Astoria Gas Turbine Facility
 - 19 turbines 366 MW
- Actual Peak Day Emissions
 - 9.9 tons on peak days
- Reduce rate 15% (inlet fogging)
 - 8.2 tons on peak days
- Reduce rate to 0.15 on gas and 0.30 on oil
 - 4.5 tons on peak days
- Replace with LMS 100 turbines
 - 0.2 tons on peak days