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INCORPORATING EMERGING AND VOLUNTARY MEASURES IN A STATE IMPLEMENTATION PLAN (SIP)

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LIST OF ABBREVIATIONS

BACT	Best Available Control Technology
BART	Best Available Retrofit Technology
CAA	Clean Air Act
CO	Carbon Monoxide
EIP	Economic Incentive Program
ICS	Intermittent Control System
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NSPS	New Source Performance Standard
NSR	New Source Review
NOx	Nitrogen Oxides
PM	Particular Matter
RACT	Reasonable Available Control Technology
RFP	Reasonable Further Progress
ROP	Rate of Progress
SO2	Sulfur Dioxide
VOCs	Volatile Organic Compounds

Incorporating Emerging and Voluntary Measures in a State Implementation Plan (SIP)

SECTION A: Introduction

1. Why are we developing this policy?

Many areas of the country still must adopt and implement additional measures to meet the SIP requirements for attainment, reasonable further progress (RFP), rate of progress (ROP) or maintenance. Some areas have implemented most available traditional emission control strategies and want to try new types of pollutant reduction strategies to attain or maintain the national ambient air quality standards (NAAQS). Areas that are just developing SIP's should consider more traditional measures first but may also wish to consider voluntary and emerging measures if necessary. The EPA supports and encourages the testing of emerging new pollutant reduction strategies.

A ***voluntary measure*** is a measure or strategy that is not enforceable against an individual source.

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 both a voluntary <u>and</u> an emerging measure.

This policy is established to encourage the development of voluntary and emerging measures (i.e. approaches which have not typically been approved into a SIP and which may raise novel issues related to quantifiability and enforceability) by:

A. Providing some flexibility in meeting established SIP requirements for enforceability and quantification;

B. Providing a clear process by which new approaches can be developed and evaluated;

C. Establishing appropriate limitations which govern the conditions under which these new approaches can be applied; and

D. Providing provisional pollutant reduction credit upfront for attainment, RFP, ROP or maintenance requirements to encourage the substantial investment required to implement many new pollutant reduction approaches.

2. What does it mean that this is a policy and not a regulation?

The Clean Air Act (CAA) and implementing regulations at 40 CFR Part 51 contain legally binding requirements. This policy document does not substitute for those provisions or regulations, nor is it a regulation itself. Thus, it does not impose binding, enforceable requirements on any party, and may not apply to a particular situation based upon the circumstances. The EPA and State decision makers retain the discretion to adopt approaches for approval of SIP measures that differ from this guidance where appropriate. Any final decisions by EPA regarding a particular SIP measure will only be made based on the statute and regulations in the context of EPA rulemaking on a submitted SIP revision. Therefore, interested parties may raise questions and objections about the substance of this guidance and appropriateness of the application of this guidance to a particular situation; EPA will, and States should, consider whether or not the recommendations in the guidance are appropriate in that situation. This guidance is a living document and may be revised periodically without public notice. The EPA welcomes public comments on this document at any time and will consider those comments in any future revision of this guidance document. Finally, this document does not prejudice any future final EPA decision regarding approval of any SIP measure.

3. What is the role of this policy?

Many States are finding it difficult to find and implement emission reductions that meet the requirements to receive federal approval of emission reductions for a SIP. This policy addresses emission reduction strategies that do not meet the enforceability or quantification requirements in the standard way. States may be able to claim certain emission reduction strategies for SIP purposes even though they are:

A. Not quantified with as much certainty as usual if the State agrees to periodic evaluations of the actual emissions reductions and meets other obligations as explained below in Section C. For the purpose of this policy, emission reduction strategies that do not have the same high level of certainty as a traditional measure for quantification are referred to as "emerging measures;"

B. Not directly enforceable against the source if the State retains enforceable responsibility for the reduction and meets other obligations as explained below in Section D. For the purpose of this policy, emission reduction strategies that are not enforceable against individual sources are called "voluntary measures."

4. What basic requirements do emission reductions need to receive federal approval for a SIP?

In order to adopt and implement emission reduction strategies to meet SIP CAA requirements, such as RFP, ROP, attainment demonstrations, general conformity, and maintenance, the reductions from control measures must be:

A. *Surplus* – The definition of surplus depends on how the emission reduction will be used.

Emission reductions used to meet air quality attainment requirements are surplus as long as they are not otherwise relied on in air quality-related programs relating to a SIP. For voluntary and emerging measures, EPA believes these reductions should also be surplus to adopted State air quality programs, even those programs that are not in the SIP, such as a consent decree and Federal rules that focus on reducing criteria pollutants or their precursors.

For emission reductions used for attainment, RFP, ROP, maintenance or general conformity, the emission reductions cannot *already* be assumed for the same requirement, where the requirements are cumulative. An emission reduction may be used for more than one of these requirements. For example, emission reductions used to meet the RFP requirement may also be used for the attainment demonstration. However emission reductions are not surplus if they have already been assumed in a program.

In other words, States cannot claim emission reductions that are already assumed in the existing SIP, or that result from any other emission reduction or limitation of a criteria pollutant or precursor that the State is required to have to attain or maintain a NAAQS or satisfy other CAA requirements. In the event that emission reductions relied on from a measure are subsequently required by a new air quality-related program, such as those listed above, those emission reductions would no longer be surplus for this purpose.

