



# **Office of Inspector General**

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## **Evaluation Report**

# **Air**

## **Open Market Trading Program for Air Emissions Needs Strengthening**

**Report No. 2002-P-00019**

**September 30, 2002**

**Inspector General Offices  
Conducting the Evaluation:**

**Office of Program Evaluation  
Southern Division**

**Regions Covered:**

**Regions 2 and 5**

**Program Office Involved:**

**Officer of Air and Radiation**

### **Abbreviations**

CEMS	Continuous Emissions Monitoring System
EPA	U. S. Environmental Protection Agency
NAAQS	National Ambient Air Quality Standards
OIG	Office of Inspector General (EPA)
OMT	Open Market Trading



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
WASHINGTON, DC 20460

OFFICE OF  
INSPECTOR GENERAL

September 30, 2002

**MEMORANDUM**

**SUBJECT:** Report No. 2002-P-00019  
Open Market Trading Program for Air Emissions Needs Strengthening

**FROM:** Kwai-Cheung Chan /s/  
Assistant Inspector General for Program Evaluation

**TO:** Jeffrey R. Holmstead  
Assistant Administrator for Air and Radiation

Attached is our final report on the Environmental Protection Agency's (EPA's) Open Market Trading (OMT) Program. The objectives of our evaluation were to determine (1) whether EPA's basis for proposing to approve selected air emissions OMT programs was adequate; (2) the extent of use of EPA-approved emissions quantification protocols and whether accurate, reliable data underlie OMT trades in these programs; and (3) the extent of EPA and state compliance assurance, enforcement, and oversight activities relative to OMT trades.

This report contains findings that describe problems the Office of Inspector General (OIG) has identified and the corrective actions the OIG recommends. This report represents the opinion of the OIG and the findings contained in this report do not necessarily represent the final EPA position. Final determinations on matters in this report will be made by EPA managers in accordance with established resolution procedures.

**ACTION REQUIRED**

In accordance with EPA Order 2750, as the action official, you are required to provide this Office with a written response within 90 days of the final report date. The response should address all recommendations. For corrective actions planned but not completed by the response date, please describe the actions that are ongoing and provide a timetable for completion. Where you disagree with the recommendation, please provide alternative actions for addressing the findings reported.

We have no objection to the release of this report to the public. We appreciate the efforts of your staff, and the staff in the regions and states we visited, in working with us to develop this report. Should you or your staff have any questions, please contact Rick Beusse, Director for Program Evaluation - Air Quality Issues, at (919) 541-5747, or John Bishop, Project Manager, at

(919) 541-1028. Additional copies of this report may be obtained from us or our website, [www.epa.gov/oigearth](http://www.epa.gov/oigearth).

## ***Executive Summary***

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The Environmental Protection Agency's (EPA's) air emissions Open Market Trading (OMT) program was created to provide sources with greater flexibility in meeting Clean Air Act requirements. The OMT program allows sources to use emission credits generated from past emission reduction efforts to meet other requirements. Credits can be held for later use, sold, transferred to another company location, or permanently retired. OMT programs are usually voluntary, involve a variety of sources, and do not have an expressly defined cap, or limit, on the amount of emissions available for trading. EPA anticipates significantly greater OMT program participation in the future.

### **Purpose**

The Office of Inspector General initiated this evaluation as a result of concerns raised by two environmental groups that EPA's OMT program contained fundamental problems. Of the three States that have applied to EPA for approval to operate an OMT program, we evaluated the two States – Michigan and New Jersey – with the most active programs.<sup>1</sup> The objectives of our evaluation were to determine:

- EPA's basis for proposing to approve selected clean air OMT programs and whether the basis is adequate.
- The extent of use of EPA-approved emissions quantification protocols<sup>2</sup> to calculate tradeable emissions credits in selected states' OMT programs, and whether accurate, reliable data underlie OMT trades in these programs.
- The extent of EPA and state compliance assurance, enforcement, and oversight activities relative to OMT trades, and whether OMT programs affect the ability of regulatory agencies to detect and/or deter noncompliance.

### **Results in Brief**

Several factors hindered the two OMT programs we reviewed from achieving their goals. Foremost among these factors were the lack of safeguards, use of data of uncertain quality, and limited regulatory agency oversight of trading activities. Many sources have opted not to participate, and the problems in one State (New Jersey) have become so significant that it has announced its intention to terminate the program.

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<sup>1</sup>According to EPA, the other State – New Hampshire – had less than 10 emissions credit transactions as of June 2001.

<sup>2</sup>Emissions quantification protocols detail the actions or activities that sources will undertake to reduce emissions below previous (historical) levels, as well as the type and quality of the measurement method(s) that will be employed.

## OMT Programs Lacked Safeguards

The Michigan and New Jersey OMT programs lacked key safeguards primarily because EPA's basis for proposing approval of these programs was non-binding guidance documents instead of regulations. As a result, the two EPA Regions did not require the two States to implement all the safeguards that EPA's guidance documents indicate are needed to minimize the risk of invalid and questionable credits. Examples of missing safeguards follow.

- *Opportunity for public comment on proposed trades not provided.* Although the public is supposed to be able to not only see proposed trades in advance but also have the opportunity to participate in the decisionmaking process, neither the Michigan nor New Jersey OMT programs provided the opportunity for public comment on proposed trades.
- *Shutdown credits allowed in one program.* No credits are to be allowed for facilities that shut down their operations in one State because of the difficulty of ensuring that these activities are not reinstated in another State. Nonetheless, shutdown credits comprised about 23 percent of Michigan's total OMT credits, and about 80 percent of the State's volatile organic compound emissions credits.

EPA officials explained that EPA did not issue OMT regulations because, in response to EPA's only attempt at issuing regulations, State officials expressed concern that such regulations would impede their flexibility in designing OMT programs. In its response to our draft report, EPA reiterated its support for use of non-binding guidance, but we continue to believe that the safeguards in the Economic Incentive Program Guidance need to be required through regulations.

## Uncertain Data Quality Underlies OMT Trades

Accurate, reliable, and complete emissions data are essential to the success of EPA's OMT program. However, we noted the following factors that contributed to uncertain quality of the OMT data underlying trades we reviewed:

- *Approved quantification protocols not used.* Our reviews of 84 randomly selected trades in Michigan and New Jersey disclosed that no EPA- or State-approved quantification protocols were used to calculate credits. Not using such protocols increases the risk of credits being invalid and unreliable.
- *Many emissions measurement methods questionable for trading.* Better quality data is generally needed to calculate OMT credits than to assure facility compliance with emissions standards. Compliance measurements only need to ensure that emissions levels have not been exceeded, while OMT measurements need to be more precise to calculate the amount of extra emissions saved. Continuous emissions monitors produce data sufficient for trading purposes, but

only 11 of the 56 credit generation and use transactions we reviewed used such monitors to calculate OMT credits; the other 45 used their compliance methods.

### **Minimal Compliance Assurance, Enforcement, and Oversight Activities Contributed to Risks of Questionable Trades**

EPA performed little compliance assurance, enforcement, or other oversight activities of the two OMT programs, and yet – in the course of carrying out other, non-OMT initiatives – questionable credits were identified by EPA and the OIG.

- *Questionable credits identified by EPA.* Although not targeted for its OMT activities, a New Jersey utility – PSEG – was inspected by EPA and alleged to have violated clean air requirements by modifying two plants without obtaining required permits that would have established lower compliance levels. With lower levels, these plants' emission reduction credits would not have been as great as initially claimed. EPA and PSEG reached a settlement in January 2002 wherein PSEG agreed to retire about 18,600 tons of pollutants it had generated. The eliminated credits – valued at over \$16 million – represented about 90 percent of the credits available for trade in the New Jersey program.
- *Invalid credits identified by OIG.* Our analysis of selected New Jersey trades identified another utility – Conectiv – that used cooler, off-season ozone credits to meet the warmer, more polluted, ozone season requirements, a violation that resulted in the firm paying a \$140,000 fine. The inappropriate use of these credits could have been detected if the State had reviewed the data.

Although EPA's analysis of 10 early trades in New Jersey identified concerns with the validity of some credits, EPA has not targeted OMT activities for additional oversight to reduce the risk of invalid credits. In our opinion, a risk-based approach to targeting OMT facilities could lessen the likelihood of trades involving invalid emissions credits.

*Michigan Oversight Detected Improper Credits.* Michigan examined the data underlying its trades in order to reduce the risk of improper trades. As a result, Michigan identified two invalid trades before their data were entered into the OMT registry. New Jersey did not conduct such reviews of credits because their program was designed to be self operating, with no State reviews. Table 2.2 (in Chapter 2) provides a detailed comparison of the approaches to oversight in the New Jersey and Michigan OMT programs.

## **Recommendations**

We are making a number of recommendations to the Assistant Administrator for Air and Radiation, including that EPA:

- Develop and propose Federal regulations for OMT programs.

- Ensure that shutdown credits are not allowed to be traded in OMT programs.
- Require the use of EPA- or state-approved emissions quantification protocols prior to allowing trades to occur.
- Develop and require the use of a risk-based targeting approach for Federal and state compliance assurance, enforcement, and oversight of OMT trades.

## **Agency and State Comments and OIG Evaluation**

In his September 26, 2002, response to our draft report, the EPA Deputy Assistant Administrator for Air and Radiation stated that this OIG evaluation will help EPA strengthen the OMT program. He also noted that many of the issues pointed out in our report are common to the broader air pollution control program and deal with issues that EPA has been struggling with for several years. He also suggested that this report provide additional information on the extent that these issues occur in other parts of the air pollution control program. While we agree that these issues may be prevalent in other parts of this program, the scope of our work did not include identifying the existence or prevalence of these issues in the broader air pollution control program.

The Deputy Assistant Administrator also provided specific comments and clarifications which have been incorporated into the final report, as appropriate. The Deputy Administrator's complete response can be found in Appendix 1.

Michigan and New Jersey generally agreed with the report and suggested technical clarifications to the report which have been incorporated, as appropriate. Michigan's full response can be found in Appendix 2; New Jersey's full response can be found in Appendix 3.



