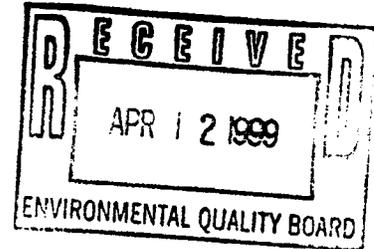


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April 9, 1999

Environmental Quality Board
Attn: Sharon Freeman
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Dear Sharon:

Enclosed please find the document, "Guidance on Establishing an Energy Efficiency and Renewable Energy (EE/RE) Set-Aside in the NOx Budget Trading Program," which supplements the testimony of Mr. John Hanger on April 8, 1999 in Conshohocken.

Best regards,

A handwritten signature in cursive script that reads "Michelle".

Michelle L. Jones
Executive Assistant

Enclosure



Guidance on Establishing an Energy Efficiency and Renewable Energy (EE/RE) Set-Aside in the NO_x Budget Trading Program

Office of Atmospheric Programs
Office of Air and Radiation
U.S. Environmental Protection Agency
Washington, D.C. 20460

March 1999

ACKNOWLEDGMENTS

The Guidance on Establishing an Energy Efficiency and Renewable Energy Set-Aside in the NO_x Budget Trading Program is the work product of an EPA/State workgroup that comprises EPA representatives from the Office of Air and Radiation, EPA Regional Air Offices, and the air and energy officials from several states. This group worked for over a year researching design elements and developing options for promoting energy efficiency and renewable energy actions in the context of the NO_x Budget Trading Program. The workgroup also tested the workability of the systems by applying the approaches outlined in the guidance to real projects. This guidance was reviewed by the workgroup and other EPA offices. This document was prepared with the assistance of Steve Fine, Ben Feldman, Nathan Collamer and Kofi Berko of ICF Resources Incorporated of Fairfax, Virginia. The work was conducted under EPA contract 68-W5-0068 for EPA Project Officer Anna Garcia.

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PREFACE

This guidance document enables states to include the air quality benefits of voluntary energy efficiency and renewable energy actions as an integral part of their air quality attainment strategies. It is a first step in demonstrating how accelerated adoption of energy efficiency and renewable energy in residential, commercial and industrial sectors can reduce emissions of criteria pollutants such as nitrogen oxides or "NO_x," and how those emissions reductions can be credited in state air quality attainment mechanisms.

In September 1998 EPA promulgated a rule to address regional transport of ground-level ozone, which is the main component of smog. Ground-level ozone is transported by the wind, and tends to be a problem over broad regional areas, particularly in the eastern United States. Emissions of NO_x react in the atmosphere to form compounds that contribute to the formation of ozone. These compounds, as well as ozone itself, can travel hundreds of miles across state boundaries to affect public health in areas far from the source of the emissions. Thus, cities with "clean" air, those that meet or attain the national air quality standards for ozone, may be contributing to a downwind city's ozone problem because of transport.

The Clean Air Act requires that a state implementation plan (SIP) contain provisions to prevent a state's facilities or sources from contributing significantly to air pollution problems "downwind," specifically in those areas that fail to meet the national air quality standards for ozone. The final rule, commonly known as the NO_x SIP Call, requires 22 states and the District of Columbia to submit SIPs that address the regional transport of ground-level ozone through reductions in NO_x. By reducing emissions of NO_x, the actions directed by these SIPs will decrease the transport of ozone across state boundaries in the eastern half of the United States. The states that are subject to this action are: Alabama, Connecticut, District of Columbia, Delaware, Georgia, Illinois, Indiana, Kentucky, Massachusetts, Maryland, Michigan, Missouri, North Carolina, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, Wisconsin, and West Virginia. The final rule includes a model NO_x Budget Trading Program that will allow states to achieve over 90% of the required emissions reductions in a highly cost-effective way. The rule requires that states submit the SIP by September 1999, and that reduction measures be put in place by May 1, 2003.

The NO_x Budget Trading Program is one example of how EPA is working towards giving states more tools and greater flexibility in meeting their air quality attainment goals. Another is this effort by EPA to include the emissions reductions achieved through voluntary actions, such as energy efficiency and renewable energy projects, in state implementation plans, as put forward in this guidance document. This important new effort will not only provide states with increased flexibility for meeting the National Ambient Air Quality Standards, but will help sources reduce NO_x compliance costs and their emissions of greenhouse gases.

Analyses show that this pollution prevention approach can reduce the costs of compliance with air standards and improve local economies through higher productivity and the creation of more jobs while increasing the gross state product. A major study by the US Department of Energy also shows that accelerated adoption of the energy efficiency measures likely to be included in this effort is an essential, economically sound means to reduce emissions of greenhouse gases while developing the US economy. The pathbreaking effort EPA has undertaken can be an integral part of a national strategy to protect our global

environment while providing new opportunities for local, state and national economic growth and productivity.

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LIST OF ACRONYMS

BAU	Business as Usual
Btu	British Thermal Unit
CABO	Council of American Building Officials
CCAP	Climate Change Action Plan
CEM	Continuous Emissions Monitors
CHP	Combined Heat and Power
CO ₂	Carbon Dioxide
CVP	Conservation Verification Protocol
DOE	Department of Energy
DSM	Demand Side Management
EE/RE	Energy Efficiency and Renewables
EGU	Electricity Generating Unit
EPA	Environmental Protection Agency
ESCO	Energy Service Companies
ESP	Energy Service Provider
FEMP	Federal Energy Management Program
IPM	Integrated Planning Model
kWh	Kilowatt Hour
M&V	Measurement and Verification
MEC	Model Energy Code
mmBtu	Million Btu
NAAQS	National Ambient Air Quality Standards
NATS	NOx Account Tracking System
NOx	Nitrous Oxides
NSR	New Source Review
PUC	Public Utility Commission
SBC	System Benefits Charge
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide

EXECUTIVE SUMMARY

States have a great opportunity to take advantage of the economic and environmental benefits of energy efficiency and renewable energy in developing a NO_x transport mitigation strategy. By including an energy efficiency and renewable energy set-aside in a state's NO_x Budget Trading Program, states can prevent growth in NO_x emissions, avoid building additional generation capacity, save energy and consumer dollars, and put additional jobs and money into their local economies. This guidance assists states in accelerating the adoption of energy efficiency and renewable energy technologies which save money and improve local economies. Such a set-aside may be a key element of a low cost compliance strategy for a state participating in the NO_x Budget Trading Program.

This guidance is the first of three documents that EPA is issuing to assist states in designing and implementing a set-aside of NO_x allowances from within their allocated budgets in the NO_x Budget Trading Program. This set-aside system represents a major opportunity for electricity end users such as energy service companies (ESCOs), commercial businesses and building owners/operators, equipment manufacturers, and federal, state and local government agencies to earn emissions allowances for investments in energy efficiency and renewable energy that prevent NO_x emissions. This first guidance document focuses on the elements for a state to consider in deciding whether or not to do a set-aside, and how many allowances should be included in one. These are the critical elements states must determine in order to include the appropriate information on the set-aside in their September 1999 SIP submissions. The second document will be released in Spring 1999, and address design elements for the administration and quantification of awards. The third guidance will outline measurement and verification requirements, and is planned for release in late 1999 or early 2000. This executive summary provides an overview of the first set-aside guidance document.

Purpose and Benefits of an Energy Efficiency and Renewables Set-Aside

This document contains technical guidance for the establishment of an energy efficiency and renewable energy set-aside as part of a SIP Call state's NO_x Budget Trading Program. It is not meant to be interpreted as requiring or mandating any of the provisions discussed. Its purpose is to provide information and recommendations that states may use in the design of an optional program that will reward energy efficiency and renewable energy actions in a way that supports and enhances the NO_x Budget Trading Program. States have the flexibility to adopt the recommendations provided in the design of an optional set-aside, to design a set-aside program using design elements different from those recommended, or to decline the option of including a set-aside in the NO_x Budget Trading Program.

EPA is providing states with guidance because a well-designed set-aside program may lower the compliance costs of the NO_x Budget Trading Program, and because additional environmental benefits will accrue to the state. The set-aside would reward investors in energy efficiency and renewable projects; projects that provide broad societal benefits, both economic and environmental, that are not generally rewarded in the revenue streams derived by investors in these projects. The benefits from this set-aside include both the net dollar savings that the energy efficiency and renewable energy projects bring to electricity consumers, and lower compliance costs for electricity generators. In addition, state and local economies

benefit in terms of increased numbers of jobs, higher productivity, and higher Gross State Product (GSP). Finally, the environment benefits because energy efficiency and renewable energy prevent the emission of a number of important pollutants, including CO₂, particulate matter, lead, mercury and others. Energy efficiency and renewable energy can play a significant role as part of a comprehensive air quality improvement strategy.

Designing an Effective Energy Efficiency & Renewables Set-Aside

EPA's guidance documents address each of the key questions for states to consider in designing and implementing an energy efficiency and renewable energy set-aside. This first guidance document focuses on five key questions that help states determine an appropriate pool size for an energy efficiency and renewable energy set-aside.

1. What types of projects are eligible for awards, and who would receive allowances?

To determine the size of a set-aside pool, EPA believes that it is critical to first determine who the players in the set-aside are and what types of energy efficiency and renewable energy projects are qualified to receive set-aside allowances. The composition of the target audience and the energy savings potential of the universe of eligible projects will shape the decision about the allowances needed. The guidance provides states with information on the likely target audience and sectors, an estimate of the universe of eligible projects, and a set of criteria for evaluating projects.

2. How can pool size be used to help a state focus allowance awards on new projects?

One way for states to focus allowance awards on "new" projects, rather than business-as-usual (BAU) efficiency and renewable actions, is through the size of the set-aside. In the guidance EPA explains that providing a large enough number of allowances in the set-aside to accommodate both "new" and BAU projects can encourage actions that would not otherwise occur without the set-aside.

3. How should the pool be sized to award credit for actions implemented before 2003?

If a state plans to award early actions, it may want to set aside a larger pool of allowances to accommodate the savings achieved from several years' worth of eligible projects. The guidance outlines a mechanism for including early credit that works within the context of the NO_x Budget Trading Program process.

4. How does pool size depend on the number of control periods the award will be given for (length of award)?

Since the energy savings/displacements that occur through energy efficiency and renewable energy projects are long lived, it is appropriate to provide a stream of allowances, much like the stream of dividends an investor earns, for several or all of the years a project is in place and producing results. The guidance explains how the size of the pool may therefore factor into the decision about the length of award, since a larger pool may provide greater

liquidity. A larger pool allows room for a multi-year stream of awards while still allowing room in the pool for new projects to come in for allowances.

5. How can states adjust their set-aside pools to handle over and under subscription?

Once an initial pool size has been set, the state will also want a strategy for making adjustments to the pool, if it is found to be too large or too small. The guidance provides methods for handling allowance shortages or overages that maintain the usefulness of allowances within a given ozone control period.

The second guidance document will address another five key questions that will help states with the administration of the set-aside and the quantification of allowance awards:

- 6. when the allowance awards will be made (timing of awards);
- 7. how and when to apply for awards, and what is needed in the application;
- 8. how to measure and verify results in terms of energy saved or displaced;
- 9. how to translate project results (energy saved or displaced) into emissions; and
- 10. how to direct set-aside allowance awards toward new projects which result in additional energy savings or displacements beyond business as usual energy efficiency or renewable gains (providing real reductions).

While EPA presents its recommendations for each of the design elements, the guidance also provides states with ample flexibility in designing their programs.

EPA's Design Recommendations

EPA has recommended an approach for each design issue. The following table summarizes a set-aside program design based on EPA's recommended approach:

Program Design Element	EPA's Recommendation
<i>Size of Set-Aside</i>	5 -15 percent
<i>Eligibility of Entities, Projects</i>	End users, meets the 7 project criteria
<i>Focusing on "New" Projects</i>	Pool large enough for "new" & BAU projects
<i>Credit for Early Actions</i>	Yes
<i>Length of Award</i>	3 years
<i>Over-Subscription</i>	First come, first served
<i>Under-Subscription</i>	Pro-rata reallocation

Size of set-aside

EPA recommends that a set-aside pool of allowances ranging between 5 and 15 percent of the a state's total NOx Trading Program Budget for electricity generation be

created. An energy efficiency and renewable energy set-aside in this size range will provide for an allowance pool set at an amount large enough to maximize the opportunities to promote energy efficiency and renewables projects. States have a great deal of flexibility in setting the size of their set-aside allowance pools, however. Based on a state's decisions about key design issues, a state may prefer the higher or lower end of this range, or another pool size that is outside of this range.

