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# Energy Efficiency & Renewable Energy Set-Aside in the NO<sub>x</sub> Budget Trading Program: Integrating Energy and Air Quality Goals

State Technical Forum on EE/RE

Call #2 - November 18, 2004

# Why Should I Be Interested? My State Is Not in the NO<sub>x</sub> Budget Program

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- ◆ The NO<sub>x</sub> Budget Set-Aside Program offers one model for:
  - Integrating energy and air quality programs
  - Tracking energy savings
  - Adding an incentive to promote EE/RE activities
- ◆ The Program presents potential lessons learned about State Implementation Plan (SIP) credit programs, coordinating activities between environmental and energy offices, and providing general recognition of value of EE/RE for achieving air quality improvement

# The NO<sub>x</sub> Budget Trading Program

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- ◆ The NO<sub>x</sub> Budget Trading Program affects 21 states in the eastern U.S. and the District of Columbia (Georgia's participation in the SIP Call is under review by the EPA)
  
- ◆ The goal of the program is to reduce transport of NO<sub>x</sub> emissions that contribute to ozone nonattainment by:
  - Setting state emission budgets well below baseline levels, and
  - Providing a cost-effective means of meeting those budgets through an interstate emissions trading program that affects primarily electric generating plants and large industrial boilers
  
- ◆ The program began in 2003 for some Northeastern and Mid-Atlantic states (and D.C.); most other jurisdictions just completed their first control period in 2004 (Missouri is expected to begin its program in 2005)

# The NO<sub>x</sub> Budget Trading Program EE/RE Set-Aside

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- ◆ EPA establishes a NO<sub>x</sub> budget (emissions cap) in each state
- ◆ States allocate the budget in the form of “allowances” (equal to one ton of emissions) to major NO<sub>x</sub> sources (allocations generally based on pro rata share of heat input to a source, although states can allocate on basis of electrical (and/or steam) output)
- ◆ At the end of the control period (May-September), each source must hold allowances to cover its emissions, and sources may trade allowances to achieve compliance
- ◆ The EPA encouraged states to set-aside a percentage of their allowances for energy efficiency and renewable energy projects that displace demand (and in theory reduce emissions) from the NO<sub>x</sub> emitting units in the program

# EPA Guidance on Establishing EE/RE Programs

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- ◆ “Guidance on Establishing an Energy Efficiency and Renewable Energy (EE/RE) Set-Aside in the NO<sub>x</sub> Budget Trading Program” – March 1999
- ◆ “Creating an Energy Efficiency and Renewable Energy (EE/RE) Set-Aside in the NO<sub>x</sub> Budget Trading Program” (EPA-430-K-00-004) – April 2000
- ◆ “Designing Measurement and Verification Requirements” – (under development)

# States with EE/RE Set-Aside Programs

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- ◆ Indiana, Maryland, Massachusetts, New Jersey, New York, and Ohio have EPA-approved NO<sub>x</sub> SIP programs with EE/RE set-aside programs
- ◆ State programs are evolving, and EPA is finalizing a report on the current status of these programs
- ◆ These programs provide a significant monetary incentive for EE/RE programs -- based on a value of about \$3,000/allowance, the total available set-asides in these states are worth over \$13 million annually

# How Large Are the NO<sub>x</sub> Set-Aside Programs?

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State	Size of Set-Aside NO <sub>x</sub> Tons *	Percent of 2003 Trading Program Budget
IN	1,115	2%
MD	436	3%
MA	643	5%
NJ	410	5%
NY	1,241	3%
OH	495	1%

\*At \$3,000/ton, the 4,340 total allowances are worth over \$13 million annually

# What Projects or Actions Are Eligible?

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- ◆ State requirements vary regarding the types of entities and projects that are eligible
- ◆ EPA recommends the following criteria be used to determine project eligibility under the set-aside:
  - Reduce or displace electricity load from the air emissions sources in the emissions control program (NO<sub>x</sub> budget units)
  - Lead to energy savings or renewable energy production during the ozone season for which the allowances are requested
  - Activities not used for compliance with other federal regulations or for other SIP credits
  - Measurable and verifiable actions
  - Convertible to at least one ton increments

# EPA Recommended Eligible Projects

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- ◆ Install new combined heat and power (CHP) system project
- ◆ Renewable energy (wind, solar, biomass, landfill methane)
- ◆ Demand side management actions (within or outside the source's facility)

# Length of Allowance Award Period

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- ◆ EPA recommends that eligible projects should be awarded allowances for at least three consecutive years, with annual verification
- ◆ IN, MA, NJ, NY, and OH all award allowances for only one year, and then allow projects to resubmit their claims in later years
- ◆ IN, NY, and OH limit projects to no more than 5 consecutive years
- ◆ MA energy efficiency projects are eligible for up to 7 consecutive years
- ◆ MD projects are eligible for 3 consecutive years, but the state may adjust the amount of the award

# How Are EE/RE Projects Processed?

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- ◆ One Step (used in MA, NJ, NY)
  - Submit claim after the ozone season during which the project was implemented; include verification of savings/reductions
- ◆ Two Step (used in IN and OH; MD appears to use this approach)
  - Proposal/preliminary approval before implementation
  - Verify completion and benefits following the ozone season

# Required Documentation

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- ◆ EPA-recommended documentation:
  - Basic information on project sponsor
  - Description of project with implementation schedule and estimated lifetime
  - Savings or generation with documentation
  - Monitoring and verification method description
  - Three seasons of baseline energy-use data, and verification of accuracy