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# Chapter 1

## Introduction

### Purpose

The Office of Inspector General (OIG) initiated this evaluation as a result of concerns raised by the Public Employees for Environmental Responsibility and the New Jersey Chapter of the Sierra Club. In a February 2001 letter to the OIG, these groups expressed concerns that the Environmental Protection Agency's (EPA's) Open Market Trading (OMT) program for air emissions contained fundamental problems related to quantifying emissions and enforcing Clean Air Act requirements. Also, they questioned whether concerns raised in four prior OIG audit reports, issued from 1996 to 1998, had been effectively addressed in EPA's OMT program.

***Environmental groups have raised concerns about the Open Market Trading Program.***

The objectives of our evaluation were to determine:

- EPA's basis for proposing to approve selected air emissions OMT programs and whether the basis is adequate (given the applicable findings and recommendations of the four OIG reports issued since 1996).
- The extent of use of EPA-approved emissions quantification protocols to calculate tradeable emissions credits in selected states' OMT programs; and whether accurate, reliable data underlie OMT trades in selected states' OMT programs.
- The extent of EPA and state compliance assurance, enforcement, and oversight activities relative to OMT trades, and whether OMT programs affect the ability of regulatory agencies to detect and/or deter noncompliance.

### Background

The 1990 Clean Air Act encourages the use of incentive-based approaches to controlling air pollution due largely to the increasing cost of achieving emissions reductions at some facilities. One approach, known as emissions trading, is to allow facilities whose cost of reducing emissions is comparatively low to sell emission credits to other facilities that have higher costs for reducing the same amount of pollution. Properly implemented, according to EPA, this approach allows an area to meet its emission reduction target while reducing the overall cost to industry.

EPA’s Economic Incentive Programs, which include programs for emissions trading, have been increasingly promoted as a cost-effective means of achieving environmental goals. According to EPA, emissions trading offers regulated sources greater flexibility in meeting Clean Air Act requirements by allowing alternative and often more economical means of achieving regulatory compliance. There are three main categories of emission trading programs, as shown in Table 1.1:

**Table 1.1: Three Main Categories of Emission Trading Programs<sup>3</sup>**

<b>Cap-and-trade programs</b>
An overall limit is defined for a specified group of participants who are mandated to operate, collectively, within that limit, or cap. Participants may sell excess emission credits gained through additional emission reductions actions, or purchase such emission credits from participating sources.
<b>Emissions offset programs</b>
These are required for new and expanding sources in nonattainment areas. These sources are required to purchase sufficient emission credits from other sources to offset environmental impacts.
<b>Open Market Trading</b>
A more recent program, open market trading allows sources to use emission credits generated through past emission reduction efforts to meet current or future requirements. Facilities can purchase emission credits rather than install costly emission control equipment. Credits can be held for later use, sold, transferred to another company location, or permanently retired. In contrast to cap-and-trade programs, OMT programs are usually voluntary, involve a variety of different industries, and do not have an expressly defined cap, or limit, on the amount of emissions available for trading.

Since the OMT program is a discretionary program, sources are not forced to participate, but may do so if the State Implementation Plan under which they operate has been approved by EPA. A State Implementation Plan represents the detailed control strategies for bringing nonattainment areas into compliance or ensuring that attainment areas maintain compliance. OMT programs are intended to provide an innovative approach to emissions reductions and provide flexibility in meeting compliance requirements. For example, in lieu of strict compliance with Reasonably Available Control Technology requirements and other permit limits, facilities may use credits purchased under the OMT program to release more emissions than they would otherwise have been allowed to release. In theory, the purchased emissions credits have been generated from extra emissions reductions activities that occurred earlier.

Although open market trading programs have not been widely used to date, EPA anticipates significantly greater OMT program participation in the future. According to

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<sup>3</sup>There are a number of variations of emissions trading programs related to these three categories.

agency officials, program participation will likely increase in coming years as the costs of industry compliance rise due to states developing ever more stringent control strategies to bring nonattainment areas into attainment.

***OMT Applies to Five Principal Air Pollutants***

Under the Clean Air Act, EPA establishes air quality standards for selected pollutants to protect public health and the environment. Known as National Ambient Air Quality Standards (NAAQS), EPA has set such air quality standards for six principal air pollutants (also referred to as criteria pollutants). Under the 2001 Economic Incentive Program guidance, only five of the six NAAQS criteria pollutants should be included in OMT programs, as shown in Table 1.2:

**Table 1.2: NAAQS Pollutants That May Be Traded in OMT Programs**

Pollutant	Description
Carbon Monoxide	Colorless, odorless gas that at elevated levels is most serious for those with cardiovascular disease. Most carbon monoxide results from motor vehicle and non-road vehicle exhausts.
Nitrogen Dioxide	Reddish-brown, highly reactive gas that at elevated levels affects the respiratory system. A major source is high-temperature combustion operations such as automobiles and power plants.
Ozone	Ozone is formed when its precursor pollutants – nitrogen oxides and volatile organic compounds – combine in the presence of sunlight. At higher emissions levels, ozone contributes to respiratory problems. Nitrogen oxides are emitted by motor vehicles and power plants; volatile organic compounds by motor vehicles, chemical plants, and other industrial sources. Ozone is the most wide-spread and persistent air quality program in the United States.
Particulate Matter	Coarse particulate matter is emitted directly into the atmosphere from sources, such as dust from roads, or as a result of wood combustion. Particulate matter is associated with aggravation of respiratory conditions, such as asthma.
Sulfur Dioxide	Sulfur Dioxide results mostly from fuel consumption at coal-fired power plants. High concentration results in breathing impairment in sensitive populations; longer exposure can cause respiratory illness.

EPA’s Economic Incentive Program indicated that the sixth criteria pollutant – lead – should not be traded because, according to EPA, it has many properties similar to toxic air pollutants and was also considered an environmental equity concern. Additionally, EPA’s January 2001 Economic Incentive Program guidance does not include trading of air toxics, except those toxics already contained in volatile organic compounds. Such volatile organic compounds that contain air toxics should only be traded under certain limited circumstances and are subject to additional risk reducing controls.

***OMT Operating Principles***

There are three fundamental principles that apply to all EPA Economic Incentive Programs, including air emissions OMT programs:

- Integrity
- Equity
- Environmental benefit

Table 1.3 presents those principles and additional criteria that OMT programs, by virtue of being Economic Incentive Programs, must meet.

**Table 1.3: Fundamental Principles for OMT Programs**

Principle	Key Criteria	Definition
Integrity	Surplus	Traded emissions are not otherwise relied on to meet State Implementation Plan or other state air quality requirements
	Quantifiable	Traded emissions must use emissions measures that are reliable and replicable
	Enforceable	Trading information must be independently verifiable such that the liable party is identifiable and accountable for violations
	Permanent	Source achieves extra emissions reductions over a period of time and the state ensures that no emission increases occurred over the same period of time
Equity	Equal protection	No community or segment of the population receives a disproportionate share of a program's benefits, nor do they receive disproportionate adverse impacts from emissions shifts or foregone emission reductions
Environmental Benefit	Demonstrated Improvement	OMT programs must result in emissions reductions at least 10 percent lower than would have been achieved if the source complied directly with emissions standards

Source: "Improving Air Quality with Economic Incentive Programs," EPA-452/R-01-001, Jan. 2001.

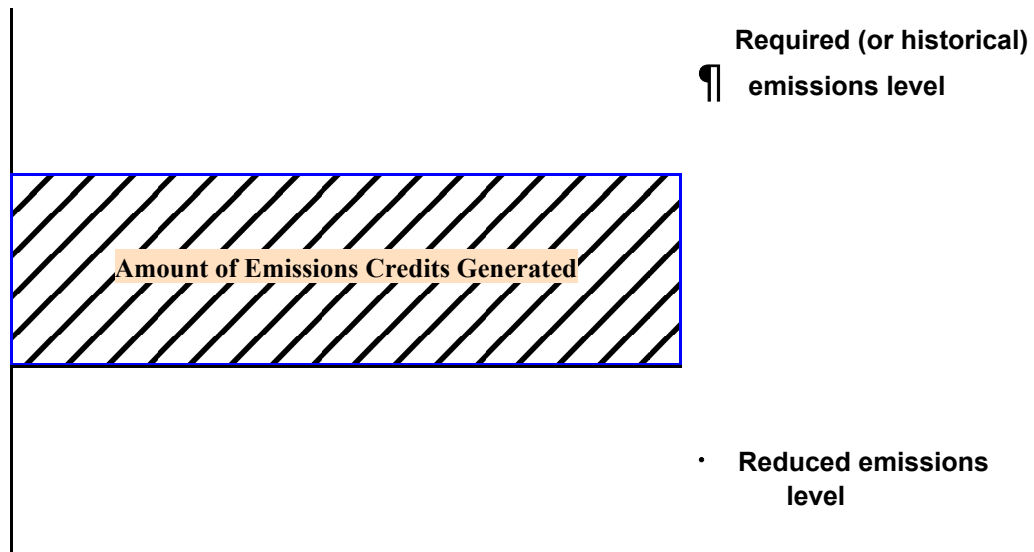
We concentrated our review on EPA and state agency implementation of two of the fundamental principles above – integrity and environmental benefit. Evaluation of the equity principle is being conducted in a separate OIG review. For the issues we found related to the integrity and environmental benefit principles, Chapter 2 contains a discussion of key OMT program safeguards, including emission quantification protocols (quantifiable) and shutdown credits (surplus, demonstrated improvement). Chapter 3 contains a discussion of protocols, emission measurement methods, data quality, emissions verification, and OMT registry review (surplus, quantifiable). Chapter 4 contains a discussion of compliance assurance and enforcement issues (enforceable, permanent, demonstrated improvement).

In addition to these fundamental emission trading program principles, OMT programs must also specify the quality of the data that will be needed to provide reasonable assurance that program goals are met and that valid trading decisions are made. Known as data quality objectives and required by EPA Order 5360.1, to be useful such data needs to be defined using five key attributes – precision, accuracy, completeness, representativeness, and comparability. Chapter 3 provides more information on the data quality objectives process.