B. *Enforceable* – Emission reductions and other required actions are enforceable against the source if for each source:

(1) They are independently verifiable;

(2) Program violations are defined;

(3) Those liable can be identified;

(4) For emerging measures, the State and the EPA maintain the ability to apply penalties and secure appropriate corrective action where applicable;

(5) They are enforceable in accordance with other EPA guidance on practicable enforceability;

(6) For voluntary measures, the EPA maintains the ability to apply penalties and secure appropriate corrective action from the State where applicable and the State maintains the secure appropriate corrective action with respect to portions of the program that are directly enforceable against the source;

(7) Citizens have access to all the emissions-related information obtained from the source; and

(8) For emerging measures, citizens can file suits against sources for violations.

C. *Quantifiable* - Emissions and emission reductions attributed to the measure are quantifiable if someone can reliably and replicably measure or determine them. Any uncertainty in the quantification should be addressed by following the guidance contained in the Economic Incentives Program (EIP)[1] in section 5.2 (b). Voluntary measures should meet this provision unless the measure is also an emerging measure.

D. *Permanent* - An emission reduction strategy must continue throughout the term that the credit is granted unless it is replaced by another measure (through a SIP revision) or the State demonstrates in a SIP revision that the emission reductions from the measure are no longer needed to meet applicable requirements this applies to voluntary and emerging measures.

E. *Anti - Backsliding* - To receive SIP approval of any emerging measure or voluntary measure that replaces an existing SIP measure, the State must demonstrate that the anti-backsliding requirements of section 110 (l) and 193 of the CAA are met[2].

5. How does this policy relate to other existing guidance?

The EPA has already issued other policies for nontraditional programs:

A. "Stationary Source Voluntary Measures Final Policy", January 19, 2001.

B. Mobile Source Voluntary Measures Policy", October 27, 1997. This policy could cover programs such as road congestion pricing and other transportation related controls.

C. "Improving Air Quality with Economic Incentive Programs," EPA- 452/R-01-001, January 2001. This provides additional information on developing and implementing nontraditional control strategies. This guidance is commonly called the Economic Incentive Program (EIP) and is available at: www.epa.gov/ttn/ecas/innostra.html. Emission reductions that are to be

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[1] "Improving Air Quality with Economic Incentive Programs," EPA- 452/R-01-001, January 2001.

[2] EPA has recently clarified applicable requirements for antibacksliding for the ozone NAAQS in 40 CFR Part 51, subpart X.

used in trading programs must be consistent with the EIP.

D. "Guidance on SIP Credits for Emission Reductions from Electric Sector Energy Efficiency and Renewable Energy Measures", signed August 5, 2004. These programs will frequently be emerging and voluntary measures.

This policy addresses emerging and voluntary measures in a SIP by:

A. Modifying the existing policy for stationary source voluntary measures;

B. Adding a new policy for emerging measures; and

C. Reflecting additional guidance for the EIP.

This policy does not apply to mobile emission sources, including on-road and non-road vehicles. For more information about how to take credit for a mobile source emission reduction program, see http://www.epa.gov/otaq/transp/traqvolm.htm.

6. What is the relationship of emerging measures under this policy to the Economic Incentive Program (EIP)?

Economic incentive programs differ from emerging measures in that emission or pollutant reductions (or actions leading to reductions) from economic incentive programs meeting EPA's EIP guidance must be clearly quantifiable.

7. What is the relationship of voluntary measures under this policy to the EIP?

Generally speaking, economic incentive programs meeting EPA's EIP guidance differ from voluntary measures in that emission or pollutant reductions (or actions leading to reductions) must be enforceable against sources. The EIP also provides that "public information" economic incentive programs (e.g., education or incentive programs to reduce energy consumption) may be approved for SIP credit if the State uses one of the following three methods to meet the enforceability requirement:

A. The EIP submittal includes fully adopted contingency measures and contains a State commitment to automatically implement contingency measures, if necessary.

B. The State will only count emission reductions on a retrospective basis.

C. The State has used the control strategy in a similar situation, has achieved positive results, and receives preliminary approval from the relevant EPA Regional Office to use the provision.

Some strategies might be originally approved under this policy and later, after program evaluations have been completed, be able to be approved as an incentive program under the EIP. If an emission reduction strategy can meet the EIP requirements, a State should strive for the strategy to be approved as meeting the EIP rather than as a voluntary measure. EIP measures are not subject to a percentage limitation that applies to voluntary measures.

8. How do the different parts of this policy apply?

Some emission or pollutant reduction programs may need flexibility in order to meet the quantification requirement, while other programs may need flexibility to meet the enforceability requirement. Some programs may need flexibility to meet both the quantification and the enforceability requirements.

A. Section B applies to both emerging and voluntary measures.

B. Section C applies only to emerging measures.

C. Section D applies only to voluntary measures.

If a program uses this policy to meet SIP approval requirements for both enforceability and quantification, it should comply with Sections B, C and D.

9. Who should be contacted about Federal approval of specific emerging and voluntary measures?

EPA wishes to encourage States to develop and adopt voluntary and emerging measures for meeting SIP requirements. To facilitate Federal approval of an emerging or voluntary measure States are encouraged to work with their EPA regional office during the development process.

In general States are expected to use the more traditional methods which may be available before attempting to develop voluntary or emerging measures, since it is easier to obtain federal approval for well established emission control measures.

10. Who should you contact if you have any questions on this policy?

If you have any questions, please contact Nancy Mayer of the Innovative Strategies and Economics Group of the Air Quality Strategies and Standards Division, USEPA at 919/541- 5390, or email mayer.nancy@epa.gov.

