

SIP Credit Guidance: Energy Efficiency and Renewables

Prepared for MWAQC TAC

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EPA Guidance

Energy Efficiency and Renewables

- The new EPA Guidance:
 - promotes energy efficiency and renewables as control measures in SIPs
 - sets procedure to quantify and validate emission reductions
- Qualifying projects:
 - reduce energy usage
 - generate energy with fewer emissions



What Projects Qualify?

- Demand side management
 - Electric sector energy efficiency
- Supply side measures
 - Renewable energy projects



EPA highlighted the Montgomery County Wind Purchase Program in the Guidance



To be approved, the measure must:

- Provide emission reductions that are:
 - Quantifiable
 - Surplus (i.e., not otherwise used to meet air quality goals)
 - Enforceable
 - Permanent



EERE Considerations for Allowance Allocations

- The NOx Budget Trading Program/SIP Call establishes a regional NOx emission cap and allowance trading program.
- Under a cap and trade framework, in order for the emission reduction from measures to be “Surplus”, the State must establish a mechanism to retire allowances or create a set-aside.



EERE Consideration in Emission Inventory

- Do not count activities already accounted for in a State's projection of future baseline emissions for EGUs.
- Question: How were energy efficiency or renewable energy measures applied in projecting uncontrolled emissions for the milestone year?



Maximum Voluntary SIP Credit

- Total SIP credit potential is 9%
 - Voluntary Mobile Source Emission Reduction (3%)
 - Voluntary Stationary Source Emission Reduction (3%)
 - Voluntary Emission Reduction from Electric-sector Energy Efficiency and Renewable Energy Measures (3%)
- Total NO_x reduction in 2005 = 393.3 tpd
 - 9% = 35.4 tpd
 - 3% = 11.8 tpd



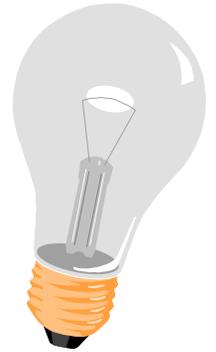
Implications for Washington DC Region



- Maryland has an allowance set-aside program for renewables and clean air projects (e.g., energy efficiency).
- Allowances allocated to states by EPA (NOx Budget Trading Program).
- In MD, 3% of NOx Allowances are available for renewable and clean air projects.
- Renewables first priority. Some allowances already committed to wind energy.
- Threshold: efficiency measure must exceed 1 tpd NOx.
 - $1 \text{ tpd NOx} / 1.5 \text{ lbs NOx/MWh} * 2000 = 1,333 \text{ MWh.}$



Potential EERE Credits in Washington Region



- State of Maryland/Maryland Energy Administration Programs:
 - Public Benefits Bill (pending legislation)
 - Energy Efficiency Standards Act (2003)/MEA Rule proposed (2004)
 - Renewable Portfolio Standards (2004)
 - State Agency Loan Program (1991)
 - Consumer Rebate Program (expired July 2004)
 - Energy efficiency improvement and product procurement goals (MD Executive Order 2001)
 - Solar Schools Program
 - Energy Performance Contracting
 - Green Buildings Tax Credit
 - Community Energy Loan Program
 - Industries of the Future Partnership



Potential EERE Credits in Washington Region (cont)



- Local Jurisdictions
 - Wind energy purchase program
 - Energy Star office equipment, buildings
 - New administrative procedures to reduce energy consumption in Montgomery County
 - Green Building Codes in Arlington County



Procedure for Quantifying EERE SIP Credits

- Step 1: Estimate the energy savings or change in energy generation
- Step 2: Convert the energy changes into an estimated emission reduction
- Step 3: Determine the impact from the estimated reduction on air quality in the nonattainment area (modeling)
- Step 4: Provide a mechanism to validate the effectiveness of the project (monitoring, recordkeeping, and reporting)



Example of Energy Efficiency SIP Credit in Texas

- Texas Legislature passed law that requires energy efficiency programs to document efforts and obtain SIP credit.
- Texas A&M uses EPA-approved EGrid model to estimate emission reduction from energy efficiency projects.
- Sample projects:
 - Energy Codes for New Construction 0.72 tpd NO_x credit.
 - Alamo area COG lighting and building efficiency investment 0.009 tpd NO_x credit.
 - PUC grant program for efficient appliances not approved due to lack of documentation.



Sample Calculations



- **Energy Efficiency Standards Act (Maryland Legislation)**
 - Mandatory program that sets efficiency standards for range of equipment.
 - Based on Energy Star, California, and NEMA standards.
 - Estimated to reduce peak summer energy consumption by 260 MW in 2010 (ACEEE estimate).
 - Result: 1.8 tpd NO_x reduction
- **Renewable Portfolio Standard**
 - In 2006, 1.1 million MWh from renewables, or >2 tpd NO_x.
 - State capacity estimated at 5 million MWh.
- **Public Benefits Bill**
 - Pending legislation in MD.
 - Establishes fund for energy efficiency investments.
 - Possible reduction >1 tpd NO_x

Next Steps

- Identify candidate programs
- Develop energy impact estimates
- Calculate cost, benefits, and emission reduction for programs
- Consider implementation requirements, including monitoring, verification, and allowances
- Guidance Document web link:
 - <http://www.epa.gov/ttn/oarpg/t1pgm.html>