### ***Emission Quantification Protocol Pivotal to Effective OMT Programs***

Emissions quantification protocols provide an in-depth description of the actions that a facility plans to take to reduce emissions beyond their required levels, as well as the measurement method that will be employed to accurately measure both their historical emissions levels and their new emissions levels after the changes are made. Specifically, if a facility has achieved a reduced emission level, the difference between that new level and the required (or historical actual, whichever is lower) emission level represents the amount of OMT emissions credits generated, as shown in the following:

**Illustration 1.1: Amount of credits generated from reducing emissions below required levels**



### ***Process for Certifying OMT Credits***

EPA guidance calls for OMT participants to file three key certifications or notices with the state involved:

- ***Certification of generation:*** To be submitted to the state by sources that generate OMT credits. These certifications should be submitted within certain time frames or before certain actions are taken.

- **Notice of intent to use:** To be filed with the state by a source wishing to use OMT credits, at least 30 days before the start of the intended use. These notices are to be made publicly available to allow citizens the opportunity to understand the impact of OMT activities on their communities.
- **Certification of use:** To be filed by all OMT participants that have used OMT credits, no later than 90 days after the end of the use period or 1 year after the start of a source compliance period for which credits are used, whichever is sooner. These certifications are also to be made publicly available.

EPA guidance also calls for state OMT programs to incorporate a “tracking system” to track the generation and use of emission reductions, help ensure compliance, target enforcement resources, and conduct periodic OMT program performance audits. The guidance calls for state OMT tracking system information to be readily available to the public to allow it to easily and accurately calculate the emissions of each participating source or source category.

### **Current Status**

As of August 2002, only three states had applied to EPA to have OMT programs approved, as shown in Table 1.4:

**Table 1.4: Status of OMT Program Approvals (August 2002)**

State	EPA Region Evaluating Proposal	Date EPA Proposed Approval	Current Status
Michigan	Region 5	February 7, 2001	Under EPA review
New Hampshire <sup>4</sup>	Region 1	February 7, 2001	Under EPA review
New Jersey	Region 2	January 9, 2001	Under EPA review <sup>5</sup>

While other states have emissions trading programs that fall under the categories of cap-and-trade or emissions offset programs, only these three have developed OMT programs that have been submitted to EPA for approval as State Implementation Plan revisions. Once EPA evaluates the state’s submittal, the Agency may reject the application, work with the state to improve the application, or publish a notice of intent to approve the state’s application for a State Implementation Plan change to allow the new program. In accordance with the notice-and-comment rulemaking process, EPA must evaluate and respond in the record to all comments received during the open public comment period on the envisioned changes. None of the three OMT programs had received final approval from EPA as of August 2002.

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<sup>4</sup>According to EPA, New Hampshire had less than 10 OMT credit transactions as of June 2001; thus this state was not included in our evaluation scope.

<sup>5</sup>New Jersey has since proposed terminating its OMT program.



In response to EPA's June 2002 letter concerning New Jersey's State Implementation Plan revision related to its OMT program, in August 2002 New Jersey stated its intent to terminate its OMT program. EPA and New Jersey have continued to discuss the impact of the termination of New Jersey's OMT program and the approach to be used in bringing sources that have been using OMT credits into compliance with underlying requirements. These letters, including EPA's most recent letter, are found in Appendices 10, 11, and 12.

Details on the Michigan and New Jersey OMT programs, including how they compare to EPA's Economic Incentive Plan Guidance, are in Appendix 4.

## **Scope and Methodology**

We conducted evaluation fieldwork in the Michigan Department of Environmental Quality, hereafter referred to as Michigan, and in the New Jersey Department of Environmental Protection, hereafter referred to as New Jersey; in EPA Region 2 (responsible for overseeing New Jersey) and EPA Region 5 (responsible for overseeing Michigan); EPA's Headquarters Air and Enforcement offices; at selected environmental groups and industry associations, and at four companies participating in the OMT programs in Michigan and New Jersey. Michigan and New Jersey were selected for review because (1) EPA staff indicated that these States had the most active OMT programs; (2) both States had already submitted State Implementation Plan revision requests to EPA that requested Federal approval of their OMT programs; and (3) EPA had allowed these States to operate OMT programs for over 5 years under EPA's enforcement discretion policy, such that both States had years of implementation data and experiences available for review.

We reviewed a randomly selected group of 42 trades in Michigan and 42 trades in New Jersey (14 emissions credit generations, 14 transfers of credits, and 14 credit uses in each State). These were selected from a universe of 792 trades (451 in Michigan and 341 in New Jersey) and stratified into the above categories to ensure that we examined the critical points in emissions trading transactions.

Since OMT program issues related to the fundamental principle of equity are being addressed in a separate OIG evaluation, OMT equity issues were not included in our evaluation scope. We conducted our evaluation generally in accordance with the *Government Auditing Standards* issued by the Comptroller General of the United States. There was a scope limitation related to full access to New Jersey records of OMT activities. Further details on our scope and methodology, including the scope limitation, are in Appendix 5. Details on our sampling methods and results are in Appendix 6.

## **Prior Audit Coverage**

Four prior OIG reports addressed issues salient to the OMT program and were considered during our evaluation:

- ***“EPA’s Development of Its Proposed Open Market Trading Rule”*** (Report No. E1KAB5-01-0126-6400046, dated March 28, 1996): This report addressed the need for EPA to improve its OMT program and its control over trades through strengthening the emission quantification protocol process, by developing source specific protocol development guidance, actual protocols, or a nationwide database of approved protocols for general access.
- ***“Emission Factor Development”*** (Report No. 6100306, dated September 30, 1996): This reported that emission factors did not produce reliable emission measurements for individual facilities, and that steps to improve the reliability of the emission factors were needed. This report noted, “the need for reliable emission factors will be critical to the success of open market trading programs.”
- ***“The Effectiveness and Efficiency of EPA’s Air Program”*** (Report No. E1KAE4-05-0246-8100057, dated February 27, 1998): This addressed the need for additional resources to develop and improve emission factors.
- ***“Consolidated Report on OECA’s (Office of Enforcement and Compliance Assurance’s) Oversight of Regional and State Air Enforcement Programs”*** (Report No. E1GAE7-03-0045-8100244, dated September 25, 1998): This pointed out inconsistent and/or inadequate state identification and reporting of Clean Air Act violations and the need for adequate EPA oversight of state identification and reporting of violations (inadequate identification and reporting of violations could impact OMT compliance assurance and enforcement efforts).

## Chapter 2

### OMT Program's Success Hindered by Lack of Regulations

The fact that EPA issued non-binding guidance for OMT programs instead of regulations hindered the program's opportunity for success. Further, key provisions of the guidance provided were not followed. Many sources have opted not to participate in the OMT programs, and problems were so significant that one of the States that initiated the program (New Jersey) has announced its intention to terminate its OMT program. EPA did not issue OMT regulations because in 1996, in response to EPA's only attempt at issuing OMT regulations, state officials had expressed concern that a single set of regulations for all states would impede their flexibility. As a result of the lack of regulations, safeguards intended to protect the public have not been consistently applied, and the risk of invalid and questionable credits being traded was increased.

#### **EPA Opted For Guidance In Lieu of Regulations**

In 1995, EPA proposed an OMT Rule to provide a model that states could use to expedite approval of state programs for open market trading of emissions. This was designed to be a voluntary OMT program. However, during the comment phase on the proposed rule, several states contended that the model was too restrictive and they would not use it. They indicated that the rule did not provide states with enough flexibility to meet their sometimes unique emissions trading needs.

As a result, in lieu of the OMT Rule, EPA opted to develop its Economic Incentive Program guidance, to be used not only for OMT programs but for other Economic Incentive Programs as well. The guidance was finalized in January 2001. It was also EPA's intent to use this guidance in assessing the programs for approval. The guidance provides a framework for developing and approving flexible programs designed to achieve environmental benefits at less cost, including OMT programs. However, neither the states nor EPA Regional Offices are required to follow the guidance.

#### ***Guidance Lists Various Safeguards***

Although EPA's Economic Incentive Program guidance is non-binding, if correctly followed and implemented, the guidance provides for many safeguards that could help regulators achieve the goals of the OMT program and minimize the risk of invalid trades. Key provisions of the guidance are shown in Table 2.1:

**Table 2.1: Key Provisions of EPA’s Economic Incentive Program Guidance**

Provision	Description
Approved Quantification Protocols Needed for All Trades	EPA approval of OMT emission quantification protocols is expected. These protocols provide the plan that describes the technical procedures an emitting source uses to calculate the amount of emissions/emission reductions associated with OMT program credit transactions.
Meaningful Public Participation Key to Effective OMT Programs	Effective public participation is a basic tenet of the Clean Air Act, and includes access to key information and the opportunity to influence decisionmaking. The public is supposed to be able to not only see proposed trades in advance but should have the opportunity to participate in the decisionmaking process “in a meaningful way.” <sup>1/</sup>
Shutdown Credits Discouraged	The guidance states that OMT credits cannot be created through shutdown of facilities. However, because the OMT program is voluntary, states may include shutdown credits in their programs. EPA was concerned that a facility may shut down in one state, generate and sell credits, but then relocate their operations to other states.
Limits Placed on Types of Pollutants Traded	Under the guidance, only five of the NAAQS criteria pollutants can be included in OMT programs: carbon monoxide, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide. The sixth criteria pollutant – lead – is not to be traded, according to the guidance.
Hazardous Air Pollutant Trading Subject to Additional Controls	The guidance recognizes the additional risk that accompanies trading volatile organic compounds that may contain hazardous air pollutants. The guidance calls for state OMT programs to consider options for prevention/mitigation of unacceptable impacts from volatile organic compound transactions involving hazardous air pollutants.
Additional Monitoring, Record Keeping, and Reporting Procedures Urged	The guidance calls for state OMT programs to develop monitoring, record keeping, and reporting procedures to help ensure that credit participants are meeting OMT program requirements. These procedures are needed to enable states to determine OMT compliance and whether enforcement actions are required. OMT programs should be evaluated, at a minimum, every 3 years, with the results of the evaluation provided to EPA.