SECTION B: What sources, programs and authorities apply to all strategies under this policy?

11. What sources may be covered under these emission reduction strategies?

Emission reduction strategies receiving SIP approval using this policy on incorporating emerging and voluntary programs into a SIP may cover any non-mobile sources of a criteria pollutant or precursor to a criteria pollutant including:

A. Subject to the limitations described later in this policy, stationary sources or emission points within a stationary source including any building, structure, facility or installation which emits or may emit an applicable criteria air pollutant or precursor.

B. Area sources that are too small and/or too numerous to be *individually* included in a State's stationary source emissions inventory. This category could include facilities that directly emit applicable criteria pollutants or their precursors, products or services sold by wholesale or retail operations that may emit criteria pollutants or their precursors, and individual consumers who may use products or services which emit criteria pollutants or their precursors. (However for emissions reductions to be used for SIP requirements, the aggregate emissions from the source category, if not individual sources, must explicitly be in the applicable SIP inventory).

C. Certain stationary sources that indirectly affect ambient air concentrations of criteria pollutants, such as lighter colored road asphalt, reflective roofs, strategic tree planting or energy efficiency measures. Strategies that contain these sources are often referred as "heat island reduction" or "energy efficiency programs."

This policy does not apply to mobile emission sources, including on-road and non-road vehicles. Some nontraditional mobile source programs are covered by the Mobile Source Voluntary Measures Guidance dated October 27, 1997.

12. Can programs approved under this policy replace existing programs?

Measures approved under this policy cannot typically replace existing measures already required in an applicable permit or SIP. This "antibacksliding" provision is necessary to ensure that currently required and enforceable activities cannot be substituted for less certain or less enforceable strategies. The purpose of this policy is to encourage new control strategies for meeting CAA requirements.

13. What requirements apply for quantifying of emission reductions from emerging and voluntary strategies?

A measure submitted for approval under this program must not interfere with other requirements of the CAA and must be consistent with SIP attainment, maintenance, and RFP/ROP requirements and plans. However, in order to encourage emerging new programs with which EPA and the States do not have significant experience, but which are technically and scientifically sound, the Agency believes it is appropriate to allow quantification based on best available science or information where direct, empirically verifiable data are not available. See section 22 for more information on quantification of emerging measures.

For voluntary programs, this policy offers credit where such programs are not enforceable directly against the sources that emit the pollutants, provided other enforceable mechanisms exist as described below.

The CAA also requires that for a reduction to be included in a SIP, the emissions from that source or source category must be contained and accurately quantified in any applicable ROP, RFP, attainment, and maintenance inventories. Any sources or source categories not contained and accurately quantified in all applicable SIP inventories may not be used in a SIP for attainment, maintenance, or RFP/ROP purposes.

14. What is the authority for approving voluntary and emerging measures under the Clean Air Act?

The EPA has the authority to approve programs under this policy using the following sections of the CAA:

A. 110 and 172 regarding emission reductions needed to achieve attainment of the NAAQS;

B. 182 regarding economic incentive provisions; and

C. 175A regarding maintenance plans.

In light of the increasing incremental cost associated with stationary source emission reductions and the difficulty of identifying additional stationary sources of emission reduction, EPA believes that it needs to encourage innovative approaches to generating emission reductions. Consequently, EPA believes that it is appropriate and consistent with the Act to allow a percentage of the total emission reductions needed to satisfy ROP, RFP, attainment, and maintenance requirements to come from programs that may not fully meet the traditional requirements listed above.

The policy places clear responsibility on a State to ensure that the emission reductions necessary to meet applicable CAA requirements are achieved. This includes a commitment, under time frames as discussed below, to evaluate the effectiveness of each measure. In the event a measure does not achieve the projected emission or criteria pollutant reductions, the State needs to commit to quickly remedy any SIP shortfall by providing a schedule resulting in enforceable emission reductions from other sources or by showing that the emission reductions are not needed to achieve applicable attainment, maintenance, or RFP/ROP requirements. The State would make this "showing" or adopt the required enforceable emission reductions from other sources through a SIP revision.

15. What limitations apply to programs approved under this policy?

A. Percent limitation

The EPA believes that it is appropriate to presumptively limit the amount of emission reductions allowed for approval under this policy. Although EPA concludes that emerging measures are consistent with the statute because all emerging measures will be accompanied with an appropriate enforceable backstop commitment from the state as described in this policy, EPA believes it is appropriate to limit these measures to a small portion of the SIP given the untested nature of the control mechanisms. The presumptive limit is 6 percent of the total amount of emission reductions required for the ROP, RFP, attainment, or maintenance demonstration purposes. The limit applies to the total number of emission reductions that can be claimed from any combination of voluntary and/or emerging measures, including those measures that are both voluntary and emerging. The limit is presumptive in that EPA believes it may approve measures into a SIP in excess of the presumptive six percent where a clear and convincing justification is made by the State as to why a higher limit should apply in their case. Any request for a higher limit will be reviewed by EPA on a case-by-case basis. Any approval of emerging measures under this policy will be conducted through full notice-and-comment rulemaking in the context of a particular state SIP revision.