# Measurement and Verification

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- ◆ EPA measurement and verification guidance is under development
- ◆ IN – directs applicants to use International Performance Measurement and Verification Protocol (IPMVP) or Dept. of Energy (DOE) protocols as examples
- ◆ MA – IPMVP or EPA Conservation Verification Protocol as well as NEPOOL's Operating Procedure 18
- ◆ NJ – Guidance document: *Measurement Protocol for Commercial, Industrial, and Residential Facilities* incorporated by reference at NJAC 7:27-31.21
- ◆ NY – state-specified protocols (NYSERDA M&V activities general topic of December forum call)
- ◆ Note that M&V for the set-aside program has potential uses in other programs where you need to measure the amount of energy savings from an EE/RE project

# Allowance Calculation

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- ◆ 1.5 lbs/MW-hr allocation rate (MD, NJ, NY)
  - EPA recommended this conversion factor as one reasonable approach, but states were free to choose whatever approach they considered appropriate
- ◆ Under development (OH)
- ◆ Detailed approach with different factors depending on type of projects (IN, MA)

# Procedures When the Set-Aside Is Over or Under-Subscribed

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- ◆ If over-subscribed (project sponsors request more allowances than are available)
  - Transfer from new unit set-aside (the new unit set-aside provides allowances to sources added to the budget program in a given year) (IN, NY, MA, NJ)
  - Assign priority to certain forms of EE/RE projects, such as end-use efficiency and renewable energy (IN, MD, NY)
  - Not specified (OH)
- ◆ If under-subscribed (sponsors do not request all available allowances)
  - Allocate to existing NO<sub>x</sub> Budget units (NY, OH)
  - Retain for future year, then distribute to other budget units (IN, MA, MD, NJ)

# Coordination Between the Air Program Office and Other Offices

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- ◆ Environmental agencies generally take the lead, but most states do have some coordination with energy offices during program implementation, including:
  - IN – Dept. of Commerce, Energy Office – project design, energy savings/generation review and calculations
  - MA – Dept. of Energy Research – project review; Dept. of Telecommunication and Energy – taxpayer rights
  - NY – Energy R & D Authority – guidance, calculations, and M & V
  - OH – Dept. of Development, Office of Energy – guidance, project evaluation, and M & V
- ◆ For MD and NJ, coordination with energy offices may occur, but none was mentioned in previous interviews with the environmental program office

# State Actions to Date

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- ◆ Comprehensive guidance documents – IN, OH (under review)
- ◆ Application forms – MA, IN
- ◆ Project review and approval – MA, NY, NJ
- ◆ EPA is currently following up with states to update this information

# Indiana

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- ◆ Implementation began with the 2003 season
- ◆ The set-aside is 2% of the state budget (1,115 tons of NO<sub>x</sub>)
- ◆ Indiana Department of Environmental Management (IDEM), Office of Air Quality prepared a guidance document in collaboration with the Indiana Department of Commerce, Energy Policy Division
- ◆ Eligible projects include: end-use efficiency projects; highly efficient single-user electricity generation, such as micro turbine or fuel cell systems; renewable energy generation, such as projects using wind, PV, hydro, or methane gas captured from landfills or other waste; highly efficient coal or gas replacement plants; and in-plant efficiency projects
- ◆ State contact: Roger Letterman, IDEM, 317-232-8342, [rletterm@dem.state.in.us](mailto:rletterm@dem.state.in.us)

# New Jersey

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- ◆ Implementation began with the 1999 (OTC) season and the 2003 (SIP Call) season
- ◆ The set-aside is 5% of the state budget (410 tons of NO<sub>x</sub>)
- ◆ Guidance is available on measurement and verification procedures
- ◆ Eligible projects include: non-polluting, end-user efficiency projects for NJ electricity consumers; renewable energy generation, such as projects using wind or solar; fuel cell technology; methane gas captured from landfills; and other environmentally beneficial projects approved by the New Jersey Department of Environmental Protection (NJ DEP)
- ◆ State contact: Tom McNevin, NJ DEP, 609-984-9766, [tmcnevin@dep.state.nj.us](mailto:tmcnevin@dep.state.nj.us)

# New York

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- ◆ Implementation began with the 2003 season under the SIP Call rule
- ◆ The set-aside is 3% of the state budget (1,241 tons of NO<sub>x</sub>)
- ◆ New York Department of Environmental Conservation (NY DEC) is developing guidance in collaboration with the New York State Energy Research and Development Authority (NYSERDA)
- ◆ Eligible projects include: end-user efficiency projects; renewable energy generation, such as projects using wind, solar, methane waste, or sustainably managed biomass (combustion or pyrolysis of solid waste is excluded); in-plant efficiency projects; and certain highly efficient fossil-fuel EGUs and non-EGUs
- ◆ State contact: Michael Sheehan, NY DEC, 518-402-8396, [mpsheeha@gw.dec.state.ny.us](mailto:mpsheeha@gw.dec.state.ny.us)

# Ohio

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- ◆ Implementation will begin with the 2006 season and applications will be accepted in Spring, 2005
- ◆ The set-aside is 1% of the state budget (495 tons of NO<sub>x</sub>)
- ◆ Ohio Environmental Protection Agency (OH EPA) developed guidance in collaboration with the Ohio Department of Development, Energy Efficiency Office
- ◆ Eligible projects include: end-user efficiency projects; renewable energy generation, such as projects using wind, solar, biomass, or landfill methane; and in-plant efficiency projects at EGUs
- ◆ Ohio has an Innovative Technology Projects Set-Aside as well (could apply to innovative mobile source NO<sub>x</sub> reduction, for example)
- ◆ State contact: Jim Tichich, OH EPA, 614-644-4844, [jim.tichich@epa.state.oh.us](mailto:jim.tichich@epa.state.oh.us)