<sup>1/</sup> Economic Incentive Program Guidance stressed public participation for volatile organic compound trades.

***Guidance Not Basis for Approving Michigan, New Jersey OMT Programs***

While EPA intended the 2001 Economic Incentive Program Guidance to be the basis for approval of OMT programs, this has not been the case for the New Jersey and Michigan OMT programs. This was because these States submitted their State Implementation Plan revision requests prior to the finalization of the January 2001

guidance. Instead, EPA evaluated these programs based on three documents existing before the January 2001 guidance was issued:

- The 1994 Economic Incentive Program Rule.
- The 1995 proposed Rule for OMT programs, which EPA never finalized.
- An Agency position presented in a March 10, 1998, letter from the Office of Air and Radiation to Congressman Thomas J. Bliley, discussing additional OMT program development policy. In this letter, EPA stated it would work with the states to develop OMT programs tailored to their individual circumstances, with the 1995 proposed OMT Rule used as overall guidance.

EPA Regions 2 and 5 did not ask New Jersey and Michigan, respectively, to revise their State Implementation Plan submittals to reflect EPA's latest thinking regarding the safeguards needed for OMT programs. Instead, these Regional Offices determined it would be better to approve the States' existing programs and then work with the States in future years to improve any areas of concern. Specifically:

**New Jersey:** This State submitted a State Implementation Plan revision request to EPA Region 2 in 1998. EPA Region 2 officials said they used the three documents discussed above to evaluate New Jersey's proposed revision, particularly the 1994 rule. Rather than require New Jersey to meet the final 2001 guidance to obtain Federal approval, EPA said it would notify New Jersey of any deficiencies in the OMT program 18 months after the final Economic Incentive Program Guidance was issued. However, EPA Region 2 staff acknowledged that it is generally easier to get states to make changes before rather than after a State Implementation Plan is approved.

**Michigan:** This State originally submitted a State Implementation Plan revision request to EPA Region 5 in 1996. Region 5 proposed approval of Michigan's revision in 1997 based on the 1994 rule and 1995 proposed rule noted above. Michigan revised its original submission to address Region 5 concerns from 1997, and resubmitted the request in 1999. EPA evaluated the 1999 resubmission with the same criteria as the 1996 submission, with the addition of the expanded Agency policy noted in the March 10, 1998, letter to Congressman Bliley. Similar to Region 2, Region 5 personnel said they believed they could have Michigan address any deficiencies in their OMT program after their State Implementation Plan was approved.

## Key Provisions of 2001 Guidance Not Followed In Designing or Reviewing OMT Programs

We found that key provisions of the 2001 guidance were not followed in designing or reviewing the two States' OMT programs, specifically regarding the use of protocols and ensuring that the programs contained other key safeguards. A comparison of key provisions called for by EPA's Economic Incentive Program guidance with the practices in the New Jersey and Michigan OMT programs follows.

**Table 2.2: Comparison of New Jersey and Michigan OMT Programs  
with EPA's Economic Incentive Program Guidance**

EPA Economic Incentive Program Guidance	New Jersey	Michigan
Program guidance calls for EPA approval of quantification protocols. None issued to date.	No protocol approval required. Protocols included in third party verification.	No protocol approval required. State review includes protocols.
Program guidance calls for emissions credit registry; does not address when credits must be verified.	Credits not verified prior to entry in Registry; third party verification required prior to use of credits.	State completeness review conducted prior to credits being entered onto Registry.
Program guidance allows unlimited lifetime for credits.	Credits have unlimited lifetime.	Credits have a 5-year lifetime.
Program guidance does not allow shutdown credits.	Shutdown credits not allowed.	Shutdown credits allowed.
No EPA involvement in documentation or data review except for proposed State Implementation Plan revisions.	No State involvement in reviews or documentation except for proposed State Implementation Plan revisions.	State performs documentation and data reviews and maintains documentation.
Program guidance calls for trading information to be available to the public.	Information on credit generation available only after credits entered in Registry. Contractor for State shut down Registry. State recently added limited information to State website.	Information on credit generation available only after credits entered in Registry. Registry information available on State web site.
Guidance does not require public comment on trades.	No opportunity for public comment on trades.	No opportunity for public comment on trades.
Guidance does not require EPA compliance monitoring.	Field inspectors have minimal involvement in program.	Field inspectors are consulted as part of State completeness review, if necessary.

<b>EPA Economic Incentive Program Guidance</b>	<b>New Jersey</b>	<b>Michigan</b>
No EPA enforcement oversight since no Federally approved programs.	State enforcement oversight non-existent unless situation brought to their attention.	State enforcement oversight minimal.
Program guidance calls for program evaluation every 3 years.	No formal OMT program evaluation or audit since State program began in 1996.	Program evaluation completed. Report in draft.

***OMT Programs Did Not Use EPA-Approved Quantification Protocols***

An EPA Office of Air Quality Planning and Standards official noted that it was not anticipated that EPA Regional Office staff would review emissions quantification protocols, even though the 2001 Economic Incentive Program Guidance indicated that this EPA review would be done. Contrary to that guidance, the requirement that emission quantification protocols be approved by EPA is not a provision in the New Jersey OMT program, despite concerns with the quality of quantification protocols being used in New Jersey. For example, EPA Region 2 reviewed 10 quantification protocols submitted by New Jersey as a part of its 1998 OMT State Implementation Plan revision request, and found deficiencies in all 10 of the protocols. In the opinion of New Jersey’s Environmental Commissioner, the lack of such safeguards has contributed to the implementation problems that the New Jersey program has experienced.

The Michigan program also does not require EPA approval of emission quantification protocols prior to trading. However, in practice, the Michigan completeness review of OMT credit transactions does include a State review of quantification protocols. Further details on protocols are in Chapter 3.

***Public Participation Process Ineffective***

The public is supposed to have the opportunity to participate in the OMT program decisionmaking process “in a meaningful way,” under the public participation requirements of the Clean Air Act. From our random sample of 84 transactions in New Jersey and Michigan (from a universe of 792 transactions in both States), we found no evidence of public participation in OMT program actions. The information that the public could obtain from the New Jersey OMT program registry did not include the credit generation strategy nor the emissions credit calculation procedures necessary for the public to have meaningful input into the decisionmaking process.

Additionally, during the course of our review, the limited information that had been available via the Internet was no longer available when New Jersey’s registry contractor ceased operations in September 2001. An alternative for providing

information to the public regarding New Jersey trades provided only listings of credit transactions. Additional information on the New Jersey registry problems are in Chapter 3. Michigan's OMT program also does not include key public participation requirements, as mandated by the Clean Air Act. While the Michigan registry does provide some information about the emissions credit generation strategy, it does not address emissions credit calculation procedures, instrumentation, or data quality.

### ***Shutdown Credits Allowed In Michigan OMT Program***

The New Jersey OMT program does not allow the generation of emission credits through facility shutdown activities. However, Michigan does allow the generation of credits through facility shutdown activities, even though EPA's 2001 Economic Incentive Program Guidance for OMT programs specifically prohibits shutdown credits. In our sample of 42 transactions for Michigan, we found that 7 generation and use transactions included shutdown credits (6 of the transactions involved credits generated and 1 involved credits used). Shutdown credits are problematic because, while a facility may shut down in Michigan and generate credits, the facility may relocate operations to a nearby state where emissions may potentially increase, negating the effect of the reduced emissions in Michigan<sup>6</sup>. We did not attempt to determine whether firms that generated shutdown credits reinstated operations in other states.

Due to the precedent-setting nature of using shutdown credits for OMT programs, we sent a memorandum to the EPA Assistant Administrator for Air and Radiation to reconsider approving Michigan's use of shutdown credits (see Appendix 7). Michigan was using shutdown credits because that State had developed its OMT program prior to the 2001 Economic Incentive Program Guidance. Approximately 23 percent of the generated credits listed in Michigan's OMT Registry, and 80 percent of the volatile organic compound emission credits generated and listed in the Registry, have resulted from shutdowns.

In its response to the draft report, EPA pointed out that Michigan has taken actions to minimize the potential negative impacts of the use of shutdown credits. EPA noted that the majority of shutdown credits generated under Michigan's program to date have already expired or been retired voluntarily. Thus, EPA believes that it is unlikely that shutdown credit use in the State of Michigan will lead to air quality problems. Nonetheless, in its response to the draft report, EPA noted that if Michigan's program is approved with the shutdown provision allowed, it intends to require the state to amend its program within 3 years of final approval to disallow the further use of shutdown credits.

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<sup>6</sup>According to EPA, shutdown credits do not belong in the OMT program because the concept of OMT is to generate credits by overcontrolling emissions, not by shutdowns.



***Lead Credits Generated in Michigan OMT Program***

Lead is not allowed to be included in the credit transaction activities of the New Jersey OMT program. However, Michigan’s program allows lead to be a part of the OMT program, although the 2001 Economic Incentive Program Guidance specifically states lead should not be included in Economic Incentive Programs. Again, this occurred because the Michigan OMT program was developed prior to the 2001 guidance. In commenting on our draft report, EPA agreed that lead should not be traded in OMT programs and stated that the Agency is prepared to ask Michigan to remove lead as a tradeable commodity from their OMT program.

**Trading Activities Limited by Lack of Federal Approval**

State environmental officials in both New Jersey and Michigan noted that the lack of Federal approval of their OMT programs for more than 3 years hindered operations of the programs. New Jersey has been in EPA’s review process since 1998 and Michigan since 1996. Additionally, EPA pointed out that, in addition to the lack of Federal approval, other reasons have also contributed to the limited use of OMT programs to date. These other reasons included low demand for short term emissions reductions, such as those provided under OMT programs, and the limited list of allowable uses for emissions credits. Nonetheless, our work indicated that the lack of Federal approval was a significant contributing factor to the limited trading activities in the two states reviewed.