Eligibility of entities & projects

To determine what organizations and which projects will be eligible to receive allowance awards, EPA recommends that energy efficiency and renewable energy set-aside awards be made, as close as possible, to the end user who invests in and/or implements the project. The list of potentially eligible applicants for the set-aside includes any individual or organization that uses electricity and can initiate, finance, or carry out projects that reduce or displace electricity generation. The focus of this guidance is to make set-aside allowances available to end users of all types, including aggregators, vendors and others.

As part of the determination as to which projects receive set-aside allowances, EPA generally recommends that energy efficiency or renewables projects that provide a direct benefit to entities in the form of "freed up" or "extra" allowances from an existing allocation in the NOx Budget Trading Program not be eligible to receive allowances from this set-aside. Therefore it is recommended that projects implemented by core sources who receive an allocation of allowances in the NOx Budget Trading Program not be eligible to receive allowances from this set-aside for actions which will lower their need for and/or free up NOx allowances from their existing allocations.

The guidance includes seven additional criteria which EPA recommends states apply in evaluating projects for awards. Some of the criteria are necessary in the context of the NOx Budget Trading Program. EPA believes that to be eligible for allowances, a project should:

- reduce/displace electricity load from core source electricity generation units (EGUs) in the SIP Call region;
- not be required by Federal government regulation;
- not be used to generate compliance or permitting credits otherwise in the SIP;
- be in operation in the year(s) for which it will receive allowances;
- reduce/displace energy during the summer ozone season;
- be measured and verified in accordance with the methods in this guidance; and
- translate into not less than one(1) ton of NOx allowances, or be aggregated with other projects into one-ton increments of NOx allowances.

One key mechanism for awarding small projects is to allow aggregation of a number of smaller projects under a single application for one or more full tons of allowance awards. EPA strongly encourages aggregation of energy efficiency and renewable energy programs and projects to achieve awards in full one-ton denominations.

Focus on "new" projects

In order to encourage actions that would not otherwise occur, EPA recommends that states either (1) set a larger pool size to provide enough room for both "new" and BAU projects

in the set-aside, or (2) for states with a small pool sizes, use a factor that compensates for a portion of estimated BAU activity on a project-by-project basis. Option 2 will be explained in a later guidance document. Encouraging actions that would not otherwise occur without an EE/RE set-aside means rewarding projects that go beyond actions that would have occurred in a business-as-usual (BAU) scenario. The guidance explains the distinction between “new” and BAU projects, and why EPA believes it is important for states to design a set-aside system that helps to focus awards on “new” projects.

Credit for early actions

The Agency also recommends that states give credit to early actions. This would award set-aside allowances for energy efficiency and renewable actions which occur prior to the 2003 summer ozone season. The allowances would be awarded out of the set-aside pool available for the 2003 summer ozone season, and possibly the 2004 summer ozone season. This would effectively give end users credit for early actions taken to become more energy efficient or to bring on renewable resources prior to the need for additional or other controls to meet the NO_x budget. The guidance explains how to include credit for early actions in a set-aside. A state that includes credit for pre-2003 actions under a set-aside may want to have a larger pool of allowances to draw from as compared to a state that does not award early actions.

Length of award

EPA recommends that projects should be awarded allowances for at least three consecutive ozone control periods. Verification of energy savings and displacements from projects receiving set-aside awards should occur annually. A shorter stream of set-aside allowances provides greater availability of such allowances over time to reward new projects, but less of an incentive (due to lower total value) to undertake them. A longer stream provides more financial incentive, but limits the availability of allowances for future projects. The guidance explains how these factors affect the number of control periods for which projects should receive set-aside allowance awards. The length of award for previously approved projects should be balanced with the number of allowances included in the set-aside pool, so that there will be sufficient allowances to award to incoming projects.

Adjusting pool size

If a state receives applications for more allowances than are available (over-subscription), EPA recommends awards be made on a first come, first served basis. If a state receives requests for fewer allowances than are available from the pool (under-subscription), EPA recommends a pro-rata reallocation of the extra allowances to core sources for that specific control period. The guidance explains how states may wish to make adjustments to the size of a set-aside after it has been implemented. The mechanism and timeliness with which states can adjust their set-aside pools may suggest whether a larger or smaller number of allowances should be set aside initially.

Submitting an EE/RE set-aside proposal

The final issues addressed by the guidance are the steps necessary in submitting a set-aside proposal for the SIP Call, as part of a state's NO_x Budget Trading Program, and in

establishing appropriate documentation, tracking and reporting mechanisms. The latter includes the establishment of appropriate NOx Allowance Tracking System (NATS) accounts, and the development of forms and reports for administrative purposes as determined by the state, and as are necessary to claim NOx and other pollution prevention benefits.

In order to include a set-aside in a state's NOx Budget Trading Program, states will need to (1) outline the criteria and design elements of their set-aside program, (2) adjust their EGU core source budget allocations to accommodate the allowances that are being set aside; and (3) develop and submit a proposal to include an EE/RE set-aside and the number of allowances that will be in it as part of the SIP submission in September 1999. The most important pieces of information to submit by the September 1999 SIP Call deadline are the state's set-aside allowance pool size and the adjustments to the EGU core source budget allocations. Other design decisions and information can be developed and submitted later, provided EPA has had time to review and evaluate the submissions prior to the initiation of the program. Set-aside allowances will be managed through the establishment of appropriate general accounts in the NATS.

Documentation and reporting requirements for the set-aside are determined by the state. However, documentation and reporting of results achieved from set-aside projects will be of increasing importance, especially as the role of energy efficiency and renewable energy in air quality attainment evolves to include multiple pollutant benefits. EPA will provide guidance on documentation and reporting, as well as a number of example documentation and reporting forms that states may opt to use or adapt for their set-aside programs, in the second guidance document on quantifying and administering a set-aside.

1.0 INTRODUCTION

1.1 PURPOSE

In both the Clean Air Act (CAA) of 1990 and the Pollution Prevention Act (PPA) of 1990 EPA recognizes the significant role that energy efficiency and renewable energy resources play in reducing pollution and achieving the nation's environmental goals. The 1990 CAA enlists greater use of market-based controls and incentives to move toward more energy efficient technologies and practices, which have resulted in the successful Energy Star voluntary programs. It also promotes more reliance on pollution prevention strategies, such as the encouragement of energy conservation and renewable energy resources in the Acid Rain Title. In addition, the 1990 PPA promotes source reduction by facilitating the adoption of particular techniques by businesses, including increasing efficiency in energy use, substituting environmentally benign fuels, and using design approaches that reduce energy demand.

Through the voluntary programs EPA has shown that energy efficiency and renewable energy resources are an effective means for reducing environmental pollution while increasing economic benefits. Many economic studies have recognized that energy efficiency and renewable energy investments provide broad societal benefits, both economic and environmental, that are not rewarded in the revenue streams derived by investors in these projects. Energy efficiency and renewable energy resources result in permanent reductions of fossil-fuel energy use, which are a primary cause of pollution emissions. As greater penetration of energy efficient products and renewable energy resources occurs through a number of programs and other policies, the air pollution reduction impact has become significant. However, the air pollution emission reductions from energy efficiency and renewable energy have not been formally recognized in air quality attainment processes. Meanwhile, state and local governments have requested that EPA provide additional tools and greater flexibility in how they meet their air quality attainment goals, including some provision for recognizing energy efficiency and renewable energy-related air quality benefits in their air planning processes. This document provides guidance to assist states that wish to build energy efficiency and renewable energy into their programs for mitigating the transport of NO_x emissions across state boundaries. It focuses on incorporating energy efficiency and renewable energy actions into the emissions trading system that is available to states in the NO_x SIP Call Region in 2003, as part of a NO_x Budget Trading program.

This set-aside guidance will help states design a functional system that is consistent with three main goals that EPA stated for including energy efficiency and renewable energy in the NO_x Budget Trading Program: (1) to reduce the total economic cost of meeting the proposed NO_x cap; (2) to promote energy efficiency by accelerating the adoption of energy efficient practices and technologies; and (3) to reduce future CO₂-related liabilities by recognizing the positive impacts of energy efficiency and renewable energy on carbon emissions. The guidance presents EPA's current thinking on the important elements to include in the design of a functional system that sets aside a portion of a state's trading program budget to be allocated to implementers of energy efficiency and renewable energy projects. It is intended to assist states that choose to use a portion of the budget to recognize and award energy efficiency and renewable energy projects that prevent NO_x pollution and reduce ozone formation as part of a least cost strategy to mitigate ground-level ozone transport.

The set-aside guidance will help states design a functional system that is consistent with two key principles that EPA believes underlie an energy efficiency and renewable energy set-aside within the NO_x Budget Trading Program. These two key principles are: (1) to encourage actions that increase energy efficiency and renewable energy actions; and that would not occur without a set-aside; and (2) to do so while maintaining the integrity of the NO_x budget. The set-aside system guidelines summarized in this document aim to achieve the first principle by demonstrating the enormous potential that exists for incremental improvements as compared to business-as-usual (BAU) activity. In addition, the guidance will provide options for states to consider in the design of a set-aside that will help target the system toward incremental actions. In keeping with the second principle, the allowances that are allocated to energy efficiency and renewable energy projects are provided for from within a state's NO_x budget. Therefore the buying and trading of these allowances in accordance with the provisions in the NO_x Budget Trading Program Rule should not result in the exceedance of the budget in the SIP Call region. Thus the integrity of the system will be maintained.

This document assumes that the reader is familiar with the details of the NO_x Budget Trading Program as outlined in EPA Final Rule, 40 CFR Parts 51, 72, 75, and 96 *Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone*. It outlines what a state may do in designing a set-aside approach that aligns with the NO_x Budget Trading Program. In addition it explains EPA's recommended approach for designing an energy efficiency and renewable energy set-aside, with a view to providing ample flexibility to states in designing their programs. As such, it rewards energy efficiency and renewable actions that affect stationary sources in the NO_x SIP Call region, and does not include actions in transportation or mobile sources.

1.2 HOW THE SET-ASIDE GUIDANCE IS ORGANIZED

EPA has organized the set-aside guidance into three separate documents to be issued during FY 1999. The first set-aside guidance document, Establishing an Energy Efficiency and Renewable Energy Set-Aside, focuses on the elements necessary for a state to consider in determining whether or not it will do a set-aside, and what size or how many allowances should be set-aside for energy efficiency and renewable energy projects. These are the critical elements that must be decided in order to include the appropriate information on the set-aside in a state's September 1999 SIP submission.

The second set-aside guidance document, Quantifying and Administering Energy Efficiency and Renewable Energy Set-Aside Allowances, focuses on the design elements that are necessary for quantifying and allocating allowances under a set-aside. This includes discussion on when the allowance awards should be made (timing of awards), how and when to apply for awards, and what information is needed in the application. It also discusses when measurement and verification of project results should occur, how to translate project results (energy saved or displaced) into emissions using the SIP Call region NO_x factor, and how to direct allowance awards towards "new" projects by netting out a portion of BAU activities using a compensation factor. The second set-aside guidance also discusses the elements concerning the administration of a set-aside program, including documentation and reporting. These are the design elements which a state can determine after September 1999, but which should be decided upon before implementation of a set-aside.

The third set-aside guidance document, Measuring and Verifying Energy Efficiency and Renewable Energy in a Set-Aside Program, explains how to adapt the available protocols for measuring and verifying the savings from energy efficiency and renewable energy projects which are submitted for set-aside allowances. This measurement and verification guidance document will show the user which specific protocols are available for different energy efficiency and renewable energy projects, and make recommendations for how to compensate for the uncertainty associated with each method of measurement and verification.

All three guidance documents are being developed through the efforts of a workgroup EPA convened with state and regional representatives. This group worked for over a year researching design elements and developing options for promoting energy efficiency and renewable energy actions in the context of the NO_x Budget Trading Program that was under development by EPA's Office of Air and Radiation. The workgroup also tested the workability of the systems by applying the approaches outlined in the guidance to real projects. This guidance was reviewed by the workgroup and other EPA offices. Although this document represents final guidance for the purpose of designing an energy efficiency and renewable energy set-aside as part of the NO_x Budget Trading Program, it may be revised periodically to reflect lessons learned through the state implementation of the guidance. In addition, where provisions are not specifically addressed in the efficiency set-aside language, design elements from the overall cap and trade program may apply.

