



Roadmap for Incorporating Energy Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans

Appendix G: Emerging/Voluntary Measures
Pathway

Roadmap for Incorporating Energy Efficiency/Renewable Energy
Policies and Programs into State and Tribal Implementation Plans

Appendix G: Emerging/Voluntary Measures Pathway

By:

U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Outreach and Information Division
Research Triangle Park, North Carolina

U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Outreach and Information Division
Research Triangle Park, North Carolina

ACKNOWLEDGMENTS

We would like to acknowledge substantial contributions from members of an inter-office EPA team that included the Office of Atmospheric Programs, the Office of Policy Analysis and Review, the Office of General Counsel and Regions 1 and 6. This document also reflects comments received from a number of stakeholders, including state and local air quality agencies.

Contents

SECTION G.1: BASICS OF EMERGING/VOLUNTARY MEASURES	G-4
Pathway Description	G-4
Tradeoffs of Pathway	G-5
Circumstances the Pathway is Best Suited For	G-5
SECTION G.2: FOUR CRITERIA FOR SIP/TIP EMERGING/VOLUNTARY MEASURES	G-5
Quantifiable	G-5
Surplus	G-7
Enforceable	G-7
Permanent	G-8
How a State or Tribe Can Get SIP/TIP Approval for Emerging/Voluntary Measures	G-8
SECTION G.3: BUNDLING OF EMERGING/VOLUNTARY MEASURES	G-8
REFERENCES	G-9

SECTION G.1: BASICS OF EMERGING/VOLUNTARY MEASURES

Pathway Description

In the 2004 guidance¹, the U.S. Environmental Protection Agency (EPA) recognized that many areas of the country have implemented most available traditional emission control strategies and are interested in new types of pollutant reduction strategies to attain and maintain applicable National Ambient Air Quality Standard (NAAQS), including emerging and voluntary energy efficiency/renewable energy (EE/RE) programs. The EPA supports and encourages the testing of voluntary and emerging pollutant reduction strategies. A voluntary measure is a measure or strategy that is not enforceable against an individual emissions source or party administering the measure. An emerging measure is a measure or strategy that does not have the same high level of certainty as traditional measures for quantification purposes. A measure can be either emerging or voluntary, or both.

Task Checklist: Emerging/Voluntary Measures Pathway	
✓	Identify and describe the emerging/voluntary EE/RE policies and programs to be included in pathway
✓	Calculate emissions reductions, including description of quantification technique
✓	The state, tribal, or local agency needs to make an enforceable commitment to: <ul style="list-style-type: none">✓ Implement those parts of the measure for which the agency is responsible✓ Monitor, evaluate, and report at least every three years on progress toward emission reductions✓ Remedy any SIP/TIP credit shortfall if the program does not achieve projected emission reductions
✓	Certify EE/RE policies and programs are permanent
✓	Certify EE/RE policies and programs are surplus and not accounted for as part of another pathway

Similar to the control strategy pathway, under this option an EE/RE program can receive emission reduction State Implementation Plan/Tribal Implementation Plan (SIP/TIP) credit and would need to satisfy the four criteria for SIP/TIP measures:

- Quantifiable
- Surplus
- Enforceable
- Permanent

EPA's Emerging and Voluntary Measures Policy² provides flexibility for emerging measures on the quantifiable criterion, and for voluntary measures it provides flexibility regarding the enforceable criterion.

¹ EPA (2004).

² EPA (2004).

Tradeoffs of Pathway

State, tribal and local agencies can, of course, select more than one pathway for their jurisdiction's different EE/RE policies and programs. With respect to the emerging/voluntary measures pathway, the quantity of potential SIP/TIP credit is presumptively limited to 6 percent of the reductions needed for reasonable further progress (RFP), attainment, or maintenance of a NAAQS. The limitations and conditions under which emerging and or voluntary measures can receive credit are determined at the beginning of the SIP/TIP process, and provisional pollutant reduction credit is provided under the assumption that the EE/RE measures will achieve the quantity of the initially estimated emission reductions. The actual amount of credit to be awarded and the rationale for approving voluntary/emerging measures will be established through notice and comment rulemaking during the SIP/TIP approval process.

Circumstances the Pathway is Best Suited For

This pathway is best suited for voluntary measures, emerging measures and measures that are both emerging and voluntary. For voluntary measures, this pathway is well suited for jurisdictions that have a voluntary EE/RE policy or program that is not enforceable against an emissions source or implementing party, but for which state, tribal or local agency wants SIP/TIP credit. For emerging measures, this pathway is well suited for EE/RE policies and programs for which it is difficult to quantify the emission impacts but for which the state, tribal or local agency wants SIP/TIP credit.