The six percentage reduction does not apply to an area's total emission inventory, but only to the increment that is necessary to achieve ROP, RFP, attainment, or maintenance. In order to determine this increment, one must subtract the "carrying capacity" (or level of emissions at which the NAAQS would be attained) from the projected attainment year inventory, reflecting the benefits of all currently adopted federal/state regulations. Here is an example

- Let's assume that an area's base year emissions level (e.g., in the year 1990 for the 1-hour ozone plans) is 1,200 tpd.
- Modeling shows that the area would attain the NAAQS if emissions were reduced to 400 tpd.
- The projected emissions level in the attainment year is 700 tpd, taking into account the benefits of regulations adopted before the plan is prepared, including the benefits of all federal mobile source regulations issued before the plan's adoption date.

- The increment necessary for attainment would be 300 tpd (700 - 400 tpd).
- EPA believes that consistent with the statute and policy concerns in this case, the State's attainment demonstration may include up to 18 tpd from emerging and voluntary measures that control stationary sources (6% of 300 tpd), in conjunction with an appropriate backstop commitment as described in this policy.

B. Episodic limitation

Emerging and voluntary measures can be continuous, seasonal (in effect only during the season in which an area experiences high pollutant concentrations) or, for certain actions, episodic (implemented during specific periods of high pollutant concentrations, varying by meteorological conditions).

Section 123 of the CAA limits the credit States can take for using dispersion techniques, which include episodic and supplemental controls on emissions from stationary sources that vary based on atmospheric or meteorological conditions. The EPA's regulations implement section 123 at 40 CFR sections 51.100, 51.118, and 51.119. One of the purposes of section 123 is to make sure stationary sources do not rely upon intermittent controls in order to avoid the application of feasible constant emission controls. In seeking SIP approval for measures under this policy, States would need to take care to avoid seeking SIP credit for episodic controls on stationary source emission activities that are feasibly regulated through continuously or seasonally applicable emission controls. The EPA would not grant credit to any stationary source episodic control measure that falls within the Agency's definitions of "dispersion technique" at 40 CFR 51.100(hh)(1)(ii) or "intermittent control system (ICS)" at 40 CFR 51.100(nn), except as allowed by EPA's rules.

The EPA believes that section 123 should not, however, restrict credit for non-stationary source episodic or supplemental emission reduction measures that apply to consumer actions or the use of consumer products or services, for which these controls may represent the only feasible type of control. For example, EPA has formally determined that the use of smoke management in agriculture and silviculture practices, and episodic curtailment of residential wood combustion, are not dispersion techniques limited by section 123. The use of dust suppressants at stationary sources are not dispersion techniques, since these measures are triggered by the rate of dust emissions rather than by varying atmospheric or meteorological conditions. Seasonal controls that are implemented at pre-determined periods of the year and that do not vary with atmospheric or meteorological conditions are not limited by section 123, even if they apply to stationary sources.

C. Limitations on uses

Under this policy EPA believes that a State can claim emission reductions in its SIP from emerging and voluntary programs for purposes of demonstrating attainment or maintenance of the NAAQS, RFP, or ROP. However, if the evaluation period for a voluntary or emerging measure extends beyond the applicable RFP, ROP, or attainment year, a State cannot rely on such voluntary or emerging measures for achieving emission reductions for RFP, ROP, or attainment/maintenance.

Voluntary and emerging measures cannot be used by a source to meet any other emission reduction requirement such as:

(1) Reasonable Available Contol Technology (RACT),

(2) Best Available Control Technology (BACT),

(3) Best Available Retrofit Technology (BART),

(4) Lowest Achievable Emission Rate (LAER),

(5) New Source Performance Standard (NSPS),

(6) National Emissions Standards for Hazardous Air Pollutants (NESHAPS), or

(7) NSR offsets or emission reductions for any emissions trading program.

16. How does a State get SIP approval under this policy?

A State would submit a SIP to EPA which:

A. Identifies and describes the measure;

B. Contains projections of emission or pollutant 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 (See section 23);

C. Enforceably commits the State to implementation of those parts of the measure for which the State or local government is responsible;

D. Enforceably commits the State 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;

E. Enforceably commits the State to remedy any SIP credit shortfall in a timely manner, as described below, if the program does not achieve projected emission reductions;

F. Meets all other requirements for SIP revisions under sections 110 and 172 of the CAA; and

G. Undergoes public notice and comment as any other SIP revision.

See attachment 1 for a detailed description of the SIP approval process.

17. How should a State evaluate the emission reduction effectiveness of its programs?

Program evaluation is the process of retrospectively assessing the performance of the program. The primary purpose of program evaluation is to evaluate the amount of reductions actually realized through the program and to serve as a basis for adjustments to the program if the original estimates of emission reductions are not being achieved. In the SIP submittal, the State needs to develop and include specific program evaluation procedures for the measure. The State should carefully consider what approach can provide the most effective means to accurately evaluate the measure. The approach will depend greatly on what type of program is being evaluated. See sections C and D for discussions of possible evaluation programs.

18. How often should a State evaluate its program?

Evaluation timing is discussed separately for emerging measures (section C) and voluntary measures (section D).

19. What should a State do if the evaluation reveals a shortfall between predicted and actual emissions reductions?

The SIP submittal needs to include an enforceable commitment that if the State learns through program evaluations (or by other means) of a shortfall (i.e., projected pollutant reductions were not or will not be achieved), the State will quickly correct the problem by providing enforceable emission reductions from other sources or by showing that the emission reductions are not needed for attainment, maintenance, or RFP/ROP. The State would make this "showing" or adopt the required enforceable emission reductions from other sources through a SIP revision.