1.3 USING THIS GUIDANCE

Establishing an Energy Efficiency and Renewable Energy (EE/RE) Set-Aside guidance is divided into eight sections which explain the issues to be considered and steps for states to take in deciding to do a set-aside and determining its size. In addition it explains what information a state must include in its September 1999 SIP submission to establish a set-aside as part of its NO_x Budget Trading Program. The information discussed in each section is as follows:

Section 2, entitled What Is an EE/RE Set-Aside and Why Do One, explains how an EE/RE set-aside fits into the NO_x Budget Trading Program. It illustrates what portion of the NO_x trading program budget EPA estimates can be devoted to reward energy efficiency and renewable energy through the set-aside. This section also provides an estimate of the economic and environmental benefits that states can achieve by running a well-designed set-aside in the SIP Call region.

Section 3, entitled Overview of Size Design for a Set-Aside, outlines five key design issues for states to consider in determining how many allowances they will devote to an EE/RE set-aside. It presents EPA's rationale for how these five design issues come together to help a state focus on the amount of allowances appropriate to what and how they will be making set-aside awards. The issues cover what is eligible, whether awards are focused on new projects, whether or not early action are included, the number of years (or control periods) a project may receive an award, and how to make adjustments in the size of the set-aside. The specific recommendations to address each individual issue are outlined in the next five sections.

Section 4, entitled Who and What Is Eligible for Set-Aside Allowances lays out the specific requirements and criteria for states to consider in determining who will receive set-aside allowances and what actions are eligible for crediting. These criteria are designed to promote the use of set-aside allowances as incentives to encourage additional energy efficiency and renewable actions that prevent NO_x emissions, while remaining consistent with the provisions of the NO_x Budget Trading Program.

Section 5, entitled, Focusing Awards on "New" Projects, discusses how a state can deal with business-as-usual activities as part of its set-aside size determination. It gives guidance about what a state can do to provide a sufficient number of allowances to address "new," or better than business-as-usual, energy efficiency and renewable energy projects.

Section 6, entitled Including Credit for Pre-2003 Actions, explains how states can design a set-aside to award allowances to eligible projects which are implemented prior to the start of the NO_x Budget Trading Program. The guidance in this section will assist states to accommodate the savings from several years' worth of early actions.

Section 7, entitled Figuring in the Length of Award, provides guidance to states about the number of consecutive control periods to set as the length of award. This is based on the fact that the energy savings/displacements from a particular project occur over many years, and therefore may justify giving a project more than one season's worth of allowances as an award.

Section 8, entitled Adjusting the Size of Your Set-Aside, recommends methods for the state to use if there are too few or too many allowances in its set-aside. EPA provides guidance about how to make adjustments in a particular season, as well as re-sizing the set-aside to better accommodate future needs.

Section 9, entitled What to Submit to Establish a Set-Aside in Your NO_x Budget Trading Program, outlines the specific information states need to include as part of their September 1999 SIP submissions if they intend to do a set-aside.

2.0 WHAT IS AN EE/RE SET-ASIDE AND WHY DO ONE

An EE/RE set-aside is a pool of allowances that comes from within a state's NO_x budget and is used to award energy efficiency and renewable energy projects that are implemented in the state that reduce or displace electricity generation. EPA recommends that 5 - 15 percent of a state's NO_x budget can be made available for an EE/RE set-aside. EPA believes that a set-aside of this size will deliver significant environmental and economic benefits to a state. This is because EPA believes there is a large potential for energy efficiency and renewable energy, and that a set-aside will help catalyze these investments. This section explains how the EE/RE set-aside fits into the NO_x Budget Trading Program. It also explains why states should consider doing a set-aside, by outlining the potential benefits of a fully-subscribed, 5 percent set-aside in the SIP Call region to electricity consumers, electricity generators and to state and local economies.

2.1 THE NO_x TRADING PROGRAM BUDGET

The NO_x Trading Program Budget comprises the NO_x emission allowances EPA has allocated on a per state basis in the SIP Call region for the purpose of mitigating ozone transport in the summer months. The budget has two components: (1) an electricity budget; and (2) a fuel budget. The electricity budget is based on tons of emissions allowable for a group of core sources that comprise all large, fossil fuel-fired stationary boilers, combustion turbines, and combined cycle systems that serve electrical generating units (referred to as EGUs) of greater than 25MWe capacity. The fuel budget is based on tons of emissions allowable from large, fossil fuel-fired stationary boilers, combustion turbines, and combined cycle systems that serve non-electrical generating units (referred to as non-EGUs) that have a heat input capacity of greater than 250 mmBtu/hr. The NO_x Budget Trading Program does not include emissions from mobile and area sources within the assigned state budgets.

2.1.1 How an EE/RE Set-Aside Fits into the NO_x Budget Trading Program

An EE/RE set-aside comes from within a state's NO_x budget for core sources that generate electricity only. The set-aside comes from within the budget in order to ensure that the use of these allowances will not cause a state to exceed its budget. It comes from the electricity budget only because this (1) is consistent with the goal of awarding end user actions, and (2) it avoids the possibility of double-rewarding allowances. This means that EE/RE set-aside allowances are not intended for actions which reduce or displace on-site fuel use. Rather, EE/RE allowances are intended to reward actions that result in a reduction in electricity generation at a core source or in supplanting the use of electricity from the grid. A more detailed discussion of this point is provided below.

Why on-site fuel is not included. On-site fuel reductions at core sources are not part of the EE/RE set-aside because (1) they are the result of supply-side management actions, and (2) they are self-rewarding. Supply-side efficiency improvements are not attributable to end user actions in the same way that demand side management and other energy efficiency and renewable energy actions are in reducing electricity generation. For example, a reduction in fuel use due to efficiency at a non-utility boiler reduces the amount of NO_x generated by that boiler, and frees up allowances for that core source to use elsewhere in

that facility or in other company facilities, or to trade in the market. If additional allowances were awarded to this activity, then the owner or operator of the non-utility boiler would essentially be rewarded twice. The first reward is the result of the freed up allowances resulting from lower NO_x emissions that happened through the efficiency improvement, and the second reward comes from extra allowances that would be allocated from the set-aside pool commensurate with the efficiency improvement that was undertaken.

Focusing on end use electricity efficiency and renewables. The EE/RE set-aside focuses primarily on end user electricity efficiency and renewables actions because the amount and source of electricity users consume affects the amount of NO_x emitted at an electricity generation unit, or core source. Rewarding an end use project that reduces or displaces electricity generation is very different from the situation described above for an on-site fuel efficiency project. Since the end user and the electricity generator are usually two different parties or entities, the chance for double-rewarding is minimized. For example, take a situation in which a comprehensive energy efficiency retrofit project is implemented in a number of commercial buildings. In this case, the facility manager may earn allowances for the NO_x emissions that will be avoided as the result of the reduced electricity use from the upgrade of the buildings. Here the actions that are being rewarded cause a direct and quantifiable reduction in the amount of electricity generated, which causes NO_x to be emitted by generation companies and others with control requirements. The amount of electricity users choose to consume through their operation and energy efficiency choices affects the amount of NO_x emitted per kWh of electricity produced. The electricity generating facility will enjoy the benefit of the reduction in NO_x that the end user's efficiency improvement has achieved. The end user's action will therefore reduce the electricity generator's need for allowances, and potentially free up allowances for the generator to use otherwise or to trade in the market. But the reward for the action taken will go to the end user, who is free to keep or trade the allowances in the market. This set-aside guidance is primarily for designing systems which reward this kind of end user activity.

2.2 WHY DO AN EE/RE SET-ASIDE

There are three key reasons for a state to include an EE/RE set-aside as part of its NO_x Budget Trading Program: (1) to reduce the total economic cost of meeting the proposed NO_x cap; (2) to promote energy efficiency by accelerating the adoption of energy efficient practices and technologies; and (3) to reduce future CO₂-related liabilities by recognizing the positive impacts of energy efficiency and renewable energy on carbon emissions. Greater adoption of energy efficiency and renewable energy can prevent growth in NO_x emissions, avert the need for building additional generation facilities, save energy and consumer dollars, and put additional jobs and money into the local economy.

2.2.1 Economic Benefits of An Energy Efficiency and Renewable Energy Set-Aside

EPA has estimated the economic benefits that can accrue from a 5 percent energy efficiency and renewable energy set-aside in the NO_x Budget Trading Program across the SIP Call region. The EPA estimate assumes that the set-aside is fully subscribed, is well-designed

and functional, is appropriately measured and verified, and delivers additional energy efficiency and renewable energy. By implementing such a set-aside and rewarding projects accordingly, a 5 percent set-aside will lead to:

- an estimated reduction in electric demand of over 90 BKWh in 2003 in the SIP Call region;
- approximately \$5.0 billion in energy bill savings to consumers in 2003;
- about \$150 million in compliance cost savings for that year; and
- about 20,000 new jobs throughout the region.

In addition, these projects will prevent a number of pollutant emissions, including NO_x, PM, greenhouse gases, mercury and others.

The energy efficiency and renewable energy set-aside is a means by which end users implementing these projects can receive some of the appropriate rewards for their role in providing a specific environmental benefit – preventing NO_x emissions – while broadly benefitting the economy. States which choose to incorporate the energy efficiency and renewable energy set-aside into the NO_x Budget Trading Program can expect to realize significant economic benefits as a result of reduced electricity consumption and reduced need for expenditures on pollution control equipment, both of which can lead to lower electricity rates. These projects lead directly to job creation and growth in gross state product. The assessment of this level of energy efficiency and renewable energy deployment shows that these benefits will accrue to three stakeholder groups: electricity consumers, electric generators, and the state economy at large.¹ The assessment of benefits for each of these groups that is discussed below is based on the assumption of a fully-subscribed, 5 percent set-aside in the SIP Call region.

Benefits to electricity consumers. EPA estimates the total savings to consumers from reduced electricity demand and lowered electricity rates, combined, to be over \$5.0 billion in 2003. Electricity consumers benefit from projects rewarded under an energy efficiency and renewable energy set-aside in three ways: reduced electricity demand, lower electric rates, and revenue from the sale of set-aside allowances. Reduced demand allows electricity generators to avoid operating high cost units, installing expensive pollution controls, and building new generating units, all of which lead to lower electricity rates. Savings due to lower rates are expected to broadly benefit consumers in the affected region, not only the consumers responsible for reducing demand. Entities such as residential aggregators, ESCOs, and large industrial and commercial customers are the likely recipients of the set-aside allowances, and will also benefit through the sale of the allowances back into the NO_x market. This allowance “buy back” revenue may provide additional impetus to spur energy efficiency and renewable measures, and is estimated to amount to over \$80 million in revenues. Residential, commercial, and industrial electricity customers will receive the benefit of the electric demand reductions, and may receive some benefit from the allowance revenues as well, since competitive market forces may provide an incentive for ESCOs and other recipients to pass

¹ICF Resources, “SIP Energy Efficiency Set-Aside - Draft Estimate of Societal Costs,” Working Memo to EPA Office of Atmospheric Programs, Washington, D.C., August 1998.

these along to their customers.

Benefits for electricity generators. Electricity generators benefit from an energy efficiency and renewable energy set-aside because it lowers their cost of compliance for meeting the NO_x budget. EPA estimates that the electric demand reductions lower the costs of summer NO_x control by over \$150 million in 2003, which represents about a 10 percent decrease in control costs. In essence, reduced demand decreases the uncontrolled NO_x emission baseline. This means that fewer tons of NO_x need to be reduced in order to meet the cap. In addition to compliance savings, there is a large cost savings for electric generators resulting from the reduced total demand in the region. This is estimated to save over \$2.0 billion dollars in generation costs, including reduced expenditures on fuel, maintenance, other variable costs and new construction costs. Some electricity generators will need to buy back allowances allocated under the set-aside, which will offset some of these savings. This expense is estimated to be over \$80 million dollars in 2003, parallel to the allowance revenues that set-aside awardees will receive.

Benefits to state and local economies. Using resources more efficiently by taking advantage of cost-effective energy efficiency and renewable energy opportunities can ultimately lead to faster job creation and economic growth than would otherwise occur. EPA estimates that the set-aside could benefit the SIP Call region's economy by creating an additional 40,000 jobs.² By appropriately rewarding the investor in energy efficiency and renewable energy projects for their value in reducing NO_x control costs, the set-aside will motivate projects that broadly benefit the state and regional economy. Economists have found that investments in energy efficient technologies are generally more productive for the economy than investments in conventional electricity production. In addition, electricity bill savings serve to stimulate further economic activity, especially in the local economy.