**New Jersey:** New Jersey officials said that the lack of Federal approval of the OMT program made potential users of the program hesitant to participate. New Jersey presented the following credit activity information (see Table 2.3) concerning OMT program operations, from its beginning in 1996 through September 2001, the last month the registry was operational. Of the six NAAQS criteria pollutants, New Jersey only included the two precursor pollutants for the ozone criteria pollutant in its OMT trading program.

**Table 2.3: New Jersey OMT Program Activity, 1996 to September 2001**

Pollutant	Credits Generated (in tons)	Credits Used (in tons)	Credits Retired (in tons)
Nitrogen Oxide	35,000	1,560	855
Volatile Organic Compounds	980	330	210

The OMT numbers presented above came into question in the spring of 2002, after a \$337 million settlement with the largest generator of credits in New Jersey was signed. In early 2002, EPA, the U.S. Department of Justice, and the State of New Jersey entered into a settlement agreement with PSEG Fossil, LLC, a New Jersey utility that participated in the OMT program. Allegedly, PSEG had made

modifications at two of its facilities where OMT credits were generated, which should have triggered facility permit revisions and additional emissions controls that would have resulted in lower emissions limits. However, with lower emission limits, the number of OMT credits that could have been generated would have been significantly less. As a result of this settlement, PSEG agreed to retire 372,380 generated credits (about 18,600 tons), or more than 90 percent of the generated credits that were available for use in the New Jersey OMT registry in January 2002. The eliminated credits were valued at over \$16 million. Details of the PSEG settlement are in Appendix 8.

**Michigan:** Michigan officials also noted that the lack of Federal approval of the Michigan OMT program affected the extent of participation in this program from the beginning of the program in 1996 through July 2002, as shown in Table 2.4:

**Table 2.4: Michigan OMT Program Activity, 1996 to July 2002**

Pollutant	Credits Generated (in tons)	Credits Used (in tons)	Credits Retired (in tons)
Nitrogen Oxide	55,057	1,710	33,039
Volatile Organic Compounds	6,976	209	3,253
Carbon Monoxide	3,287	74	342
Sulfur Dioxide	12,476	0	1,671
Particulate Matter	443	0	76
Lead	0.3	0	0

The Michigan credit retirement accounts include the 10 percent of credits retired (“for the benefit of the environment”) when the generated credits were entered into the Michigan OMT registry, as well as generated credits that had passed the 5-year time limit without use. Michigan obtains and retires 10 percent of the emissions credits at time of entry into the registry to help ensure that the environmental benefits of trading happen. According to Michigan officials, its OMT program experience to date indicates substantial emission reductions have been realized due largely to the 5-year life of generated credits in its OMT program. Almost 50 percent of all credits generated in Michigan have been retired because of the expiration of the 5-year life of the credits.

However, as previously noted, the credits in the Michigan registry include credits generated from facility shutdowns, contrary to EPA’s 2001 guidance. Although EPA indicated it will be evaluating this aspect of Michigan’s program, since Michigan shutdown credits may be generated for 5 years after the shutdown of the

emitting source, along with the 5-year credit life, some of the shutdown credits would be available for use for 10 years after the source ceased operations<sup>7</sup>.

## **Conclusions**

The regulatory flexibility that industry seeks, and the environmental benefits that the public demands from alternative approaches to strict adherence to Clean Air Act requirements, will likely not be realized without a Federal rulemaking establishing minimum OMT safeguards. EPA's January 2001 Economic Incentive Program Guidance provides a framework for OMT programs and suggests some pragmatic safeguards. However, states are not required to follow this guidance in designing their OMT programs, and EPA Regional Offices have inconsistently applied this guidance in evaluating proposed OMT programs to date.

Both the Michigan and New Jersey OMT programs have strengths and limitations that, in the absence of a rulemaking, may or may not appear in other OMT programs. However, it is clear that the lack of safeguards has contributed to problems in the OMT programs we reviewed. Implementation problems have been so significant in the New Jersey program that the Commissioner recently concluded that "the program has failed" and that the State should terminate its OMT program.

Using EPA guidance selectively rather than having regulatory requirements to establish and approve state OMT programs has hindered the ability of OMT programs to become widely used and accepted. EPA officials have noted that they believe forthcoming revisions to the ozone standard will increase the need for Economic Incentive Programs, including OMT programs. We believe that the future anticipated need for state OMT programs substantially heightens the need for EPA's OMT program to be addressed in a regulatory manner. This should provide for ample opportunity – through the notice-and-comment rulemaking process – for public input into the nature and substance of the safeguards to be required, to ensure that all trades satisfy the OMT principles of integrity and environmental benefit.

## **Recommendations**

We recommend that the Assistant Administrator for Air and Radiation:

- 2-1. Develop and propose Federal rules and regulations for OMT programs, including requirements for safeguards consistent with the principles of integrity, equity, and environmental benefit presented in the Agency's Economic Incentive Program guidance, as well as appropriate public notice and comment.

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<sup>7</sup>See OIG's Memorandum regarding this subject to the Assistant Administrator for Air and Radiation dated April 5, 2002, in Appendix 7 of this report.

- 2-2. In developing the Federal rules and regulations for OMT programs, ensure that facility shutdown credits are not allowed to be traded in OMT programs.

## **Agency and State Comments and OIG Evaluation**

In his September 26, 2002, response to our draft report, the EPA Deputy Assistant Administrator for Air and Radiation asked for clarification regarding our recommendation that EPA issue Federal regulations for OMT programs. As opposed to recommending that EPA should have issued the OMT Model Rule as a Federal regulation, our report and recommendation focus on the need for EPA to issue a Federal regulation requiring appropriate safeguards for assuring that OMT program goals are achieved. We continue to believe that non-binding guidance is not appropriate for this program.

EPA officials also noted that they used the non-binding guidance available at the time to review the two state OMT programs for approval, and that it was their intention to work with the states to add additional safeguards to these programs in the years after approval. We continue to believe that appropriate safeguards necessary to assure that program goals are met should have been applied to these programs prior to final approval.

Michigan and New Jersey also suggested technical clarifications to the report which have been incorporated as appropriate in this Chapter. The full responses from EPA, Michigan, and New Jersey are in Appendices 1, 2, and 3, respectively.

## Chapter 3

### Uncertain Data Accuracy, Reliability, and Completeness Detracted from OMT Program

Three factors generally contributed to the uncertainty of OMT data, including (1) the lack of approved emissions quantification protocols, (2) heavy reliance on compliance measurements as being adequate for calculating emissions for trading purposes, and (3) the inconsistent use of data quality objectives. As discussed in Chapter 2, no EPA-approved quantification protocols were used during the calculation of credits to explain the method used for the calculation, which increased the risk of credits being invalid. Also, one of the States reviewed (New Jersey) did not conduct any reviews of the data to ensure it had accurate, reliable, and complete data on its OMT program trades. Without sufficient data or regulatory reviews to ensure accuracy, inappropriate transactions can occur. For example, a New Jersey utility (Conectiv) used inappropriate credits that could have been detected during State reviews of the data; however, the OIG staff detected the problem in the course of their evaluation, notified appropriate New Jersey officials of their finding, and the firm was assessed and subsequently agreed to pay a \$140,000 fine. New Jersey officials explained that they specifically designed their program to be self implementing, with no State reviews, due to limited resources.

#### Different Approaches Used to Evaluate OMT Data

New Jersey and Michigan took different approaches to evaluating OMT data underlying trades. New Jersey relied on a third party contractor to operate its Registry and third-party verifiers to do such evaluations, while Michigan operated its own Registry and relied on State regulators to evaluate OMT data underlying trades.

**New Jersey:** In designing its OMT program, New Jersey intended for the program to be self-implementing. Their program allows credit users to rely on third-party verification. Under their program, if verified credits are eventually found to be invalid, the credit user is not liable for the invalid credits nor is the user subject to penalty; however, the user is expected to replace invalid credits with valid credits. New Jersey officials said they relied on third party verifiers because important OMT functions, such as credit verification, can be time and labor intensive, and they did not want the program to become a burden for the State. Additionally, they were directed by State statute to “consider the role of a third party in the banking, verification, validation of use, enforcement, and program audits associated with emission reduction credits, and to the maximum extent possible, create and preserve opportunities for private sector participation in any emissions trading program. . . .” Therefore, they designed the OMT program to operate with minimal State oversight.

**Michigan:** This State systematically reviewed the reasonableness of emissions data underlying the OMT trades, which approached the level of adequacy recommended by the OIG and suggested by EPA’s Economic Incentive Program guidance. We noted that Michigan detected and invalidated the emissions data from two companies attempting to trade invalid emissions under the OMT program prior to entering their data in the registry. Details on the Michigan approach are in the accompanying box.

***Michigan Uses Two-Tiered Review Process***

The Michigan Department of Environmental Quality performs a “completeness review” of emissions credit transaction information before any credit transactions are entered into the Michigan Emissions Trading registry, as required by Department policy. While the policy states that the completeness review does not constitute approval, the review process in effect represents an approval process because credits cannot be entered into the registry before the review is completed. The Michigan completeness review is structured into two phases, or tiers. All transactions receive the lower “Tier 1” review, and if pre-established emission tonnage thresholds are exceeded, a more comprehensive “Tier 2” review is done.

**EPA-Approved Protocols Not Used**

Our reviews of a random sample of 84 OMT credit transactions (from a total universe of 792 credit transactions in both States) disclosed that no EPA-approved quantification protocols were used during the calculation of credits. A protocol is a document that describes, on a technical level, the method used to calculate the amount of emissions associated with an OMT credit transaction. Review and approval of protocols is important in ensuring the accuracy and reliability of OMT emission credits. The lack of EPA-approved emission quantification protocols for use in OMT program credit calculations increases the risk of credits being invalid.

EPA’s January 2001 Economic Incentive Program Guidance specified that protocols be used, and that states provide protocols to EPA for approval. This guidance contains general quantification protocol criteria and requires EPA approval for all quantification protocols. The guidance also notes that if EPA does not respond within 45 days of receipt of the protocol, the protocol may be used without EPA approval.