SECTION G.2: FOUR CRITERIA FOR SIP/TIP EMERGING/VOLUNTARY MEASURES

In order to adopt and implement emission reduction strategies to meet SIP/TIP CAA requirements, such as RFP, attainment demonstrations, general conformity and maintenance, the reductions from emerging/voluntary measures need to be:

- Quantifiable
- Enforceable
- Surplus
- Permanent

Quantifiable

Emissions and emission reductions attributed to the measure are quantifiable if someone can reliably measure or determine their magnitude in a manner that can be replicated. Any uncertainty in the quantification should be addressed by following the guidance contained in the Economic Incentives Program (EIP)³ in section 5.2 (b). Voluntary measures should meet this provision unless the measure is also an emerging measure.

As noted in Appendix C, for emerging and/or voluntary stationary measures the presumptive limit is 6 percent of the total amount of emission reductions required for the RFP, attainment, or maintenance demonstration purposes. The limit applies to the total quantity of emission reductions that can be claimed from any combination of emerging and/or voluntary measures.

³ EPA (2001).

The limit is presumptive in that EPA believes it may approve measures into a SIP/TIP above the presumptive 6 percent where a clear and convincing justification is made by the state, tribal or local agency as to why a higher limit should apply in their case. The EPA will review any request for a higher limit on a case-by-case basis through SIP/TIP approval rulemaking.

For emerging measures, EPA's Emerging and Voluntary Measures Policy specifically allows flexibility for the quantification criteria. The policy allows jurisdictions that want to try new types of emission control or pollution reduction strategies the leeway to do so. The EPA's policy provides a mechanism that allows the state, tribal or local agency to receive provisional emission reduction credit in their SIP/TIP for EE/RE pollutant reduction strategies that have the potential to generate additional emission reductions or air quality benefits. In these circumstances, the state, tribal or local agency should quantify the emission reduction based on the best knowledge currently available for the measure being considered. The state, tribal or local agency should develop a protocol based on a carefully considered determination of the activities that it commits to undertake and the projected impact on emissions of those activities. The estimates may be based on modeling, on extrapolated experience for similar types of projects or on another approach that is likely to yield a reasonable estimate of emission reduction. Refer to Appendix I for available emission quantification approaches of EE/RE policies and programs.

The EPA recommends that state, tribal and local agencies consider the capacity factor approach presented in Appendix I as a starting point for quantification, recognizing that for emerging/voluntary programs more detailed methods are probably not warranted. Agencies will need to try to complete two tasks, recognizing that they may be challenging for emerging/voluntary measures:

- 1) Estimate the energy savings that an EE policy will produce, or, for a RE policy, the amount of energy generation that will occur.
- 2) Quantify displaced EGU emissions from energy impacts of an EE policy or RE policy.

The state, tribal or local agency should then have in place a protocol for tracking progress toward meeting that estimate of emission reduction, which may mean monitoring a surrogate measure of implementation. For example, suppose a local government in a nonattainment area implements a municipal energy conservation program for its buildings or a program to provide incentives for changeover to more energy efficient air conditioners. To quantify the emission benefits, the first step would be to select metrics to indicate participation levels so that the area can determine if the conservation plan or incentive program was fully implemented. The local government should make sufficient information available to verify that the EE/RE policy or program was implemented as proposed.

After determining participation levels, the next step would be to determine project energy savings based on participation. The state, tribal or local agency can perform a calculation of energy savings based on the EE measures implemented or on the number of more efficient air conditioners installed. That energy savings estimate can then be used to generate an emission

reduction number using the suggested capacity factor technique (see Appendix I). A final step would be to evaluate whether the predicted emission reductions occurred. For example, where appropriate, the validation process could include review of the total electricity used or generated before and after a measure is implemented, or tracking of implementation surrogates. In certain cases, monitoring and record keeping may be necessary to quantify the actual amount of SIP/TIP credit generated. This information will vary according to the nature of the project and initiative. Such things as the method used to determine the credit, as well as the magnitude and location of the credit generated and the tools available to track and monitor discrete results will affect the actual level of detail and information necessary. For example evaluation and verification protocols, refer to the Department of Energy's National Action Plan.⁴

As noted below, the area would most likely want to “bundle” this program with other emerging and/or voluntary EE/RE efforts to help ensure a bigger impact and to obtain more credit.