2.2.2 Accelerating Adoption of Energy Efficiency & Renewable Energy

Since energy efficiency and renewable energy can make significant contributions toward preventing the emission of a number of pollutants, states may want to take advantage of the great potential for energy efficiency and renewable energy to prevent multiple pollutant emissions, not only NO_x emissions. Using the potential for increased use of energy efficiency and renewable energy identified in DOE's recent 5-Lab Study, EPA estimates that the prevention of a significant amount NO_x emissions reductions can be achieved in the SIP call

²Laitner, Skip "Estimating Economy-wide Employment Impacts from Energy Efficiency Investments," Working Memo, EPA Office of Atmospheric Programs, Washington D.C., January 1999.

region through greater penetration of these technologies and practices.³ A set-aside would be a key element for catalyzing investments in additional energy efficiency and renewable energy.

The 5-Lab and other studies also demonstrate that the energy efficiency and renewable energy projects a set-aside may catalyze can prevent multiple pollutant emissions. For example, the 5-Lab Study estimates that energy consumption can be reduced by 9 percent to 15 percent over Business-As-Usual (BAU) projections by 2010. This results in the potential for:

- a 12 percent reduction in NO_x emissions nationwide by 2010; and
- a 33 percent to 100 percent reduction in the growth of carbon emissions between 1990 and 2010⁴.

Another study, "Energy Innovations: A Prosperous Path to a Clean Environment," (June 1997) shows not only the potential for energy consumption to be 15 percent lower by 2010 and 42 percent lower by 2030, but also for renewable energy resources to supply 14 percent of U.S. energy needs by 2010 and 32 percent by 2030. Moving along the Innovation Path would produce the following results in 2010 (as compared to 1990 levels):

- a 64 percent reduction in sulfur dioxide (SO₂) emissions;
- a 27 percent reduction in NO_x emissions;
- a 10 percent reduction in carbon dioxide (CO₂) emissions; and
- reductions in other pollutants including fine particles, toxic metals and hydrocarbons significantly.⁵

In addition, a set-aside can reduce a number of the barriers to greater penetration of energy efficiency and renewable energy. Even though many studies conclude that these significant reductions can be achieved cost-effectively through energy efficiency and renewable energy, there are still many barriers that prevent many projects from being implemented. These barriers include informational, financial, regulatory, legislative and other hurdles. In addition, the implementation of electricity restructuring by different states may impact the continuation of existing or development of new demand side management (DSM) programs. Without specifically building provisions for DSM programs into restructuring legislation, the funding for energy efficiency and renewable energy projects is very likely to disappear. If these barriers are not removed then a substantial quantity of cost-effective

³U.S. DOE, "Scenarios of U.S. Carbon Reductions: Potential Impacts of Energy-Efficient and Low Carbon Technologies by 2010 and Beyond," U.S. DOE, 1997. Conducted by five U.S. DOE laboratories, the study is referred to as the "5 Lab Study."

⁴EPA has calculated the potential reduction in NO_x emissions using the 5 Lab Study's findings for energy savings. These reductions in NO_x emissions have been calculated using a NO_x factor derived from EPA's "National Air Pollutant and Emissions Trends Report." In 2010, NO_x emissions are estimated to decrease by approximately 1.3 million tons or 12 percent under the High-Efficiency Scenario compared to the Business-as-Usual Scenario.

⁵Alliance to Save Energy, American Council for an Energy Efficient Economy, Natural Resources Defense Council, Tellus Institute, and Union of Concerned Scientists, "Energy Innovations: A Prosperous Path to a Clean Environment," Washington, D.C., 1997.

emissions reductions may be forgone. This guidance brings the value of the emissions avoided through energy efficiency and renewable energy to the attention of state air quality planners and state energy officials by providing step-by-step guidance on how to reward the avoided emissions from energy efficiency and renewable energy in the SIP Call Region with emission allowances. By reducing the information barriers and improving the SIP planning process, EPA hopes to assist states, communities, and businesses to accelerate adoption of energy efficiency and renewable energy, and to gain the associated economic and air quality benefits.

2.2.3 Reducing Future CO₂ Liabilities

Each year, billions of dollars are invested across the country in energy-using technologies. As businesses and consumers purchase these products, they have a wide range of choices regarding energy efficiency and fuel types. Each investment, therefore, is an opportunity to either improve energy efficiency or switch to cleaner, renewable fuels -- an opportunity to reduce greenhouse gas emissions without sacrificing output, comfort, or convenience. According to past reports by the National Academy of Sciences (1991), the U.S. Congress Office of Technology Assessment (1991), and the U.S. Department of Energy (1997), accelerating the deployment of highly efficient and renewable technologies can significantly reduce greenhouse gas emissions in the United States.

2.3 ALLOWANCES AVAILABLE FOR A SET-ASIDE

The allowances available for a set-aside, or the range of contribution energy efficiency and renewable energy programs and projects can make, can be determined by comparing the potential for energy efficiency and renewable energy to the total NO_x budget for electricity generation. EPA recommends that states opting to include an energy efficiency and renewable energy set-aside within the NO_x Budget Trading Program set the size of the allowance pool at an amount large enough to maximize the opportunities to promote energy efficiency and renewables projects. Using two different methods and the projections for energy efficiency potential from the 5-lab study, EPA finds that a set-aside contribution in the range of 5 - 15 percent of the total electricity NO_x budget for a State or across the region is reasonable.⁶ The pool represents a percentage of the total NO_x Trading Program budget, which can be specified as a certain number of available tons. The pool will come from within the NO_x budget, so that there is no danger of exceeding it. Recipients of these tons would sell them back into the NO_x allowance market, thus not reducing the total budget.

Using the total potential for energy efficiency and renewable energy as a guideline, there are at least two methods states can use to determine the size of their own individual state energy efficiency and renewable energy set-aside pools. First, a state could take the nationally recommended set-aside on a percentage basis (5 - 15%) and apply it to the electricity generation portion of their NO_x trading budget. Alternatively, a state could make an independent assessment of the number of kWh they project could be productively catalyzed through an energy efficiency and renewable energy allowance award in their state, and set the size of the pool using an average heat rate and the assigned 0.15lbs/mmBtu NO_x rate. Other

⁶ICF Resources, "Alternate Methodologies for Calculating the Allowance Set-Aside," Working Memo to EPA Office of Atmospheric Programs, Washington D.C., November 25, 1998.

methods can be used to determine an appropriate set-aside allowance pool size, with the caveat that there should be a clear link between the expected load reductions and the corresponding emissions reductions. Further guidance and details on how states may want to set the size of their energy efficiency and renewable energy set-asides are included in the following sections of this guidance.

3.0 OVERVIEW OF SIZE DESIGN FOR A SET-ASIDE

Once a state decides to include an energy efficiency and renewables set aside in its NO_x Budget Trading Program, the next decision a state will have to make is how many allowances to set aside to award to projects. A number of issues, or design elements, concerning size that should be considered by a state when making this decision. This section will present an overview of these elements, and give a general explanation of how they fit together in a determination of the number of allowances to include in an energy efficiency and renewable energy set-aside.

3.1 KEY ELEMENTS

There are five key elements for a state to consider in determining the number of allowances to include in an energy efficiency and renewable energy set-aside. The five key elements are:

- who and what is eligible for set-aside allowances
- whether and how to set the size to focus awards on "new" projects
- whether or not to award credit for actions implemented before 2003;
- how many control periods the award will be given for (length of award); and
- how to handle over and under subscription of the allowance pool;

The guidance will address each of the five key elements concerning size individually, and present EPA's recommendations for each one. It will also discuss the interactive effects that may exist between two or more of these elements.

3.2 EPA'S RECOMMENDATION ON THE SIZE FOR A SET-ASIDE

EPA believes that a reasonable size for a set-aside pool of allowances ranges between 5 and 15 percent of a state's total NO_x Trading Program Budget for electricity generation units (EGUs), as discussed in section 2.3 on the availability of allowances for a set-aside. This range is based on the potential for energy efficiency and renewable energy to prevent NO_x emissions in the SIP Call region, as interpolated from the DOE Five-Lab and Energy Innovation Path studies.

Using this range and the individual state budgets specified in the NO_x Trading Program Budget rule, EPA has developed a recommended range for each state in the SIP Call Region, as a starting point and guide to determining a state's potential set-aside pool size. States have a great deal of flexibility in setting the size of their set-aside allowance pools, however. Some states may opt to use a number in the range outlined in the above table. Others may determine an appropriate size for their set-asides by looking at a set of specific projects that they would like to catalyze through this mechanism and using an average heat rate and a NO_x rate (such as the 0.15 lbs/mm Btu NO_x control rate in the SIP Call region) to determine the number of allowances required for those projects. Still others may want a more "open-ended" set-aside, where all eligible and qualified projects are awarded with allowances taken off of the top of the state's NO_x Trading Program Budget, before allocations to core sources or other entities are made. Table 1 illustrates the potential size ranges that follow EPA's recommendation for set-asides for states in the SIP Call region:

Table 1. Energy Efficiency & Renewables Set-Aside Size Ranges

STATE	EGU MAXIMUM SUMMER NO _x (TONS)	EE SET- ASIDE POOL		STATE	EGU MAXIMUM SUMMER NO _x (TONS)	EE SET-ASIDE POOL	
		5%	15%			5%	15%
AL	28,884	1,444	4,333	NC	29,967	1,498	4,495
CT	2,545	127	382	NJ	7,898	395	1,185
DC	207	10	31	NY	29,391	1,470	4,409
DE	3,489	175	523	OH	45,776	2,289	6,866
GA	30,061	1,503	4,509	PA	48,038	2,402	7,206
IL	30,165	1,508	4,525	RI	1,115	56	167
IN	46,627	2,331	6,994	SC	16,286	814	2,443
KY	36,315	1,816	5,447	TN	25,386	1,269	3,808
MA	14,619	730	2,193	VA	18,009	900	2,701
MD	14,788	739	2,218	WI	16,751	838	2,513
MI	26,344	1,317	3,952	WV	26,439	1,322	3,966
MO	23,171	1,159	3,476				

Note: Set-aside based on revised state-by-state maximum summer NO_x emission levels as presented in appendix C of EPA Final Rule 40 CFR Parts 51, 72, 75, and 96 issued on 10/20/98 (Total EGU NO_x Budget = 522,271 tons).

No matter what the size of the set-aside allowance pool is or how it is determined, a state should be able to demonstrate the link between the expected load reductions from efficiency and renewable projects and actions and the corresponding amount of NO_x emissions represented in the set-aside pool.

3.3 USING THE FIVE KEY ELEMENTS TO DETERMINE THE SIZE OF YOUR POOL

Each of the five key elements has a specific role to play in helping a state determine the size of its set-aside. In addition, several of these elements are interactive, so making a determination for one element may drive the decision regarding another.

The first element, **who and what is eligible to be awarded with allowances** from the

set-aside, will define an universe of applicants that may suggest an appropriate number of allowances. For example, the larger the universe of potential projects that could be awarded with allowances, then the more allowances that a state may need to set aside in the pool to accommodate them. If a state plans to include a narrower scope of eligible projects than that which EPA recommends, then the state may want to set fewer allowances aside. If the state enlarges the scope, however, it may want to set a size larger than the maximum indicated in EPA's recommendation.

The type and number of potential applicants and projects is not the only factor, however. Once a state knows how large its potential universe of projects is, the state should consider the second key element: **how to focus awards on "new" projects**. For the purposes of this guidance, "new" projects are those which deliver additional energy efficiency and renewable energy beyond those which would occur in a "business-as-usual" scenario. States who want to award allowances as much as possible to "new" projects can make sure that they make the allowance pool large enough so that it can accommodate both "new" and business-as-usual projects. If the scope of eligible projects has been designed or modified so that it focuses on "new" projects, then the number of allowances to be included in the set-aside may be smaller.

Another key element that should be considered at this point in a state's set-aside size determination is **whether or not a state will award allowances for early actions**. Early actions are energy efficiency or renewable projects that are implemented prior to May 2003. It is possible for a state to award allowances for projects that are implemented as many as three years, or three summer ozone control periods, prior to the beginning of the NO_x Budget Trading Program in 2003. Because the allowances to award early actions come from that first ozone control period in 2003 (explained in more detail in section 6.0), a state awarding early actions may need a larger pool of allowances to draw from as compared to a state that does not award early actions.