EPA also issued, in June 2001, “Preliminary Open Market Trading Emission Quantification Stationary Source Technical Guidance.” This provides minimum quantification criteria, generic emissions quantification protocol outlines, and completeness checklists. The guidance includes information about the use of the data quality objective process in quantification protocol design. This guidance, which

concentrates on the emissions of the ozone precursor pollutants nitrogen oxides and volatile organic compounds, also discusses established methods currently used for measuring those types of emissions and various emission quantification techniques that can be used to estimate emission rates and activity levels.

According to a key EPA air program official, emission quantification protocol reviews are time-consuming and EPA staff resources are not available to carry out that function. Further, the official noted that, since protocol approval by the EPA Regions is only discussed in Agency guidance and is not required, the official doubted that the EPA Regions would implement the protocol approval process.

Neither New Jersey nor Michigan provided EPA with protocols for approval, except that New Jersey did provide EPA Region 2 with 10 protocols (developed by industry) as part of an early OMT demonstration project. However, EPA Region 2 found the protocols to be deficient with regard to meeting both the EPA and New Jersey OMT program requirements.

### Emission Measurement Methods May Not Always Be Adequate

In the credit transactions we reviewed, the emission measurement methods used to calculate OMT credits were the same as compliance measurement methods. As such, these methods may not have been sufficiently precise for emissions trading purposes. For compliance measurement purposes, the measurement only needs to indicate that a certain emissions level has not been exceeded. However, the measurement to determine the exact amount of OMT credits available or needed should generally be more precise.

As shown in Illustration 3.1, in order to trade emissions, more precise data may be needed on the amount of emissions than is usually obtained for compliance purposes because compliance measurements are only concerned as to whether the source maintains its emissions below specified limits – precisely how much below, or how much variability there is about a measure (as long as it is still below the limit) are not a concern in a compliance measurement.

**Illustration 3.1: Illustration of the differences in data needs for purpose of ensuring compliance versus emissions trading**

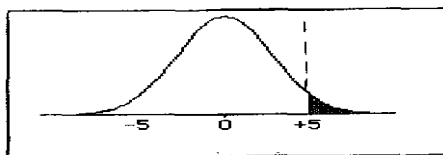


Figure A

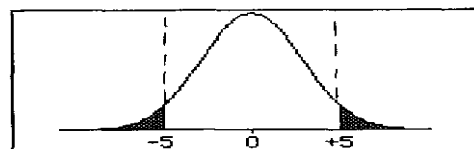


Figure B

Compliance Measurements

Emissions Trading Measurements

Compliance measures are only concerned with staying below the shaded area in Figure A. However, in emissions trading, the preciseness of the data inside the two shaded areas in Figure B is important. Compliance measurements are only concerned with keeping emissions below the facility's permit limit (Figure A). For compliance purposes, regulators only need to determine that a permit limit has not been exceeded.

However, in order to trade emissions, EPA enforcement officials asserted that precise measurements are needed because the difference between the numbers obtained – factoring out any uncertainty about the two data points – is considered the amount of emissions available for trading (Figure B). Variability in measurements is important because the generating source is now going to sell the difference between two emission levels: (1) the actual historical level of emissions, and (2) the new actual level of emissions.

When a continuous emission monitoring system (CEMS) is required in a facility for compliance emissions measurement and is therefore also used to calculate OMT credit, the amount should be sufficiently precise for OMT credit purposes. This is because actual emissions are measured with a CEMS. However, for the 56 emissions credit generation and use transactions in our sample for which measurements were needed, we determined the continuous method was only required and used for 11 of the 56 transactions (10 out of 28 for New Jersey and 1 out of 28 for Michigan). In the other instances, less reliable compliance measurement methods, such as the use of mass balance or emission factors, were the basis for credit generation calculation. These methods are based on less reliable estimation techniques; additionally, no data quality objectives had been established for OMT programs' use of these methods for calculating emissions. While use of a CEMS may not be appropriate or feasible in many cases, more precise methods of measuring should be considered than those used, or additional oversight should be provided.

### ***Data Quality Objectives Not Consistently Used***

Data quality objectives are explicit statements that describe the type, amount, and quality of data needed to support environmental regulatory decisions. EPA's concept of data quality stresses the importance of collecting data in relation to the decision to be made. As noted above, in order to trade emissions, more precise data may be needed on OMT credit generation and use than is often obtained for compliance purposes.

According to EPA's data quality objectives order (Order 5360.1), five attributes of data should be known before the data is used for regulatory decisions. These include quantitative measures of precision, accuracy, and completeness, and qualitative statements regarding data representativeness and comparability. However, data quality objectives were not consistently used to minimize the risk of invalid trades in the 84 trades we reviewed in New Jersey and Michigan. In our opinion, using the data quality objectives process to establish the minimum quality of the data underlying trades in OMT programs would reduce the risk of invalid trades. Appendix 9 presents more



information on each of the attributes essential to knowing the quality of the data underlying OMT trades.

### ***Emissions Verification Approach in New Jersey a Concern***

New Jersey's OMT program included a third party verification process to review the validity of credits prior to use. The process required either a professional engineer or an accountant to verify that the credits generated were real, surplus, quantifiable, and met other OMT regulations. A key safeguard was the stipulation that the verifier could not be an employee of the credit *generator*. However, an employee of the credit *user* was not prohibited from verifying OMT credits for use by his/her employer. We believe this is a design weakness that presented the possibility of a potential conflict of interest since the credit user – the person's employer – may have needed the credits to avoid emissions violations.

## **Registry Data Not Always Reviewed**

Both New Jersey and Michigan used registries to record and manage OMT credit transactions and to provide information to the public. However, we found problems with the New Jersey registry regarding reviews for accuracy, reliability, and completeness. While the Michigan registry generally functioned well, we noted that some improvements in documentation could be made. Neither State had performed a vulnerability assessment over their computer data systems to provide reasonable assurance of their computer outputs, as described in the General Accounting Office's guides on information systems. In the case of New Jersey, copies of these guides<sup>8</sup> were supplied to the State to assist in their development of a new registry after their contractor-operated registry failed.

### ***New Jersey Approach Emphasized Self-Implementing Philosophy***

New Jersey designed its OMT program to be self-implementing, and decided to privatize important aspects of the program, including allowing a third party (an independent contractor) to operate the official registry of all OMT trades. This registry was accessible by the general public via a public Internet web site, which included information on credit generation, transfer, and use. This contractor also maintained the official (hard copy) documentation. This contractor received compensation from fees charged to OMT credit participants rather than State funds, so the continued operation of the registry depended on an active OMT program.

Due at least in part to the self-implementing approach used by New Jersey, as discussed earlier,

***OMT credits totaling 1,376 tons not in the Registry for one firm.***

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<sup>8</sup>GAO/AIMD-00-21.3.1 provides standards for, among other things, Physical Control Over Vulnerable Assets and Control Activities Specific For Information Systems; GAO-01-1008G, "Internal Control Management and Evaluation Tool," is a guide that also addresses information systems.

State regulations required OMT participants to provide notices to the registry operator on credit transactions they wished to initiate. However, the credit data in the notices were not reviewed for accuracy, reliability, or completeness by the registry operator or the State. In the course of negotiating a settlement with PSEG, EPA Region 2 noted that 1,376 tons of OMT credits used for one firm from 1996 through 2001 were not entered into the registry. Further, the registry's contractor ceased operations in September 2001, and the registry was no longer available. Nonetheless, the registry represented the official record of trades in New Jersey.

### ***Two Enforcement Cases Impact New Jersey Registry***

In one instance, we noted that a New Jersey electric utility company – Conectiv – used inappropriate credits that could have been detected if State reviews for data adequacy had been conducted. This company obtained non-ozone season credits but used them during ozone seasons from 1996 through 2000, a violation of the New Jersey OMT program. The OIG informed New Jersey of this inappropriate use, and the State initiated an enforcement action against the firm. The firm agreed to pay the State a \$140,000 fine, which it paid on June 8, 2002.

Another incident had a significant impact on New Jersey's OMT registry. A New Jersey electric utility – PSEG – installed additional controls at two of its plants and claimed to have reduced emissions below the level required to maintain compliance with the Clean Air Act. However, EPA alleged that the two plants had not obtained a New Source Review permit as required and that they had overstated the amount of their OMT credits generated. In 2002, PSEG agreed to retire 372,380 generated credits (about 18,600 tons of pollutants). This amounted to more than 90 percent of the generated credits available for use in the New Jersey OMT registry and it significantly impacted on the availability of credits for use by other New Jersey industries. This was a contributing factor to New Jersey proposing termination of its OMT program (see Appendices 10 and 11). Details on the PSEG case are in Appendix 8.

### ***Michigan Reviews Reduced Risk of Invalid Trades***

Michigan's Tier 1 and Tier 2 completeness reviews significantly reduced the risk of invalid credit information being entered onto the registry. The State entered the information and managed the web site that was available to the public. Based on our request for randomly selected files, Michigan's ability to produce those files in a timely and relatively complete manner, and our review of data and supporting documentation related to those files, we believe this registry was generally managed well. However, we noted that supporting documentation for 5 of the 42 transactions could not be located, even though information on the trades could be located on the registry. These five transactions all involved credit transfers.

## **Conclusions**

Accurate, reliable, and complete data are essential to the successful implementation of an OMT program. Using EPA-approved quantification protocols, in combination with data quality objectives and appropriate emissions measures, is one way that the risks of questionable OMT credit data can be reduced. The OMT verification process is presently dependent on the integrity of the credit generators to meet all other regulations that could impact the credit generation and use processes. The New Jersey approach to OMT program implementation and operation, as illustrated by its self-implementing program features, versus an up-front involvement with a functioning review program like that in Michigan, demonstrates that adequate regulatory involvement and review of credit transactions can reduce the risk of invalid credits.

## **Recommendations**

We recommend that the Assistant Administrator for Air and Radiation:

- 3-1. Require the use of EPA- or state- approved emissions quantification protocols prior to trades occurring, including the use of data quality objectives for the data underlying trades, and ensure that appropriate compliance measures are used.
- 3-2. Require the OMT programs to perform vulnerability assessments over their computer data systems to provide reasonable assurance of the accuracy of computer records, data, and outputs in accordance with the General Accounting Office's guides on assessing the vulnerability of information systems.