Generally, if State rulemaking is not required, any shortfall should be corrected as soon as possible, and no later than one year after the program evaluation is completed (or when a State learns of the shortfall). If State rulemaking is required, the State should proceed as expeditiously as possible under the required State process, but the State should correct the shortfall within two years of when the shortfall is discovered. However, if the emission reductions from a measure are necessary to show attainment or ROP, the timeframe to correct a shortfall cannot exceed the statutory attainment or ROP milestone date for the nonattainment area (for example, in the one hour ozone program, 2005 or 2007 for severe areas and 2010 for an extreme area). Failure to timely address this shortfall could lead to a finding of nonimplementation under section 179(a)(4) of the CAA. In such a case, sanctions may be imposed under section 179(b) of the CAA.

20. How long does this policy last?

The EPA plans to evaluate the effect of this policy after five years to determine if it is meeting its goals. The policies set forth in this document are intended solely as guidance, do not represent final agency action, and cannot be relied upon to create any rights enforceable by any party.

SECTION C: What special guidance applies to emerging measures?

21. What is an emerging measure?

An emerging measure is a new emission reduction or pollutant reduction measure which is more difficult to accurately quantify than traditional SIP emission reduction measures. The difficulty in quantifying the emission or pollutant reductions may be due to scientific, technological, or informational uncertainty. The ability to quantify reductions from emerging measures may require development of a protocol based on assumptions and/or modeling to estimate the reduction impacts of the emerging measure.

22. Why is EPA allowing flexibility for the quantification requirement?

Some areas want to try new types of emission control or pollution reduction strategies. Some of these new strategies have a substantial chance to be as effective and possibly more effective than current measures in reducing criteria pollutant levels. The EPA supports and wishes to promote the testing of new emission and pollutant control strategies. This policy provides a mechanism that allows States to receive provisional emission reduction credit in their SIP for new emission control and pollutant reduction strategies that have the potential to generate additional emission reductions or air quality benefits. Provisionary emission reductions or pollutant reduction strategies can become permanent when post-implementation evaluations validate the amount of emission reductions achieved.

"Provisionary" in this case means the State may use particular emission reductions for RFP or other purposes before the quantification procedure has been fully validated. Even though these emission reductions can be used to fulfill CAA emission reduction requirements, if post-implementation evaluations do not show that all the projected emissions reductions have occurred, the State must reconcile the difference between the projected and actual emissions reductions.

In order to encourage emerging new programs with which EPA and the States do not have significant experience, but which are technically and scientifically sound, the Agency believes it is appropriate to allow quantification based on best available science or information where direct, empirically verified data are not available. In these circumstances, the State should quantify the pollution reduction based on the best knowledge currently available for the measure being considered. The State should develop a protocol based on a carefully considered determination of the activities that it is committing to undertake and the activities' projected impact on pollution. 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 pollution reduction.

23. What may cause uncertainty in the quantification of the emission reduction?

Uncertainty may be caused by questions regarding the effectiveness of the measure in achieving emission reductions or difficulty in measuring the emission or pollutant reduction impact on a nonattainment area.

This uncertainty may be due in some cases to the application of science or technology which may not yet have received full acceptance in the environmental community. To ensure a high probability of success for these new strategies, all programs must apply the best available science in developing, justifying and evaluating their programs. Best available science implies that the project or program be creditable based on principles of accepted science and that it be supported by peer-reviewed articles published in scientific or technical journals.

24. What are examples of emerging measures under development?

A few examples of emerging measures that are currently being considered for SIP use include:

A. Activities that indirectly reduce emissions, such as measures that promote more efficient production or use of energy or that promote renewable resources. Some examples include:

(1) Use of renewable energy sources which may have no emissions (solar or wind power) or low emissions (biomass)

(2) Combined heat and power generation

(3) Education or incentive programs to reduce consumer energy use

These programs pose a unique challenge because it is difficult to convert energy savings into emission reductions impacting a particular area. For programs that affect energy usage, emission reductions may result from:

(1) Reduced energy demand below existing levels assumed in the relevant attainment and maintenance plans if the plans do not assume any growth in energy demand, or

(2) Reduced future growth in demand, as long as growth in demand is *explicitly* contained in all relevant attainment, RFP, ROP, and maintenance plans and inventories.

B. Activities that improve air quality by means other than emission reductions, such as heat

island measures that reduce criteria pollutant concentrations by lowering ambient temperatures.

25. What special limitations apply to emerging measures?

States may not use emerging emission control strategies to meet the following technology based standards:

RACT
LAER
BACT
MACT
BART
NESHAP

RACT rules must be adopted and implemented even if a State submits a emerging programunder this policy. Nothing in this policy relieves a State's obligation to adopt and implement RACT rules.

Emission reductions realized from emerging measures may not be used for NSR offsets or other trading purposes.

Only *emission* reduction programs (e.g., programs to reduce ozone precursors), may be used for RFP/ROP purposes. *Ambient concentration* reduction strategies can be used for maintenance and attainment strategy requirements.

26. How should a SIP authority calculate the emissions reductions from an emerging measure?

This policy can potentially apply to a wide variety of types of stationary sources. While a State would need to carefully develop an emissions quantification protocol that best fits each type of emissions source, the following generic protocol presents the basic components that should be accounted for in any emission reduction quantification approach.