The fourth key element, **the length of an award**, also can affect what size a set-aside should be. If allowances are awarded for more than a single control period, a given set of projects will tie up those allowances for all of those control periods. For example, if a state with a 5 percent energy efficiency and renewable energy set-aside has awarded all of those allowances in 2003 to 10 projects for a minimum of three control periods, then there are no other allowances left to award to any other projects until the 2004 ozone control period. Therefore, it is important for states to consider how many projects are likely to apply for allowances over more than a single control period. This is especially true if a state will not be updating its allowance allocations on an annual or very frequent basis.

The last key element deals with **making adjustments in the size of a state's set-aside** to fit the level of demand it achieves once it has been implemented. Since many states are likely to set a fixed pool size for their set-asides, it will also be likely that these pools will either contain too few or too many allowances as compared to the number needed to award to eligible projects. Although the adjustment mechanisms come into play *after* a state has determined the size of its set-aside pool, it is important for a state to understand what mechanism it will use and how it will work in setting the size of its initial pool. For example, if a state's allowance allocations to its EGUs and the proportion of allowances in the energy efficiency and renewable energy set-aside will be in force for a three-year period, it will be at least three years before a state can change the number of allowances in the set-aside pool. If a state has set too few allowances aside, then a number of good projects that would normally

be eligible for set-aside allowances may have to go unrewarded, the awards to them may have to be significantly delayed, or a state may have to pro-rate the allowances awarded to all projects in that year. Setting a larger pool aside initially may help avoid such a problem.

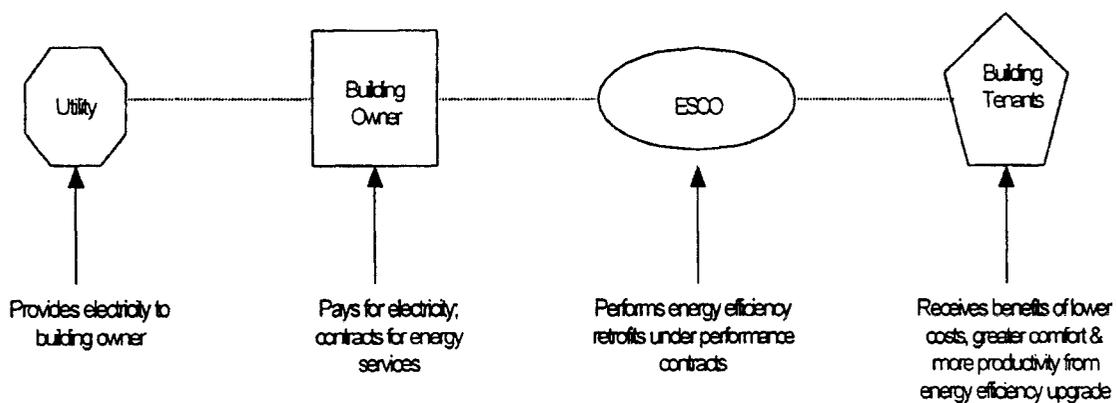
4.0 WHO AND WHAT IS ELIGIBLE FOR SET-ASIDE ALLOWANCES

EPA's focus for the set-aside is to use these allowances as incentives to reward end user energy efficiency and renewable actions that help prevent NO_x emissions. Generally, EPA believes that eligibility for set-aside allowances should be broad, barring some exceptions which are outlined in this section. Eligibility is to be determined by the state, in keeping with the recommendations that follow. However, in some cases a judgment regarding an applicant's eligibility may call for innovative approaches regarding the concept of the "end user." This section explains the specific requirements and criteria for states to consider in determining who will receive energy efficiency and renewable energy set-aside allowances and what actions are eligible for crediting. The scope of the universe of applicants and actions that a state decides to allow into the set-aside system, as compared to EPA's recommendation, may point to a need for setting a larger or smaller set-aside pool size.

4.1 WHO IS ELIGIBLE?

EPA recommends that the end user who invests in and/or implements the action be eligible to receive energy efficiency and renewable energy set-aside allowances. Often there are a number of individuals from different organizations involved in any one energy efficiency or renewable energy project. Since more than one entity may be involved with an action, EPA recommends that the eligible entity applying for the set-aside allowance be as close to the end-user as possible. This will ensure that the incentives provided through the set-aside allowances will be most closely linked to the party that has assumed responsibility for undertaking the efficiency or renewable action and who therefore deserves the credit for the associated emissions reduction. For example, in a building retrofit project, Figure 1 illustrates one possible chain of involved parties:

Figure 1. Sample Chain of Parties in a Building Retrofit Project



In this situation, the ESCO has assumed most or all of the financial risk for the project, since it provides the financing for the retrofit improvements, and gets paid out of the savings resulting from the energy efficiency project. Rewarding the ESCO in this situation means that the incentives provided through set-aside allowance will be more closely linked to the party that has

assumed the responsibility for undertaking the efficiency or renewable action and who therefore deserves the allowances for the associated emissions reduction. However, it is possible that the allowances could be rewarded to the building owner, who has contracted for the energy retrofit from the ESCO. This case may require a negotiation between the building owner and the ESCO to determine who will apply for and receive the allowance award. Since the building tenants in this case have no financial investment in the energy efficiency project, they should not be eligible for the allowance award.

The list of potentially eligible applicants for energy efficiency and renewable energy includes any individual or organization that uses electricity and can initiate, finance, or carry out projects that reduce or displace electricity generation. The focus of this guidance is to make allowances available to end users of all types, including aggregators, vendors and others. Examples of such entities include:

- Commercial and industrial building owners and operators;
- Energy service companies (ESCOs);
- Home builders and associations;
- Home owners associations;
- Federal, state and local government agencies;
- Commercial businesses;
- Manufacturers and other industrial energy users; and
- Manufacturers leasing or selling high energy efficiency equipment.

Other entities in addition to those on this list that are eligible to apply for set-aside allowances are those who can aggregate a number of energy efficiency and renewables projects together. Because many energy efficiency and renewable energy projects may involve small retrofits or measures, it will be necessary to aggregate the results of several of them in order for them to receive allowance awards. Entities such as state energy offices, real estate investment trusts, and even industry trade associations are just a few examples of organizations who may logically serve in an aggregator capacity.

With the advent of electricity restructuring, a new entity known as the “Energy Service Provider” (ESP) is coming into existence. These entities are former vertically-integrated utilities that have divested some or all of their generation, and remain in the business of providing energy services. Their services include not only the marketing of different kinds of electricity to end use customers via their transmission and distribution capacities, but also the provision of energy efficiency services as well, like an ESCO. Those ESPs that have divested all fossil generation and are providing other energy services as outlined above are eligible for set-aside allowances, like other end user entities.

4.2 WHAT PROJECTS OR ACTIONS ARE ELIGIBLE?

Although a number of entities are potentially eligible to apply for energy efficiency and renewable energy set-aside allowances, not all of the projects they implement may be eligible. As stated earlier in this guidance, the energy efficiency and renewable energy set-aside provides allowance awards *only* for reductions in or displacements of electricity use. Since the goals of

the energy efficiency and renewable set-aside is to reward end user improvements, most demand-side energy efficiency and renewable energy projects are eligible. To determine whether or not a project is eligible for set-aside allowances, two tests must be met. The first consideration is whether or not the implementation of the project benefits the sponsoring entity by freeing up allowances they already have been allocated. This test generally applies to core sources, such as EGUs and non-EGUs, who may be interested in applying for set aside allowances for the projects they undertake. Second, the project must, at a minimum, meet a number of criteria that ensure the award will work within the NO_x Budget Trading Program and fit within the goals of the set-aside. These criteria apply to all parties interested in applying for set-aside allowances.

4.2.1 Eligible Core Source Actions

EPA recommends that only certain core source actions be eligible for energy efficiency and renewable energy set-aside allowances. Eligible actions will usually be those which do not inherently provide some benefit, such as actions which free up allowances from an existing allocation. They may also be actions which provide a lower-emitting alternative, such as new renewables or landfill methane-to-energy projects, or those which meet both thermal and electricity needs from the same input, such as combined heat and power (CHP).

The table below summarizes the core source actions that are eligible for energy efficiency and renewable energy set-aside allowances. Further explanation on the rationale for the eligibility or non-eligibility of core source actions are outlined in the sections that follow.

Table 2. Core Source Actions Eligible for the EE/RE Set-Aside

Done by	Type of supply side action taken	Base EE/RE award on ozone season	Conditions
non-EGU	Replaces a retired generating unit with CHP	Amount of electricity CHP provides that displaces grid electricity use	Not eligible if receiving new source set-aside allowances
non-EGU	Meets increase need for steam with CHP	Amount of electricity CHP provides that displaces grid electricity use	Not eligible if receiving new source set-aside allowances
non-EGU	Meets increased electricity needs with landfill methane-to-energy project	Amount of electricity methane project provides that displaces grid electricity use	Not eligible if receiving new source set-aside allowances
non-EGU	Provides electricity from new, on-site CHP to an EGU to meet increased electricity needs of other EGU customers	Amount of electricity CHP provides to EGU for other customers	Not eligible if receiving new source set-aside allowances
non-EGU	Meets increased electricity needs on-site with new renewables	Amount of electricity new renewables source provides	N/A
EGU	Meets increased electricity demand for customers with new renewables	Amount of electricity new renewables source provides	N/A
Done by	Type of demand side action taken	Base EE/RE award on ozone season	Conditions
non-EGU	Conducts DSM activities within own facilities	Amount of electricity savings resulting from DSM activities	N/A
EGU	Conducts DSM activities outside own facilities, including lighting, motors, equipment, etc.	Amount of electricity savings resulting from DSM activities	N/A

Supply side energy efficiency projects. Supply side energy efficiency projects undertaken by core sources helps produce electricity more efficiently, yielding more kWh for every ton of NO_x emissions. Such projects may or may not involve a change out of equipment, such as a boiler. The type of supply side improvement made also may or may not affect that core source's allocation of NO_x allowances. This depends upon whether and what type of updating mechanism is built into the allocation scheme adopted by that state in its submission for the NO_x Budget Trading Program. Generally, any improvements made on the supply side of the electricity generation operation benefits the core source by reducing its need for NO_x allowances. Therefore, a built-in incentive for undertaking supply side efficiency improvements exists, and there is no need to provide further motivation via the set-aside.

New renewable energy projects, however, are an exception. Entities which contract for new renewable generation from an outside provider, or build their own renewable generation sources are eligible to apply for set-aside allowances for these projects. In this case, the renewable source is competing with several other low-emitting or more efficient types of generation, which may afford the core source some windfall of NO_x allowances, depending on whether and what kind of generation source it is replacing. Set-aside allowances can be used to catalyze these kinds of investments. Supply side renewable energy projects include wind, solar, biomass, and landfill methane generation.

Combined heat and power (CHP) projects are also an exception on the supply side of electricity generation. Entities which undertake CHP projects that improve the efficiency of their steam output and also supply additional electricity, whether used in the facility itself or dispatched via the grid to another facility, are eligible to apply for set-aside allowances for these projects. Awards should be based on the amount of electricity used to displace other types of generation, and should net out any NO_x emissions produced on-site by the CHP unit. CHP projects include commercial applications where electricity and heat are generated for power, heating (and chilling) operations, and industrial applications where electricity and process steam are generated simultaneously through steam boilers or the use of combustion turbines or engines with a heat recovery steam generator.

Demand side improvements. EPA also recommends that core sources be eligible to receive set-aside allowances for demand side management (DSM) projects they implement to reduce the use of electricity in their own facilities. In this case, the core source is the "end-user" of the energy supplied from the grid, and their DSM activities reduce emissions from a generation unit. Examples of improvements that core sources can make and receive allowances for include motor efficiency upgrades, replacement of equipment that uses grid electricity with a more efficient model, and process improvements or tune-ups that reduce electricity use from the grid.

4.2.2 Ineligible Core Source Actions

EPA generally recommends that efficiency or renewables projects that provide a direct benefit to entities in the form of "freed up" or "extra" allowances from an existing allocation in the NO_x Budget Trading Program not be eligible to receive allowances from this set-aside. Therefore it is recommended that projects undertaken by core sources who receive an allocation of allowances in the NO_x Budget Trading Program not be eligible to receive allowances from this

set-aside for actions which will lower their need for and/or free up NO_x allowances from their existing allocations. This may apply to a number of actions, including all retirements of generating units, most supplyside efficiency, and some DSM activities.