## **Agency and State Comments and OIG Evaluation**

In his response to our draft report, the EPA Deputy Assistant Administrator for Air and Radiation noted that alternatives to EPA-approved emission quantification protocols existed prior to the approval requirement in the 2001 Guidance but that the 2001 Guidance now requires EPA approval of all protocols. His response acknowledged that the fundamental standard for State Implementation Plan approval of OMT programs has clearly changed. He also suggested some clarifications in other areas, which were incorporated into the final report, as appropriate.

Michigan and New Jersey also suggested technical clarifications to the report, which have been incorporated as appropriate in this Chapter. The full responses from EPA, Michigan, and New Jersey are in Appendices 1, 2, and 3, respectively.

**Open Market Trading Program for  
Air Emissions Needs Strengthening**

## Chapter 4

### Minimal Compliance Assurance, Enforcement, and Oversight Activities Contributed to Risks of Invalid and Questionable Trades

EPA performed little compliance assurance, enforcement, or other oversight activities of the New Jersey or Michigan OMT programs. EPA officials said that, since the State programs had not been Federally approved, there was no requirement for EPA oversight of the States' OMT activities. Regarding the States' oversight of their own programs, we found that New Jersey designed its OMT program to be self-implementing and self-regulating, and did not regularly monitor OMT program activities. Michigan performed a preliminary completeness review of all emissions credit trading transactions that provided greater assurance of compliance and lessened the risk of invalid and questionable credits.

#### Compliance Assurance Monitoring Strengthens OMT

As discussed in Chapter 3, Michigan performs a completeness review of all State OMT credit transactions before any credit information is entered into the State-run OMT registry and before any credit transactions can occur. This State review provides greater compliance assurance over credit transactions before they occur. The number of emission credits involved in the credit transaction determines the level of review. Credit transactions involving the higher level of review involve additional examination by Michigan Department of Environmental Quality field inspectors, who consult facility inspection reports and other detailed field office information on the facilities reviewed.

New Jersey used a "hands off" approach in monitoring and overseeing OMT credit transactions and used an outside contractor to operate its OMT registry. Besides working to get their OMT State Implementation Plan revision request approved by EPA, New Jersey essentially was not involved in monitoring or overseeing its OMT program operations.

EPA did not implement compliance assurance activities related to OMT credit transactions in either State. EPA Regions 2 and 5 generally obtained information from the State OMT registries concerning OMT credit transactions in New Jersey and Michigan, respectively, in connection with the State Implementation Plan reviews for those two States. However, EPA did not monitor specific OMT activities or transactions from a compliance assurance perspective, such as emission credit generation, transfer, or use, unless the Regions received a question on a specific OMT activity related to the State Implementation Plan revision approval and comment process.

EPA noted that they performed more oversight duties with pending OMT State Implementation Plan revisions than they usually do for other pending State Implementation Plan revisions. Specifically as it relates to the New Jersey OMT program, EPA pointed out that it participated in a stakeholder workgroup from 1995 to 2000, reviewed ten credit generation strategies used in the New Jersey program, and was involved in the PSEG settlement negotiations. However, in our opinion, these activities indicated concerns with the OMT program in New Jersey and should have resulted in closer scrutiny of the New Jersey OMT program.

## **Enforcement Discretion Basis for Limited EPA Enforcement Actions at OMT Sources**

EPA officials involved in the OMT program stated that Federal oversight of the program was unnecessary given the absence of Federal approval of any state OMT programs. However, facilities participating in both States have used OMT emission credits to meet Clean Air Act requirements. EPA has the option of exercising “enforcement discretion” in cases where EPA is reviewing a State Implementation Plan revision proposal that is expected to be approved by the Agency. Under “enforcement discretion,” EPA enforcement staff may decide whether or not to take an enforcement action against a facility that is not meeting Federal regulations if the applicable state program has not yet been Federally approved but is in the EPA approval process.

EPA Regions 2 and 5 have worked with New Jersey and Michigan, respectively, in the submission of State Implementation Plan revision requests that would allow the state programs to be approved by EPA. Regional officials were familiar with the design of the States’ OMT programs in connection with dealing with the State Implementation Plan revision requests submitted to EPA. However, no compliance assurance or oversight of the State OMT programs themselves had been conducted by EPA staff, although sources in both States used the OMT programs to meet Federal Clean Air Act regulations. In commenting on our draft report, EPA officials noted that now that they have decided to withdraw the proposal to approve the New Jersey program, they are working with New Jersey officials to bring sources that had been using OMT credits into compliance with underlying Clean Air Act requirements.

## **Some Enforcement Actions Involved OMT Programs**

Although no OMT sources were specifically targeted for OMT compliance assurance or enforcement activities by EPA, in the normal course of business a few OMT sources were identified by EPA as having compliance problems and, in turn, to have generated or used questionable or invalid emissions credits. The most notable case involved PSEG, a utility in New Jersey. Details on this \$337 million enforcement case are in Appendix 8. In summary, EPA alleged that PSEG modified two plants without proper permits and without sufficient reductions in emission levels to meet clean air requirements. Following settlement discussions, PSEG agreed to retire 372,380 OMT credits (about 18,600 tons of pollutants), representing about 90 percent of the generated credits listed on the New Jersey registry as available for use as of January 2002. The

retired credits had an estimated market value of over \$16 million. PSEG's OMT credits not retired as a result of the negotiations mentioned above were considered valid by EPA Region 2. PSEG retained 75,440 credits of those for their own use; the other credits had been transferred to other OMT program credit users earlier. Those other users had either already used the credits or continued to hold them for future use.

The 2001 EPA Economic Incentive Program guidance and New Jersey OMT regulations hold credit users responsible for purchasing valid credits for use in OMT transactions. Specifically, the OMT program approach to credit validity responsibility is generally a "buyer beware" policy. Therefore, if the PSEG credits transferred to other users and credits already used had been found to be invalid, enforcement actions against multiple credit users would be necessary at the Federal and State levels, most likely at a considerable expenditure of enforcement resources.

The OIG review of selected New Jersey OMT files also identified a credit violation for Conectiv, an electric utility company. Conectiv was required by its alternate emission limit State permit to obtain OMT credits for the difference between emissions allowed under Reasonably Available Control Technology requirements and its permitted alternate emission limit. As a result, Conectiv obtained non-ozone credits and then used those credits during high ozone seasons from 1996 through 2000, in violation of New Jersey OMT regulations. New Jersey requires companies that rely on emission credits during the high ozone season, which are the warmer months of the year, to purchase and use credits that are based on pollution reductions achieved during similar high ozone periods. The OIG informed New Jersey of this discrepancy, and the State included these violations in ongoing settlement discussions with Conectiv. The resulting consent decree included a \$140,000 fine related to the improperly used OMT credits. Conectiv paid the fine to New Jersey in June 2002.

## **Unlimited Credit Life May Cause Enforcement Difficulties**

We also noted that the unlimited credit life of OMT credits may cause enforcement difficulties. Trading information must be independently verifiable such that the liable party is identifiable and accountable for any violations. Since EPA enforcement activities are limited by the 5-year statute of limitations in the Clean Air Act, the concept of unlimited lifetime of OMT credits, as allowed in EPA's 2001 Economic Incentive Program guidance, may negatively impact EPA's ability to pursue enforcement actions successfully.

Although untested by case law, EPA enforcement officials indicated that the generation of emission credits could, in some cases, be considered discrete actions that occurred beyond the 5-year statute of limitations. Therefore, in those cases, enforcement actions against the source that generated invalid credits would not be allowed, even if the use of the invalid credits was more recent than 5 years. While the Michigan OMT program limited the life of credits to 5 years, the New Jersey OMT program has no limits on the life of emissions credits. Also, as noted in Chapter 2, the Michigan OMT program allows credits generated from facility shutdowns. Since Michigan shutdown

credits may be generated for 5 years after the shutdown of the emitting source, along with the 5-year credit life, some of the shutdown credits would be available for use for up to 10 years after the source ceased operations<sup>9</sup>. EPA has proposed approval of Michigan's program, including use of shutdown credits, but is considering whether to proceed with final approval. EPA noted that no decision has been made on this issue. In its comments on the draft report, EPA stated that, if they proceed with final approval, they would require the Michigan program to fix the shutdown credit issue within three years.

## **Regulatory Agency Oversight Varies Significantly**

Neither EPA nor the two States reviewed had performed an overall review of OMT programs to assess the operation of their programs and identify strengths and weaknesses. Michigan had begun an evaluation of its OMT program, and review of the preliminary draft report on the evaluation indicated that the evaluation focused on OMT program activity and Michigan Department of Environmental Quality's processes related to that program.

New Jersey Department of Environmental Protection staff asserted that a State review of their OMT program was not required until the program was Federally approved. However, State regulations required a triennial review of New Jersey's program, which had been in existence since 1996. Since New Jersey did not review OMT credit transaction data or notices of individual trades, the need for a review of the overall OMT program was particularly pertinent. The lack of regular periodic oversight or monitoring of the OMT program by New Jersey may have contributed to the State being less prepared for the OMT program problems that arose.

## **Conclusions**

Michigan's OMT-related compliance assurance process provided greater assurance that trades were real, surplus, and quantifiable, and reduced the risk of invalid or inappropriate credit transactions being entered into its OMT registry. Due to the effectiveness of Michigan's up-front completeness reviews, Michigan significantly reduced the risk of emissions-related enforcement activities. In contrast, New Jersey adopted a self-implementing, self-directed OMT program that had minimal New Jersey oversight involvement. As a result, questionable credit transactions occurred that resulted in enforcement actions related to those transactions. According to EPA and State officials, these enforcement actions required considerable agency resources to develop the cases and settle the violations.