A. Identify the type of source or facility that will be involved in the emission reduction activity;

B. Determine whether the emissions from these sources are already included in and accurately quantified in the emissions inventory in the SIP. If they are not already in the SIP inventory, or are not accurately quantified, no credit could be given for these sources unless the baseline is revised to include such emissions. If they are in the SIP inventory, determine the baseline emissions from these sources;

C. Fully explain the emission reduction technique, provide a detailed estimate of the amount and type of emissions (e.g. volatile organic compounds (VOCs), nitrogen oxides (NO_X), particular matter (PM), etc.) that will be reduced. Provide a clear methodology for how the emissions or pollutant reduction estimates were derived;

D. Identify the number of sources that will participate in the measure and provide documentation as to how that number was derived and why the SIP authority believes it to be accurate;

E. If there is significant uncertainty in the amount of emission reductions that will be generated by the emerging measure due to concerns regarding best available science and engineering information or uncertain implementation assumptions, the SIP authority should apply a discount factor to the amount of estimated emission reductions to reflect the uncertainty in the estimate. The assumed discount is 20 percent; however, a larger or smaller adjustment factor may also be appropriate. The greater the uncertainty, the greater the adjustment factor.

-and -

F. If the emission sources are generally of the same size and emission rate, multiply the number of sources participating by the amount of emission reduction estimated per source to determine the total emission reduction to be applied to the SIP;

-or-

G. If the emission reduction can differ substantially from source to source, add the estimated emission reduction from each participating source to derive a total emission reduction and apply it to the SIP.

Certain types of emerging programs may rely on measures that do not directly reduce emissions of pollutants. They may result in less formation of pollution (e.g., heat island reduction measures reduce temperature which can result in less ozone formation) or directly reduce pollution in the ambient air (e.g., tree protection and planting programs may reduce ozone through several mechanisms including deposition). Estimating pollutant reductions for programs of this type will generally rely on ambient air quality modeling based on the application of the best available scientific and engineering information.

In cases such as these, however, reductions will still be related to the level of activity involved. In general, programs of this type will need to promote a level of activity over an area necessary to create an impact in the modeling and actual results. Small programs on an isolated neighborhood basis are not likely to be sufficient to demonstrate a heat island impact and, on their own, would therefore likely not generate creditable pollutant reductions.

Some emerging measures may also take a substantial period of time to fully implement. Tree planting and protection programs, for instance, may take decades to fully realize potentially beneficial impacts. Estimates of pollutant reductions should reflect the schedule on which the measures are being put in place and growth rates over time as well as loss of trees due to disease or removal. Because of the length of time required for these programs to mature, some of these strategies may be more effective as maintenance strategies rather than as attainment strategies.

27. How should a State evaluate the emission reduction effectiveness of these programs?

Program evaluation is the process of retrospectively assessing the performance of the emerging measure. The primary purpose of program evaluation is to quantify the amount of actual reductions realized through the program and to serve as a basis for adjustments to the amount of emission reductions available if the original estimates of emission reductions are not being achieved. In the SIP submittal, the State should develop and include specific program evaluation procedures for the emerging measure.

The State should carefully consider which approach can provide the most effective means to accurately evaluate the emerging measure. The approach will depend greatly on what type of measure is being evaluated. The actual effect of some measures on pollutant levels may be impossible to accurately determine by empirical measurement and will depend instead on updated modeling or scientific calculations. In that case, the state of the science behind the original emission reduction assumptions should be carefully reviewed and updated to reflect any new information that may now be available. In all cases, there should be some activity measure that can be evaluated to ensure that the emerging measure is being implemented. For example, heat island reduction (HIR) measures require actions to increase the reflectivity of roofs, roads, and pavement. Although these are not direct measures of ozone reduction, they are necessary actions to implement a heat island reduction strategy and can be directly measured and compared to the original assumptions in the HIR strategy and modeling. At the same time, the HIR modeling should be updated to reflect any better science or new information available regarding the efficacy of HIR as an ozone reduction strategy.

See section 5.3 of the EIP for additional information on what is needed in a program evaluation.

28. What is the timing of evaluation and reconciliation for these programs?

To be consistent with the section on voluntary measures, the State should enforceably commit to complete an initial evaluation of the effectiveness of each measure not later than 18 months after putting the measure in place. Where possible, this evaluation should be done sooner. However, if a State can make a showing that it cannot adequately evaluate the measure within 18 months, it may request additional time to complete the evaluation. This extra time differs from the timeframe allowed in section D on voluntary measures.

The extra time may be necessary in cases where the measure may take a significant amount of

time to fully implement, where direct measurement is not possible, or where science has not progressed sufficiently in 18 months to provide a more reliable estimate of the effectiveness of the measure. However, the State must show that there has been a good-faith effort to improve the quantification procedures for a particular emission control strategy and that real progress has been made in quantifying the emission reductions. Under no circumstance can the additional time granted for evaluation allow the evaluation to occur less than 2 years before the RFP, ROP or attainment date if the emission reductions are being used for these purposes. If the evaluation extends beyond these timeframes, the measure should be used solely for maintenance purposes.

If any emission reductions cannot be validated, then the State must provide other reductions to make up the difference between the validated emission reductions and the projected emission reductions. If the State becomes aware that the emerging measure is not achieving or will not achieve the predicted emission reductions, or the science behind the measure is questionable or uncertain the State should notify EPA and correct the SIP at that time as discussed in section 19.

Once a State has determined the initial effectiveness of its emerging measure, it may reevaluate its emerging measures at the same time as other SIP measures. This evaluation should generally occur every three years, unless no requirement to reevaluate SIP measures applies to the particular plan.