In accordance with EPA's recommendation above, the core source actions which would not be eligible for energy efficiency and renewable energy set-aside allowances include:

1. Retirements of an EGU or non-EGU's old generation units or boilers
 - that are not replaced by a new boiler
 - replaced with more efficient or lower emitting fossil fuel units or boilers
 - replaced with generation from a renewable resource or landfill methane-to-energy unit
2. EGU or non-EGU fuel switching from coal to natural gas
3. Electricity demand side management activities in an EGU's own facilities and buildings
4. EGU actions to meet new demand or lower emissions by the addition of one or more efficient or low-emitting fossil fuel units or boilers

In the case of the first three types of activities at a core source, the action frees up allowances from the core source's existing allocation and provides a benefit to that entity. In the case of the fourth type, it is likely that the new units will have to meet new source review (NSR) requirements, and thus will not emit additional NO_x into the system. If the new units do not trigger NSR, but the state has included a new source set-aside in its budget, the new units are eligible for allowances from that pool.

4.3 CRITERIA FOR ALL PROJECTS

There are seven major criteria that EPA recommends projects or actions meet in order to be eligible to be awarded with energy efficiency and renewable energy set-aside allowances.

Table 3. Set-Aside Eligibility Criteria

Criteria	In order to be eligible for allowances, the project or action:
1	reduces/displaces electricity load from core source EGUs in the SIP Call region
2	is not required by Federal government regulation
3	is not/will not be used to generate compliance or permitting credits otherwise in the SIP
4	is in operation in the year(s) for which it will receive allowances
5	reduces/displaces energy during the summer ozone season
6	is measured and verified in accordance with methods outlined in this guidance; and
7	translates into not less than one (1) ton of NO _x allowances, or can be aggregated with other projects into one-ton increments of NO _x allowances.

These project criteria are necessary to the development of a functional energy efficiency and renewable energy set-aside within the context of the NO_x Budget Trading Program, and are important to meeting the first key principle: maintaining the integrity of the NO_x budget.

Criterion 1, that the project should generally result in a reducing or displacing electricity load in the SIP Call region is included because energy efficiency and renewable energy set-aside allowances are provided for from within a state's trading program budget. Reducing the EGU load in the SIP Call region will help to reduce NO_x emissions and may preclude the need to build additional generation in the area, which also lessens the NO_x compliance burden for the region.

Criterion 2, a project should not be required by Federal government regulation. If so required, then no further incentive is necessary to achieve its implementation, and rewarding such actions would be a form of double-counting. Although this criterion applies to actions that are implemented as the result of a federal regulation, there are a few exceptions: (1) projects that are the result of Executive Orders; Systems Benefits Charge (SBC) programs; (3) Renewable Portfolio Standards; and (4) projects implemented in response to Model Energy Codes.

This limitation does not apply to projects included in federal Executive Orders, such as the Federal Energy Management Program (FEMP) or the Federal Procurement Challenge. Therefore, projects undertaken in response to a federal Executive Order are eligible to receive set-aside allowance awards.

In the case of a SBC programs, states may implement them independently, as part of their own state restructuring legislation, or in response to a provision in federal restructuring legislation to establish an SBC. In either case, the projects undertaken as the result of an SBC program are eligible for set-aside allowances. For example, if the state initiated an SBC program under a state electric restructuring statute to fund energy efficiency activities in hospitals, and the hospitals initiated energy efficiency projects utilizing these funds, then the hospitals could be eligible for allowances under the set-aside for the energy reductions/ displacements achieved by those projects. Where federal legislation calls for establishment of an SBC, it is likely to be implemented in the context of a matching program, i.e., a state would only access the federal portion of the SBC fund if it initiates a state-sponsored program.

In the case of an RPS, which requires that a portion of future electricity sales would be from eligible renewable resources, these can be established via state or federal restructuring legislation as well. In either case, the renewable resources created on the end-use side, or the "green" electricity demand, would be eligible for set-aside allowances.

In the case of the MEC, a state adopts the national model energy code as the standard to which buildings and residences in the state will be constructed. The MEC is set by the Council of American Building Officials (CABO) and promoted as part of DOE's Building Standards and Guidelines Program (BSGP). The adoption of a higher MEC through state legislative mechanisms, especially when coupled with the training of builders and code enforcement officials, is also eligible for set-aside allowance awards.

Criterion 3 is designed to avoid double-counting as well, since projects or actions cannot be used to generate credits for other purposes or be accounted for elsewhere in the SIP. For example, it is not permissible to use the same project to generate new source offset credits and energy efficiency and renewable energy set-aside allowances.

Criterion 4, that the project be implemented in the year(s) for which it receives set-aside allowance credits, avoids the possibility that the load reduction for an energy efficiency or renewable project that receives allowances is never achieved. For example, if a planned project that received some amount of allowances contingent upon its future reductions benefits is canceled for some reason, it may never deliver on the emissions reduction potential for which it received the award.

Criterion 5 is particularly important - only electricity load reductions that occur during the summer ozone season are eligible. All allowances in the NO_x Budget Trading Program, including those in an energy efficiency and renewable energy set-aside, are specific to the summer ozone season. Hence any energy efficiency and renewable energy set-aside allowances which are to be awarded must be due to energy savings which occur in the summer ozone season as defined in the NO_x Budget Trading Program Rule. There are two options for determining what the summer ozone season energy savings are, and these options are discussed later in the guidance, in section 5.3, on translating load reductions into allowances.

Criterion 6 requires that the results of a project be measured and verified in accordance with the methods outlined in this guidance. Allowances in the NO_x Budget Trading Program are allocated to core sources in part based on the verified measurements of emissions from continuous emissions monitors (CEMs). Because energy efficiency/renewables set-aside allowances will have equal value to allowances allocated to core sources, the emissions reductions they represent must be of reasonably similar precision and accuracy, or be adjusted for a lesser degree of accuracy. Although CEMs are impractical to use for monitoring and verifying energy efficiency and renewable energy projects, EPA is devising a system for applying currently available energy efficiency measurement and verification protocols for this purpose. This system is described in the guidance component entitled, Measuring and Verifying Energy Efficiency and Renewable Energy in SIPs.

Criterion 7 is EPA's recommendation that the minimum allowance set-aside for any given energy efficiency or renewable project be at least one ton, since allowances will be distributed and traded in the NO_x Budget Trading Program in one-ton increments. If states do not set a minimum threshold of improvement for energy efficiency and renewable energy projects applying for set-aside allowances, they may be inundated with a large number of applications for small-sized allowance awards. This may create an unworkable administrative burden.

One key mechanism for awarding small projects is to allow aggregation of a number of smaller projects under a single application for one or more full tons of allowance awards. EPA strongly encourages aggregation of energy efficiency and renewable energy projects to achieve awards in full one-ton denominations. The aggregation of projects or actions can be done by an appropriate entity such as an ESCO, a building owner/operator, a real estate investment trust, a state energy office, or other appropriate organization. By setting a minimum threshold and encouraging end users or third parties to submit applications for aggregated projects, state may reduce any associated administrative burden and more effectively integrate the use of the set-aside with state electricity restructuring initiatives and state public benefits programs. For example, if each school in a county were to participate in a financing program for projects to improve energy efficiency, the school district could aggregate all of the energy savings from the projects undertaken and potentially receive set-aside allowances for the reductions.

5.0 FOCUSING AWARDS ON "NEW" PROJECTS

EPA believes it is important to design a set-aside system that adheres as closely as possible to the second of its two key principles: encouraging actions that would not otherwise occur without the set-aside. Encouraging actions that would not otherwise occur without an EE/RE set-aside means rewarding projects that go beyond actions that would have occurred in a business-as-usual (BAU) scenario. This section explains the distinction between "new" and BAU projects, and why EPA believes it is important for states to design a set-aside system that helps to focus awards on "new" projects. In order to encourage actions that would not otherwise occur, EPA recommends that states either (1) set a larger pool size to provide enough room for both "new" and BAU projects in the set-aside, or (2) for states with a small pool sizes, use a factor that compensates for a portion of estimated BAU activity on a project-by-project basis.

5.1 "NEW" PROJECTS VS. BUSINESS-AS-USUAL (BAU)

In the past, a number of energy efficiency and renewable energy projects have been undertaken for a variety of reasons. Some measures have been implemented as the result of regulatory mandates. For example, the impetus for some of these actions has come from the EGU's themselves, as part of the demand side management (DSM) efforts that were mandated by public utilities commissions (PUCs). Other efforts have been driven by participants who desire to maximize profits and minimize energy costs. In fact, analysis shows that energy efficiency is continually incorporated into all sectors of the U.S. economy, improving the amount of energy needed for a given output by about 1 percent per year in recent times. These actions are generally those referred to as business-as-usual (BAU) energy efficiency and renewable energy.

But the energy landscape is changing, and many of the past incentives for energy efficiency and renewable energy projects may be diminishing or disappearing. Under electricity restructuring, the regulatory mandates for DSM or DSM funding have begun to disappear. Individual state or federal restructuring legislation may provide for some continuation of funding for DSM-type activities, but this is uncertain. At the same time, the DOE 5-Lab and the Energy Innovations Path studies have shown that much greater penetration of energy efficient and renewable energy technologies is possible. The additional or incremental energy efficiency and renewable energy projects that these studies indicate can be achieved, beyond the recent 1 percent per year amount of improvement, are referred to in this guidance as the "new" projects that go beyond BAU.

5.2 AWARDING "NEW" PROJECTS

A well-designed EE/RE set-aside can catalyze accelerated implementation of energy efficiency and renewables beyond that which is planned in response to current regulatory requirements or corporate business plans. Determining which energy efficiency and renewable energy actions would or would not have happened under a BAU scenario is not a particularly easy task, however. Even though some assumptions about the penetration of BAU actions may be included in an energy demand baseline, it is difficult to tell which actions are included on a project by project basis. And under a new energy landscape, the assumptions for the future built on past actions are more uncertain. Therefore, rather than making a determination of better than BAU activities project by project, EPA suggests that the size of the set-aside be used as one mechanism for encouraging actions that would not otherwise occur.

One way for a state to have allowances available to award to "new" projects is to set the size of their set-aside large enough to that it minimizes the possibility of only rewarding BAU projects. By establishing a large enough set-aside for energy efficiency and renewable actions,

there will be room for BAU projects as well as the "new," incremental, better-than-BAU projects that may be undertaken as a result of the availability of allowances in a set-aside. This suggests that a set-aside pool closer to 10 or 15 percent of the electricity portion of a state's NO_x trading program budget should be adopted in order to accomplish this. For a state that has a small pool of set-aside allowances and wants to focus awards on "new" projects, EPA recommends the use of a compensation factor in calculating the allowances to be awarded to a project. This factor nets out a portion of estimated BAU activity on a project-by-project basis, and will be explained in more detail in the second guidance document EPA will issue on quantifying and administering a set-aside.

6.0 INCLUDING CREDIT FOR PRE-2003 ACTIONS

The NO_x Budget Trading Program will not go into effect until 2003. Therefore, there is a period of approximately three years prior to its implementation when energy efficiency and renewable energy projects could occur that would have a benefit in preventing NO_x emissions prior to the start of the program. EPA recommends that states consider awarding allowances for energy efficiency and renewable energy actions that are initiated and come on line during this early action period. This would effectively give end users credit for early actions taken to become more energy efficient or to bring on renewable resources prior to the need for additional or other controls to meet the NO_x budget. This section explains how to include credit for early actions in a set-aside. A state that includes credit for pre-2003 actions under a set-aside may need to have a larger pool of allowances to draw from as compared to a state that does not award early actions.

6.1 PRE-2003 ACTIONS

The NO_x Budget Trading Program allows core sources to earn allowances for the NO_x reductions that occur from actions they take prior to the beginning of the trading program. Likewise, states will need to decide whether to award set-aside allowances for energy efficiency and renewable actions which occur prior to the 2003 summer ozone season.