Surplus

Emission reductions used to meet the requirements of the emerging/voluntary measures pathway are surplus as long as they are not relied upon in any of the other three pathways included in a jurisdiction's SIP/TIP. Jurisdictions may rely on emission reductions associated with the EE/RE policies and programs to satisfy the SIP RACT and RFP requirements, as well as CAA requirements for emission standards. The state, tribal or local agency needs to indicate in writing that the emission reductions being claimed for credit under the emerging/voluntary measures policy are not also reflected in the baseline emission projection, traditional control strategy or a WOE demonstration SIP/TIP pathways.

Enforceable

As described in Appendix C, EPA's Emerging and Voluntary Measures policy provides some flexibility on the enforceability criterion for voluntary measures by providing that the state, tribal or local agency assure that the emission reductions credited in the SIP/TIP occur. The state, tribal or local agency would make an enforceable commitment in writing to monitor, assess and report on the emission reductions resulting from the voluntary measures and take responsibility, in a timely manner, for making up any shortfalls in emission reductions for emerging/voluntary measures.

For emerging measures, emission reductions and other mandatory state or local actions are enforceable against the source, if for each source:

- They are independently verifiable;
- Program violations are defined;
- Those responsible for the violations can be identified;
- They are enforceable in accordance with EPA guidance on practicable enforceability⁵;

⁴ EPA and the U.S. Department of Energy (2006).

⁵ EPA (1989) and EPA (1992).

- The state maintains, for emerging measures, the ability to apply penalties and secure appropriate corrective action where applicable; and
- The state maintains the ability, for voluntary measures, to secure appropriate corrective action with respect to portions of the program that are directly enforceable against the source

Permanent

The emission reductions expected from the state, tribal or local agency's EE/RE programs should be fully implemented during the term for which the credit is granted unless, at the time of approval of the plan, the agency makes clear that another measure will replace it, or the agency demonstrates through a SIP/TIP revision that the measure is no longer necessary to meet any applicable SIP/TIP criteria.

How a State or Tribe Can Get SIP/TIP Approval for Emerging/Voluntary Measures

A state or tribe would submit a SIP/TIP to EPA which:

- Identifies and describes the measure;
- Contains projections of emission reductions attributable to the program, along with relevant technical support documentation, including, for emerging measures, a full discussion of the relevant best available science supporting the measure;
- Enforceably commits the state, tribal or local agency to implement those parts of the measure for which the government is responsible;
- Enforceably commits the agency to monitor, evaluate, and report at least every three years to the public and EPA on the resulting emissions effect of the emission or pollutant reduction measure;
- Enforceably commits the agency to remedy any SIP/TIP credit shortfall in a timely manner, if the program does not achieve projected emission reductions;
- Meets all other requirements for SIP/TIP revisions under sections 110 and 172 and any applicable sections of the CAA; and
- Undergoes public notice and comment as any other SIP/TIP revision.

SECTION G.3: BUNDLING OF EMERGING/VOLUNTARY MEASURES

State, tribal and local agencies can bundle individual emerging and voluntary measures in a single SIP/TIP submission. Air agencies would need to quantify the emissions reductions for each measure in the bundle and sum the total reductions in the SIP/TIP submission. After SIP/TIP approval, each individual measure would be implemented according to its schedule in the SIP/TIP. It is the performance of the entire bundle (the sum of the emission reductions from all the measures in the bundle) that is considered for SIP/TIP evaluation purposes, not the effectiveness of any individual measure. Refer to Appendix K for examples of states that have included bundled voluntary measures in their SIP/TIP.

REFERENCES

EPA (1989). *Guidance on Limiting Potential to Emit in New Source Permitting*. June 13, 1989. Available online at <http://www.epa.gov/reg3artd/permitting/t5_epa_guidance.htm>

EPA (1992). *Use of Long Term Rolling Averages to Limit Potential to Emit*. February 24, 1992. Available online at <<http://www.epa.gov/region7/air/title5/t5memos/rollave.pdf>>

EPA (2001). *Improving Air Quality with Economic Incentive Programs*. January 2001. Available online at <<http://www.epa.gov/ttn/oarpg/t1/memoranda/eipfin.pdf>>

EPA (2004). *Incorporating Emerging and Voluntary Measures in a State Implementation Plan (SIP)*. September 2004. Available online at <http://www.epa.gov/ttn/oarpg/t1/memoranda/evm_ievm_g.pdf>

EPA and U.S. Department of Energy (2006). *National Action Plan for Energy Efficiency*. July 2006. Available online at <http://www.epa.gov/cleanenergy/documents/suca/napee_report.pdf>

United States
Environmental Protection
Agency

Office of Air Quality Planning and Standards
Outreach and Information Division
Research Triangle Park, NC

Publication No. EPA-456/D-12-001h
July 2012