29. Can more than one State adopt the same emerging measure?

The EPA believes it is appropriate to allow multiple States to adopt similar programs so long as they all meet the criteria outlined in this guidance, including a determination of surplus which can vary from state to state. If a particular strategy has been shown to provide verified emission reductions and other States are interested in adopting similar strategies, States should confirm that the emission reductions are surplus, and that the emissions impact will be the same for their State (due to similarities in topography, meteorology, magnitude of the project, and any other relevant factors). Under these circumstances, EPA believes a State may, through future rulemaking, adopt the emission reduction strategy, obtain emission reduction credit for their SIP and meet the requirements of this policy. Depending on the specific emerging measure, multiple States may have to demonstrate the viability of a particular measure to achieve reductions before a State may adopt the measure as having met the requirements of this policy.

In some situations, when an emerging strategy has been verified as a predictable emission reduction strategy which meets the quantification criteria in the EIP, that strategy may be approved into the SIP as meeting the EIP. If the strategy is approved as meeting the EIP without using this policy, then the strategy would not be subject to the presumptive six percent limit that applies to the total emissions reductions that can be credited under emerging and voluntary programs.

SECTION D: What special requirements apply to voluntary programs?

30. What is a voluntary measure?

For the purpose of this policy, a voluntary measure is an action by a source that will reduce emissions of a criteria pollutant or a precursor to a criteria pollutant that the State could claim as an emission reduction in its SIP for purposes of demonstrating attainment or maintenance of the NAAQS, RFP, or ROP, but that is not directly enforceable against the source. Voluntary measures cannot be used by the source to meet any other emission reduction requirement (for example, offsets for NSR or credits for trading under an economic incentive program). Voluntary measures also cannot be used to meet other emission reduction requirement such as RACT, BACT, BART, LAER, NSPS or NESHAP limits. In effect, the source accrues neither liability nor direct benefit from the action. Voluntary emission reductions can only be credited to the State under this policy for demonstrations of attainment, maintenance, or RFP/ROP.

Even though an individual source would not receive direct benefit from participating in a voluntary measures program, there are incentives for sources to participate. These include a desire on the source's part to contribute to improved air quality, possible recognition by the State or others of the source's contribution to air quality improvement, and the opportunity to participate in a non-regulatory program for a small group of sources that may achieve emission reductions in a more cost-effective and less resource-intensive manner.

31. What are examples of types of stationary source voluntary measures?

Some examples of voluntary measures could include:

A. Retail operations agreeing not to sell high emitting VOC products during the ozone season.

B. Consumer-oriented programs to reduce the use of high emitting paints or other consumer products during the ozone season, or no paint days during periods of high predicted ozone concentrations (Ozone Action Days).

C. Deferring or reducing both consumer and industry maintenance involving high emitting chemicals.

D. Where it is not already required, improved operating practices or use of pollution prevention approaches to reduce emissions, such as covering containers, reducing waste from operations, or using water-based systems for cleaning operations at stationary sources.

E. Encouraging reductions in emissions from emissions points not currently required to be controlled (e.g., by applying new or innovative emission reduction approaches such as pollution prevention or process changes).

F. Process changes to reduce emissions during the ozone season.

G. Voluntary wood stove changeout programs, or voluntary no burn days involving the use of wood stoves or agricultural burning to reduce $PM_{2.5}$ emissions.

H. Programs to reduce electricity usage.

I.. Heat island programs to encourage activities that will reduce center-city temperatures during the summer, e.g. replacing residential roofs with Energy Star-labeled roof products or planting shade trees.

J. Emission reductions resulting from programs designed to educate consumers or sources about the effects of their actions on the environment. This could also include emission reductions resulting from mentoring programs where firms that are more experienced in air pollution control activities could advise less-experienced firms on ways to reduce air pollution.

K. Process or technology changes that result in substantially reduced emissions beyond those mandated in a SIP or mandated by such control programs such as RACT, BACT, BART, LAER, NSPS or NESHAPs.

32. How does a voluntary measure meet the enforceable requirement?

While we have already stated that voluntary measures are not enforceable against the source, the State would be responsible for assuring that the emission reductions credited in the SIP occur. The State would make an enforceable commitment to monitor, assess and report on the emission reductions resulting from the voluntary measures and to remedy any shortfalls from forecasted emission reductions in a timely manner as discussed below.

33. What special limitations apply to voluntary measures?

It is not appropriate for certain sources to participate in the voluntary measures policy. Some nonattainment problems (whether area-wide or part of the larger nonattainment area) are strongly affected by one source or a small group of sources. This is usually the case in nonattainment areas for lead and sulfur dioxide (SO2), and for certain particulate matter (PM) and carbon monoxide (CO) nonattainment areas as well. It should not be the case for ozone, where a mix of major sources, area sources, mobile sources, and long range transport all contribute to the problem. Sources which strongly affect a nonattainment problem should not be covered by a voluntary measures program. Emission reductions in these cases should be directly enforceable against the specific sources causing the problem.

Voluntary measures may not be used for NSR offset or emissions trading purposes.

34. How should a State evaluate a Voluntary Measures program?

Program evaluation is the process of retrospectively assessing the performance of the voluntary program. The primary purpose of program evaluation is to quantify the amount of actual reductions realized through the program and to serve as a basis for adjustments to the program if the original estimates of emission reduction are not being achieved. In the SIP submittal, the State must develop and include specific program evaluation procedures for the voluntary measure.