Because allowance trading under the NO_x Cap and Trade Rule begins in 2003, any allowances awarded for early actions would be issued to qualified applicants out of the set aside pool of allowances available for the 2003 summer ozone season and possibly the 2004 summer ozone season. This follows the general method for awarding early credits to core sources in the NO_x Budget Trading Program. In addition, the same rules apply to the set-aside early credits as do in the NO_x Budget Trading Program. That is, any early credit set-aside allowances that have not been used for compliance (i.e., traded to a core source for purposes of complying with the budget) will be retired, and any unused allowances carried forward from the 2003 summer ozone season to the 2004 summer ozone season will be considered banked, and banking rules will apply.

EPA recommends that states consider giving credit to early actions. One advantage to allowing early credit is the avoidance of providing a short-term disincentive to undertaking energy efficiency and renewable energy actions. Without credit for early action, implementers of projects may consider deferring their actions until the 2003 summer ozone season, when they may be eligible for set-aside allowances. Other advantages of crediting actions prior to the 2003 ozone season include:

- increased likelihood that the pool will be fully subscribed;

- more accurate estimate of the pool size; and

- additional time for State review and processing of applications prior to the 2003 ozone season.

Early credit also may increase the opportunity for the set aside to be fully subscribed for the 2003 summer ozone season. By allowing 3 or 4 years worth of projects (projects implemented in 1999 - 2000) to apply for allowances from the first allocation period, the state may achieve higher initial participation.

6.2 PLANNING FOR CREDITING EARLY ACTIONS

Crediting early actions would also allow states to develop pool sizes that more accurately reflect the level of activity that is likely to occur each allocation period. Thus, prior to the 2003 summer ozone season states would have better information to help them make an estimate for the size of the set aside pool, and would also have additional time to develop or implement procedures dealing with under or over subscription. Other advantages of the early credit option include creating incentives for actions in the interim years 1999-2002, and greater planning certainty on behalf of the applicants. Finally, crediting early actions could also provide states with an opportunity to develop their application process and gain experience crediting projects in advance of the rule. In essence, the states would have a period of years to develop procedures and review applications prior to the 2003 ozone season. This will significantly reduce the administrative burden of the program during the initial phases.

Disadvantages associated with crediting early actions flow directly from the advantages such a system provides. First, there is a possibility that the set aside pool will be oversubscribed, particularly in the first allowance period and if the size of the set-aside is small. Second, in order to process applications prior to the first year of trading, states would be required to develop the allowance crediting system and infrastructure in advance of the NO_x Budget Trading Program implementation date.

7.0 LENGTH OF AWARD

Energy efficiency and renewable energy projects result in permanent improvements in energy use and prevention of NO_x emissions. As such, EPA believes it is appropriate to award set-aside allowances to these projects for more than one year. This provides a stream of allowances and greater incentive for incremental projects to be undertaken. There are tradeoffs, however, between the length of the stream of allowances awarded to a project and the ability to maintain a sufficient number of allowances over time to provide incentive for new projects. A shorter stream of set-aside allowances provides greater availability of such allowances over time to reward new projects, but less of an incentive (due to lower total value) to undertake them. A longer stream provides more financial incentive, but limits the availability of allowances for future projects. This section explains how these factors affect the number of control periods for which projects should receive set-aside allowance awards. The length of award for previously approved projects should be balanced with the number of allowances included in the set-aside pool, so that there will be sufficient allowances to award to incoming projects.

7.1 DETERMINING THE LENGTH OF AWARD

States will have to decide how many years (meaning how many summer ozone seasons or control periods) an award for a particular project will last. That is, should the set-aside allowances for a project be issued for multiple control periods and, if so, for how many periods. Since the reductions achieved through most energy efficiency and renewable projects are persistent in nature, they are expected to provide long term air quality benefits. Thus it may make sense to award allowances on a multi-year basis instead of annually. However, States should also consider the impact the length of an allowance award will have in providing an incentive to implement energy efficiency and renewable energy projects.

Most energy efficiency and renewable projects that would be eligible for allowances under the set-aside program have positive impacts on energy consumption, and associated emission reductions, that last for several years at least and often more than ten years. While these impacts are relatively long lasting, under certain circumstances these benefits are known to lessen over time. Therefore, while allocating energy efficiency and renewable energy set-aside allowances for more than one period is appropriate, it is also necessary to re-verify the savings on an annual basis to ensure that these benefits are still being achieved, and to ensure that the level of award still corresponds to the level of air quality benefit.

One of the objectives of having an energy efficiency and renewable energy set-aside is to provide an added incentive for implementing measures that might not otherwise occur. Therefore, it is important to balance the trade off between maintaining sufficient availability of allowances over time and providing an adequate financial incentive for new projects that might not otherwise be undertaken. Longer terms for allowances provide more financial returns and therefore greater incentives to individual projects - especially ones which are long-term with large capital costs. A shorter stream of allowances provides greater availability over time to reward new projects but provides fewer incentives to undertake such projects (i.e., a longer stream of allowances presumably has higher value on the market). Given that a state's pool of energy efficiency and renewable energy allowances is likely to be fixed, it may be important to limit the length of the stream of allowances to ensure their continued availability as an incentive for future projects. Although the benefits of many energy efficiency and renewable energy projects persist for periods of 10 years or more, providing a stream of benefits for all these years may tie up too many allowances for long periods. This can affect the further development of new projects.

7.2 A THREE-YEAR ALLOWANCE STREAM

EPA recommends energy efficiency and renewable energy set-aside allowances be awarded for at least three consecutive ozone control periods, with verification of energy savings and displacements on an annual basis. An allowance lifetime of three ozone control periods (or three years) strikes an appropriate balance between the financial incentives for individual projects and the need to encourage new projects. A three-year allowance stream also takes advantage of the persistence of project savings by reducing the paper work burden on applicants as well as administrators. The three-year stream of allowances also has the advantage of providing a short turn around for the regeneration of the allowance pool maximizing the number of potential applicants. A three-year allocation is also consistent with the initial allocation period suggested by the NO_x Budget Trading Program rule, thus making coordination with a set-aside program easier.

States may consider a three-year allowance stream too short, particularly if it fails to capture all the energy savings/displacement benefits associated with a project and provides insufficient incentive for long term measures. States may therefore, decide to extend the allowance awards for some projects for a second three-year term, or for some other appropriate number of consecutive years. This may provide greater incentive for projects with high up-front costs and higher life-cycle energy savings. States should, however, have the project applicant continue to monitor and verify the savings of such projects for the second term of award, and adjust the number of allowances accordingly.

7.3 OTHER OPTIONS

State may also wish to consider the option of awarding set-aside allowances on an annual basis. The advantages of awarding set-aside allowance annually are that it may provide more certainty of the benefits achieved, and it avoids tying up set-aside allowances for several years. The disadvantage to an annual allocation system is that it requires more resources to administer.

States may also wish to consider the likely under or over subscription of the pool as a factor in determining the length of the award. States with oversubscribed set aside pools may wish to shorten award periods, while states with under-subscribed pools may wish to increase the period of award. In these cases, states are reminded that the period of the award should not be longer than the life of the project.

8.0 ADJUSTING THE SIZE OF YOUR SET-ASIDE

Because many states are likely to set a fixed pool of allowances to use as an energy efficiency and renewable energy set-aside, it is possible for the pool to be either over- or under-subscribed. Over-subscription occurs when the number of eligible applicants is greater than the number available, while under-subscription occurs when there are more allowances available than eligible applicants. There are many factors that could lead to either over- or under-subscription. This section explains how states may wish to make adjustments to the size of a set-aside after it has been implemented. The mechanism and timeliness with which states can adjust their set-aside pools may suggest whether a larger or smaller number of allowances should be set aside initially.

8.1 FACTORS AFFECTING SET-ASIDE DEMAND

Factors that affect the level of demand for set-aside allowances include providing allowance credits for projects that would have occurred in the absence of the set aside program (as part of BAU), and crediting early reductions, which will be discussed later in this section. The decision to credit early reductions and BAU projects could lead to over-subscription. However, being overly restrictive about what can be awarded allowances can tend to reduce the overall number of applications for set-aside allowances, which in turn may lead to under-subscription. In addition, over or underestimating the level of potential energy efficiency and renewable energy activity can have impacts, since the size of the set-aside may have originally been set too large or too small. As states as they gain experience implementing their set-asides, they can adjust the size of the set-aside to match their expected needs.

8.2 UNDER-SUBSCRIPTION

If the pool is under-subscribed, States could deal with the unclaimed allowances using a variety of means such as: (1) auctioning the remaining allowances to core sources or other interested parties, (2) distributing the unclaimed allowances to core sources according to the allocation scheme in current use, (3) distributing the unclaimed allowances to existing set-aside projects on a prorated basis (in addition to the allowances they originally received); and (4) retiring the unclaimed allowances. A fifth option is to allocate the unused allowances in the next summer ozone season, rather than delaying their use until the next three-year allocation period. If a state awards allowances to projects for more than two years, the allowances should be valid until the next allocation period. Using this approach, a state could either retire the unclaimed allowances for the first summer ozone season for which it is not claimed, or "lend" them to core sources in need of allowances for that particular summer ozone season. EPA recommends that under subscribed allowances be reallocated to core sources each year that they are unclaimed, for that specific ozone control period. Under this approach (the fifth option), additional applications for set-aside allowances can be received and processed to use the unclaimed allowances for the ozone control period in the next and subsequent years. This is consistent with the desire to use the set-aside to reward energy efficiency and renewable energy actions.

8.3 OVER-SUBSCRIPTION

Over-subscription of the set aside pool can also be dealt with in a number of ways. States could award allowances on a first come, first served basis. This would encourage early applications, and provide a level of certainty to the applicant once the award is made. States could allocate the shortfall by discounting the allowances from the total amount of allowances requested to accommodate all applicants. This would provide some incentive for all applicants,

although it diminishes the amount of incentive to each applicant, and the certainty each applicant has in the level of their respective award. However, if over-subscription does occur, it should be viewed as a very encouraging sign that energy efficiency and renewable activities are occurring and that there is greater demand for the set-aside. Therefore, EPA recommends that states consider expanding the set-aside for future allocation periods.

9.0 WHAT TO SUBMIT TO ESTABLISH A SET-ASIDE

In order to include an energy efficiency and renewable energy set-aside as part of the NO_x Budget Trading Program a state needs to submit three pieces of information to EPA in its NO_x SIP Call submission. First, a state must include a statement in the SIP telling EPA that it has chosen to include such a set-aside. Next, a state must include in its SIP submission the specific number of allowances that it will set-aside for energy efficiency and renewable energy projects beginning in 2003. The state must also indicate whether or not it plans to award allowances for early actions that are implemented prior to the 2003 ozone control period. Finally, the state must re-adjust its allocations to the core sources in its EGU budget by the amount that has been set-aside.

9.1 CHOOSING TO INCLUDE A SET-ASIDE

States in the SIP Call region who are participating in the NO_x Budget Trading Program have the option of including an EE/RE set-aside as part of their program. States choosing to include an EE/RE set-aside must include a statement indicating they are including it in their proposals for the NO_x Budget Trading Program SIP submissions due to EPA in September 1999.

EPA is providing the set-aside to encourage energy efficiency and renewable energy, and achieve the additional air benefits provided by these projects. Establishing a set-aside will give state energy and air officials a great opportunity to work together to take advantage of the economic and environmental benefits of energy efficiency and renewable energy as they develop their NO_x strategies. The EE/RE set-aside is another mechanism to provide flexibility to states, in addition to the new source set-aside and the compliance supplement pool, in the NO_x Budget Trading Program.

9.2 SPECIFYING A SIZE AND INTENT TO AWARD EARLY ACTIONS

One of the most important pieces of information for states to tell EPA is the number of allowances that will be included in the set-aside. In its statement for including an EE/RE set-aside in the NO_x Budget Trading Program, a state should also declare what percent of its electricity budget and the specific number of allowances it will put into the set-aside beginning in 2003. Prior to the beginning of the NO_x Budget Trading Program, this amount of EE/RE set-aside allowances will be put into a general account in EPA's NO_x Allowance Tracking System (NATS) under the name of the state official who will be administering the set-aside. The information specifying the administering state official for the set-aside can be submitted at a later date, after the September 1999 SIP submission, but before the 2003 implementation date.

9.3 ADJUSTING CORE SOURCE ALLOCATIONS

Once a state has decided upon the size of its set-aside, the state needs to adjust any initial estimates of allowance allocations for core sources proportionately so that their total allocation reflects the percentage of the aggregate emissions levels less those that have been set-aside to reward energy efficiency and renewable energy. For example, if a state were to set-aside 5 percent of its budget for energy efficiency and renewables, the initial allocations for that state's core source electricity budget would need to be adjusted by 5 percent, so that the total allocations for core sources equal 95 percent of the state's total electricity budget for NO_x. If the state is also including a new source set-aside, then the total allocation for core sources for the first three years would be 90 percent, and for subsequent periods, it would be 93 percent (due to the change in size of the new source set-aside after the third year). A state would then include

the information on the allocations of its allowances to EPA in its SIP submission, including: (1) the allocation of allowances to core sources; (2) the number of allowances in the EE/RE set-aside; and (3) any allowance allocations for the new source set-aside and/or the compliance supplement pool, as may be required in the NO_x Budget Trading Program rule.

9.4 NEXT STEPS

Once a state has filed its September 1999 SIP submission for the NO_x Budget Trading Program that includes the initial set-aside information, the next step will be to determine the specifics of other necessary EE/RE set-aside design elements. EPA will issue its recommendations for these elements in its second guidance document, entitled "Quantifying and Administering Energy Efficiency and Renewable Energy Set-Aside Allowances," in the next few months. The design elements that will be outlined in the second guidance include:

1. when the allowance awards will be made (timing of awards);
2. how and when to apply for awards, and what is needed in the application;
3. how to measure and verify results in terms of energy saved or displaced;
4. how to translate project results (energy saved or displaced) into emissions; and
5. how to direct set-aside allowance awards toward new projects which result in additional energy savings or displacements beyond business as usual energy efficiency or renewable gains (providing real reductions).

The five design elements listed above are discussed briefly in the executive summary of this guidance document. As with this first guidance, EPA will offer its recommendations concerning these additional elements, but also provide the states ample flexibility in designing these aspects of their programs. One key piece of information that EPA will need to know after states have made their decision on these last elements is how the timing of their awards of EE/RE set-aside allowances will coincide with the timing requirements for the administration of allowances from the NATS. This information will need to be provided in advance of the 2003 program implementation date, to ensure a smooth-functioning trading system.



ZINC CORPORATION OF AMERICA
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Environmental Quality Board
Rachel Carson State Office Building
400 Market Street
15th Floor
Harrisburg, PA 17101

Re: Nitrogen Oxides Allowance (25 Pa. Code Chs. 121 and 123), Proposed Amendments - 29 Pa. Bull. 1214 (March 6, 1999)

Dear Sir or Madam:

Zinc Corporation of America ("ZCA") hereby submits comments on the Environmental Quality Board's ("EQB") proposed amendments to 25 Pa. Code Chapters 121 and 123 regarding Nitrogen Oxides ("NOx") Allowance (hereinafter "Proposed Amendments"). ZCA operates zinc manufacturing facilities in Monaca, PA. ZCA's affected units under the Proposed Amendments are two 600 mmBTU/hr boilers, each of which serves a generator with a nameplate capacity of 60 MW.

On November 1, 1997, the EQB published final regulations establishing the NOx allowance requirements ("NOx Budget Rule"). These regulations allocated 241 and 204 allowances to ZCA's boilers 034 and 035 respectively. In response to the proposed NOx Budget Rule, ZCA submitted comments demonstrating that the proposed allocation to ZCA was flawed because the 1990 baseline used to determine the allocation did not account for the extended operational downtime due to malfunction suffered by Boiler 035. ZCA's account was not adjusted in response to comments. The result was a disparate allowance allocation to ZCA, since the 1990 data were not representative of normal operations.

For the following reasons, ZCA requests the EQB abandon its March 6, 1999 proposal to take away two allowances from the ZCA accounts. First, the Proposed Amendments would further penalize ZCA by removing two more allowances from ZCA's account. Given that ZCA already has been severely penalized due to an incorrect allocation in the NOx Budget Rule, the EQB's proposed reallocation will further unfairly burden ZCA as it relates to achieving compliance with the NOx Budget Rule. This burden is significant. Despite early regulatory agency cost estimates of \$1500 - \$2000 per ton to control NOx or purchase allowances, the market price for an allowance (i.e., one ton of NOx) currently is \$5600 per ton. The cost to ZCA of the Proposed Amendments, based on the current market price alone, is \$11,200, a significant cost to ZCA.

Further expounding the burden is the fact that ZCA is not a traditional utility. This is important for two reasons: 1) ZCA's contribution to ozone transport, if any, is minimal compared to that of large traditional utilities, and 2) ZCA is in the business of producing and selling zinc. ZCA's industrial utility units consist of two 60 MW generators. As described earlier, its purpose is to supply electricity to ZCA's co-located zinc manufacturing facilities. Larger traditional utilities own and operate units that produce electricity for sale to the public that are upwards of 600 MW and higher. This large difference in size, purpose, and number of electricity generating facilities clearly evidence a much larger relative impact by traditional utilities with regard to NOx emissions.

With respect to ZCA being in the zinc business, the price of ZCA products cannot be altered to account for increase costs such as NOx allowances. The price of ZCA's products are tied to the price of zinc as set by the London Metal Exchange. As such, ZCA does not have the ability to raise the price on its products to offset the cost associated with having to obtain two additional allowances. In contrast, large traditional utilities may raise their rates to recover such costs.

Second, the Proposed Amendments provide no reason for the reallocation, other than to say it is the result of an "accounting error." Without more specificity as to the nature of the accounting error, meaningful comment cannot be provided with respect to the accounting method. Information that should be provided include an explanation of the original accounting method, how and why the purported error occurred, and the reasoning behind the selected allocation scheme. For example, a pro rata reallocation may not be reasonable, depending on the relevant information. Given this glaring lack of information, ZCA questions whether the public has been given adequate prior notice and opportunity to comment.

Based on the comments provided above, ZCA requests that the EQB withdraw its proposal to lower ZCA's allowance allocation by two allowances under 25 Pa. Code Chs. 121 and 123.

Please call if you have any questions regarding the comments provided herein.

Sincerely,



Ali Alavi
Director

Environment, Health & Safety Performance



TOSCO
Trainer Refinery
4101 Post Rd
Trainer, Pa 19061

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 HARRISBURG ENVIRONMENTAL QUALITY BOARD

May 7, 1999

Environmental Quality Board
 15th Floor Rachel Carson State Office Building
 P.O. Box 8477
 Harrisburg, Pa 17105-8477

Re: 25 Pa. Code Chapter 123
 Proposed Amendments
 Written Comments

Dear Sir or Madam:

On March 6, 1999 the Environmental Quality Board published a proposed rulemaking in the Pennsylvania Bulletin titled 'Nitrogen Oxides Allowance' [25 Pa. Code Chs. 121 and 123]. Tosco Refining Company's Trainer Refinery hereby submits written comments in response to this proposed rulemaking.

Comment 1

Appendix E of the proposed rulemaking contains the list of affected sources, including County, Facility, Combustion Source Name, Point ID and Allowance. Five of the entries contained in Appendix E either have the wrong Facility designated or do not have a Combustion Source Name indicated. These five sources appear in Appendix E as follows:

<u>County</u>	<u>Facility</u>	<u>Combustion Source Name</u>	<u>Point ID</u>	<u>Allowance</u>
Delaware	BP Oil, Inc.	7 Boiler	032	[35] 33
Delaware	BP Oil, Inc.	8 Boiler	033	[56] 54
Delaware	BP Oil, Inc.		038	[187] 180
Delaware	Tosco Refinery	543 Crude Heater	044	101
Delaware	Tosco Refinery	544 Crude Heater	045	115

These five sources should appear in Appendix E as follows:

<u>County</u>	<u>Facility</u>	<u>Combustion Source Name</u>	<u>Point ID</u>	<u>Allowance</u>
Delaware	Tosco Refining Co.	7 Boiler	032	[35] 33
Delaware	Tosco Refining Co.	8 Boiler	033	[56] 54
Delaware	Tosco Refining Co.	Platformer Heater	038	[187] 180
Delaware	Tosco Refining Co.	543 Crude Heater	044	101
Delaware	Tosco Refining Co.	544 Crude Heater	045	115

Tosco Refining Company purchased the Trainer Refinery from BP Oil, Inc. on February 2, 1996. All NO_x affected sources subject to Pa Code Chapter 123 previously designated to BP Oil, Inc. were transferred to Tosco Refining Company upon the sale of the facility.

Comment 2

Two of the sources included in Appendix E were mistakenly included and should be deleted. The two sources appear in Appendix E as follows:

<u>County</u>	<u>Facility</u>	<u>Combustion Source Name</u>	<u>Point ID</u>	<u>Allowance</u>
Delaware	BP Oil, Inc.	7 Boiler	032	[35] 33
Delaware	BP Oil, Inc.	8 Boiler	033	[56] 54

These two sources should be removed because they are not "NO_x affected sources" as defined in Pa. Code, Title 25, § 121.1. These two sources are fossil fuel fired indirect heat exchange combustion units with a maximum heat input capacity less than 250 MMBtu/hour.

Confusion may have arisen from the fact that the original nameplate capacity of these boilers was 335 MMBtu/hr. However, these sources have always operated at less than 250 MMBtu/hr. Tosco Refining Company's Trainer Refinery believes that the manufacturer's determination of the capacity of these units was erroneous and misleading.

In October, 1998, Plan Approval applications were submitted to the Regional Office requesting permit-based firing limitations on these sources at 249 MMBtu/hr, consistent with the actual operation of these sources. Recent communication with the Department's permit engineer indicates that the modified permit incorporating these enforceable limitations will be finalized by May, 1999. Accordingly, Boilers No. 7 and 8 should not be listed as NO_x affected sources since the applicable plan approval will limit heat input to less than the threshold specified in the regulation.

Thank you for the opportunity to comment on this proposed rulemaking. Should you have any questions regarding our comments, please contact me at 610-364-8102.

Sincerely,
TOSCO REFINING COMPANY
TRAINER REFINERY

John J. Deemer
Environmental Engineer



PECO ENERGY

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May 6, 1999

By Overnight Delivery

Environmental Quality Board
Rachel Carson State Office Building, 15th Floor
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Harrisburg, PA 17105-8477

RE: 29 Pa.B. 1214 -1223 - Nitrogen Oxides Allowance

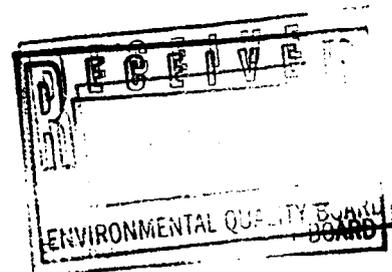
PECO Energy Company has reviewed the changes proposed by the Environmental Quality Board (EQB) to amend Chapters 121 and 123.

We wish to thank the EQB and Pennsylvania Department of Environmental Protection (DEP) for clarifying the definition of "NOx affected source" in their proposed amendment to the regulation definitions at § 121.1. We support the revised definition.

We also support the proposed changes to "Appendix E" related to PECO Energy's Falls and Moser units and wish to thank the DEP for including these units in Appendix E.

We have five minor technical revisions to request:

1. At page 29 Pa.B. 1219 please note that there should not be an "i" after the "s" in the spelling of PECO Energy's three "Moser" units. Also, the three Moser units are located in Montgomery County, not Chester County.
2. At page 29 Pa.B. 1218 please note that the facility names of the four "United States Steel Corp." Power House Boilers 3,4,5 & 6 should be changed to read "PECO Energy - Fairless Hills" to reflect PECO Energy's current ownership of these four boilers.

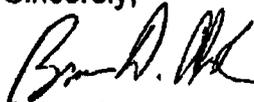


May 6, 1999
Page 2

3. At page 29 Pa.B. 1221 please expand the facility names for "Point ID" numbers 037 and 038 to read "PECO Energy - Richmond". The respective combustion source names are Unit 91 and Unit 92. The Facility names for these two sources are currently listed simply as "PECO Energy."
4. At page 29 Pa.B. 1221 please add combustion source names to the "PECO Energy -- Delaware" facility units as, respectively, "No. 71 Boiler", "No. 81 Boiler" and "No. 9 Gas Turbine".
5. At page 29 Pa.B. 1221 please add combustion source names to the "PECO Energy - Schuylkill" facility as, respectively, "No. 1 Boiler" and "No. 11 Gas Turbine".

PECO Energy appreciates the opportunity to provide these comments. Please contact me at 215-841-5687 with any questions.

Sincerely,



Bruce Alexander
Senior Environmental Project Consultant