The State should carefully consider what approach can provide the most effective means to accurately evaluate the voluntary measure. The approach will depend greatly on what type of measure is being evaluated. For example, to evaluate a low VOC retail paint sales program, it may be best to use inventory records to evaluate the program. For an ozone action day approach to discourage the use of VOC based consumer products (paints, hair spray, etc.), it may be appropriate to use a consumer survey. Statistical sampling may be an appropriate method for assessing program effectiveness, particularly for those measures utilized in the consumer/retail area.

35. How often should a State evaluate its program?

The State should enforceably commit to complete an initial evaluation of the effectiveness of each measure no later than 18 months after putting the measure in place (one year to run the measure and six months to analyze the data to determine the measure's effectiveness). This evaluation should be done sooner, where possible. For instance, for a seasonal voluntary program that may only run for six months, the timeframe may be six months to run the program and 6 months to determine its effectiveness.

Once a State has determined the initial effectiveness of its voluntary measure, it may reevaluate its voluntary measure programs at the same time as other SIP measures, generally every three years, unless no requirement to reevaluate SIP measures applies to the particular plan, in which case the State would need to reevaluate its voluntary measure programs at least every three years. If, before the required initial evaluation or the scheduled reevaluations, the State becomes aware that the voluntary measure program is not achieving or will not achieve the predicted emission reductions, the State should notify EPA and correct the SIP as discussed in the next section.

36. What should a State do if the evaluation reveals a shortfall between predicted and actual emissions reductions?

The SIP submittal needs to include an enforceable commitment that if the State learns through program evaluations (or by other means) of a shortfall (i.e., projected emission reductions were not or will not be achieved), the State will correct the problem by providing enforceable emission reductions

from other sources or showing that the emission reductions are not needed for attainment, maintenance, or RFP/ROP. The State would make this "showing" or adopt the required enforceable emission reductions from other sources through a SIP revision. Generally, if State rulemaking is not required, any shortfall should be corrected as soon as possible, and no longer than one year after the program evaluation is completed (or when a State learns of the shortfall). If State rulemaking is required, the State should proceed as expeditiously as possible under the required State process. It is the State's responsibility to correct the shortfall within two calendar years of when the shortfall is first discovered or noticed. However, if the emission reductions from a measure are necessary to show attainment or ROP, the timeframe to correct a shortfall cannot exceed the statutory attainment or ROP milestone date for the nonattainment area (for example, in the one hour ozone program, 2005 or 2007 for severe areas and 2010 for the extreme areas). Failure to address this shortfall on a timely basis could lead to a finding of nonimplementation under section 179(a)(4) of the CAA. In such a case, sanctions may be imposed under section 179(b) of the CAA.

Attachment 1

SIP COMPLETENESS AND APPROVAL PROCESS

Submittal Requirements

A State must submit a SIP to EPA which identifies and describes the program and:

- contains projections of emission reductions attributable to the program, along with relevant technical support documentation;
- commits to monitor, evaluate, and report the resulting emissions effect of the measure;
- commits to remedy in a timely manner any SIP credit shortfall if the measure does not achieve projected emission reductions;
- meets other requirements for SIPs such as:
  -- a showing that the State has legal authority. For example, the evidence may be a letter from the State's Attorney General's office providing an analysis of the legal authority to adopt and implement the State program under State law.
  -- the date of adoption, as well as the effective date of the program, if this information is not already included in the program.
  -- evidence that the program is consistent with the provisions of CAA Section 110(a)(2)(E).
  -- include a copy of the measure, indicating the changes made to the existing approved SIP where applicable. The State program and other relevant rules must be signed, stamped, and dated by the appropriate State official indicating that it is fully implementable by the State. The effective date of the program must, whenever possible, be indicated in the document.
- contains evidence that:
  -- the State adopted the measure/program into the appropriate State mechanism (e.g., your applicable State rules) and the date adopted.
  -- the State followed all the procedural requirements in the State's laws and constitution in conducting and completing the measure/program.
  -- the State gave public notice of the proposed changes consistent with procedures approved by EPA, including the date of publication of this notice.
  -- the State held public hearings consistent with the information in the public notice and the State's laws and constitution.
  --the State established explicit procedures for including the public in the program implementation and evaluation phases, to address any environmental justice issues.

--the State has sufficient funding and resources to collect data and perform a program evaluation to determine the actual emission reductions realized by a measure.

General Process Timeline

The general process timeline for getting your measure approved consists of the following steps:

- Develop the rule that contains the regulatory provisions of the program in consultation with appropriate stakeholders - community (including communities of concern), industry, academia, environmentalists and regulators. For programs that do not require regulations (e.g., education or incentive programs to reduce consumer power demands), then the appropriate authority must adopt an enforceable policy (or equivalent) to ensure the program is implemented.
- Prepare documentation to support the rule.
- Submit the rule and supporting documentation to the applicable EPA Regional Office.
- The EPA Regional Office reviews the SIP submittal for completeness and decides whether the rule submittal is complete.
- If the EPA Regional Office considers the SIP submittal to be incomplete, the EPA Regional Office will return the SIP submittal. At this point, the State may revise the rule and/or documentation and resubmit the package.
- The EPA proposes the rule as a SIP revision in the Federal Register and solicits comments on the rule from the public. Based on the public's comments, EPA may require that the State make changes in the rule, prior to final approval.
- The EPA publishes the final approval of the (original or modified) rule in the Federal Register.

Even though a Region may choose to use the direct final processing procedure for noncontroversial actions, it is very unlikely that any action using this policy will be noncontroversial.