We believe that emission-related enforcement difficulties are more likely to occur when regulatory agency oversight of OMT programs has been inadequate. Up-front involvement in OMT program compliance assurance activities by the applicable regulatory agencies can significantly reduce the risk of occurrence of invalid credit

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<sup>9</sup>See OIG's Memorandum to the Assistant Administrator for Air and Radiation, dated April 5, 2002, regarding this subject, in Appendix 7 of this report.



transactions and the resultant need for expensive, time-consuming enforcement actions later when trades are alleged to be invalid or questionable. Additionally, the unlimited life of emissions credits, such as in the New Jersey program, is believed to affect the ability of regulatory agencies to deter noncompliance, since some credits may be generated beyond the 5-year statute of limitations.

## **Recommendations**

To obtain reasonable assurance that the OMT principles will be achieved, we recommend that the Assistant Administrator for Air and Radiation:

- 4-1. Develop and require the use of a risk-based approach for Federal and state oversight of OMT trades, including revising EPA's Compliance Monitoring Strategy, to require states with OMT programs to use the risk-based approach.
- 4-2. In developing the risk-based approach for Federal and state oversight of OMT trades, at a minimum, the risk-based approach should require enhanced regulatory agency scrutiny of:
  - all precedent-setting trades.
  - all large volume trades.
  - all high-risk trades, such as those involving volatile organic compound-containing air toxics.
  - trades with significant public comments or concerns.
  - trades employing less reliable emissions calculation techniques, such as those involving mass balance calculations and/or emissions factors.
  - trades in industries with poor compliance records.
  - trades by facilities with poor compliance records.
  - trades with the potential for environmental equity impacts.
- 4-3. Establish a limit on the life of OMT credits consistent with the Clean Air Act statute of limitations period, presently 5 years.

## **Agency and State Comments and OIG Evaluation**

The EPA Deputy Assistant Administrator for Air and Radiation noted that the need for more oversight of the New Jersey and Michigan OMT programs is premature because these programs have not been approved by EPA. However, as stated in our report, we continue to believe that, since the OMT participants have used OMT emission credits to meet Clean Air Act requirements, EPA has an obligation to adequately oversee OMT activities.

EPA also noted that the PSEG case should not be portrayed as a failure of the OMT credit validation process but as a successful outcome under the normal course of enforcing. While we recognize EPA's successful enforcement action, we believe that a risk based approach to targeting selected OMT participants for closer scrutiny would

identify questionable credits earlier and minimize the risk of large volume invalid trading activity.

EPA also noted that the recommendation for a risk-based approach to oversight of OMT program activities was unclear, and that oversight of OMT activities has the potential for much higher regulatory agency resource commitments. Our recommendation recognizes the resource commitments necessary to ensure that the OMT program goals are met, and as such, tries to provide EPA with a pragmatic approach to balancing limited resources against the need to minimize risk in trading activity. A risk-based approach would allow EPA to focus its oversight activities on higher risk sources, such as large volume participants, new credit generators and users, and sources with recent violations.

Michigan and New Jersey also suggested technical clarifications to the report, which have been incorporated as appropriate in this Chapter. The full responses from EPA, Michigan, and New Jersey are in Appendices 1, 2, and 3, respectively.

# Appendix 1

## EPA Office of Air and Radiation Response

### MEMORANDUM

SUBJECT: Open Market Trading Program for Air Emissions Needs Strengthening Report  
No. 2001-0001067

FROM: Robert D. Brenner  
Deputy Assistant Administrator

TO: Kwai-Cheung Chan  
Assistant Inspector General for Program Evaluation

Thank you for the opportunity to comment on your draft evaluation report: “Open Market Trading Program for Air Emissions Needs Strengthening.” We appreciate the efforts of your staff to provide an independent review of open market trading (OMT) programs and the experience that New Jersey and Michigan have had with these programs to date.

While your analysis appears even-handed overall, we do have several questions and comments to offer for consideration before you issue your final report. Our comments are divided into two sections: general observations, which are included in this letter, and more detailed comments in the attachment.

### General observations

29. **Misleading language:** We found several places in the report where the language used could easily be misconstrued by those not familiar with the details of open market trading, or with how the States of New Jersey and Michigan put this concept into place. For example, the executive summary includes the phrase, “Opportunity for public comment not provided.” As written, this implies that the public has not had the opportunity to comment on the issue of the guidance for open market trading, on specific State rules, or on individual trades.

In our attached detailed comments, we cite numerous opportunities for comment on the 2001 Economic Incentive Program (EIP) guidance issued by the Office of Air and Radiation (OAR) and on the New Jersey and Michigan rules. In fact, the 2001 EIP Guidance document provides information to help the public participate in the development of these programs. We hope your final report will clarify the meaning of this and other comments.

30. **Guidance or rule?** In your draft report, you raise the question of whether the OMT guidance and by inference the 2001 EIP Guidance should have been issued as a rule rather than guidance. We will carefully consider your advice as we move ahead to our next update of the 2001 EIP Guidance. However, we feel it is important that this report include our reasons for choosing to update the initial 2001 EIP Guidance as a guidance document.

As you know, we proposed an OMT Rule in 1995. We later decided to fold this into the broader 2001 EIP Guidance. We did consider issuing the 2001 EIP Guidance as a rule, but we decided against that approach so that we would not hinder the broad range of local creativity and innovation needed to reduce emissions in different areas of the country with differing air quality problems. No single rule would be able to anticipate the breadth of options States may need to use to reduce emissions in a cost-effective and environmentally responsible manner. With that in mind, we developed the guidance document to help States design EIP's that are appropriate for their areas.

- 3) Another major point discussed throughout your draft report is that key provisions of the Environmental Protection Agency's (EPA) 2001 EIP Guidance were not followed in the design and review of the Michigan and New Jersey OMT Programs. This statement is misleading since EPA stated in its proposed approval rulemakings that the basis for proposing approval of the Michigan and New Jersey OMT Programs was the guidance available at the time these programs were developed and submitted (i.e., before 1999), which did not include the 2001 EIP Guidance. In the proposed SIP actions, EPA outlined a process for revising the State programs in the future to be consistent with the 2001 EIP Guidance. This is mentioned briefly in the Report in Chapter 2, but this statement should be clarified in the Executive Summary.

Also, with respect to New Jersey's OMT Program, the Report should describe the ongoing dialogue between EPA and New Jersey for the past several years regarding State implementation program (SIP) approval of the Program. The recent correspondence (letters dated June 24, 2002, August 13, 2002 and September 10, 2002) between EPA and the State of New Jersey demonstrates the continuous nature of these discussions. A more detailed discussion of this correspondence in the Report will help provide a more accurate status of New Jersey's OMT Program and EPA's rulemaking process.

- 4) Our final general point highlights a common problem associated with OMT or almost any smaller program associated with a broad program area. Many of the issues pointed out in your report are common to the broader air pollution control program. For example, the issues of SIP processing times and enforcement discretion arise in implementing many parts of the Clean Air Act. Mentioning the issues here without mentioning the larger context appears to say that the trading program independently raises these issues which is incorrect.

**Open Market Trading Program for  
Air Emissions Needs Strengthening**

Many of the issues you highlight in the draft report are issues with which OAR and EPA's Regional Offices have been struggling for several years, and I appreciate your thoughtful review and comments. Your evaluation, combined with our experience with the New Jersey and Michigan programs, will help EPA strengthen the OMT guidance – and in turn, help States develop effective EIP's that will help the Nation meet its air quality goals.

Should you have any questions concerning these comments, please do not hesitate to call me or contact Ron Evans (919-54-5488) who is my technical coordinator for developing these comments.

Attachment

OAQPS:AQSSD:ISEG:REVANS:sjournigan:MC C339-01:919 541-5488:9/25/02  
Control No. OAR-0200766                      Due Date: 9/24/02

ATTACHMENT: Detailed comments on draft OIG Evaluation Report on Open Market Trading (OMT)

## EXECUTIVE SUMMARY

1. *“Invalid credits detected by Michigan”*– The State’s routine notice review procedures detected the invalid credits before they were posted to the registry. This was described as a flaw in the program. In fact, the State's detection of invalid credits through the process could more fairly be described as a successful use of routine program procedures to prevent the registration of invalid credits.

2. *Opportunity for public comment not provided.* This comment is unclear. Does it refer to a lack of comment during the rulemaking process or for each trade? If it is referring to the rule making process it is in error. For New Jersey and Michigan there was extensive public participation during design, implementation and decision making during the rulemaking processes at Federal and State levels. This included numerous public meetings and monthly stakeholder work rroups. This was also true during the development of the 2001 EIP Guidance document issued in January 2001.

If this refers to public input for each trade, the comment is understandable. The EPA does not require public input for each trade, although in the 2001 EIP Guidance it does require public notice of each trade and meaningful public input during the rule development process. This allows more local choices and tradeoffs regarding how and when public comment is solicited and received. Each State rule will describe how much public input will be solicited for each trade. Please clarify which public comment this “Opportunity for Public Comment not provided” is referring to.

3. *Approved protocols not used.* This may not be completely accurate. Many sources use the same method for estimating the amount of credits as they use to determine if they are in compliance with their permit limits. For example, many of the credits initially generated for the New Jersey program were calculated using CEM measurements, one of the most accurate air pollution measurement methods. Is there some reason to believe the methods used by sources are inaccurate or wrong? Or are they just not EPA approved? Clarification of this meaning would be useful.

4. The draft report makes some important distinctions between Michigan's rule and New Jersey's rule, including differences in notice review procedures and registry operation. It would be useful to highlight these distinctions in the executive summary.

## CHAPTER 1:

1. Table 1.1 trading program classification. The separation of the trading universe into these 3 categories does not provide a good description of the genre of trading programs. The breakdown used in the 2001 EIP Guidance covers much more of the possible types of trading. See Section

7.1 of Improving Air Quality with Economic Incentive Programs. In general, the 2001 EIP Guidance does not apply to NSR trading. The NSR trading is not really in the same category as the other types of trading programs— it is a Clean Air Act mandated program that uses some of the other programs to quantify and record transactions. This need to be made clear and the table 1.1 didn't make this clear.

2. All correspondence between EPA and New Jersey should be discussed under the section "Current Status" on page 6. Specifically, it should be noted New Jersey's August 13, 2002, letter was in response to EPA's June 24, 2002, letter. Also, on September 10, 2002, EPA Region 2 transmitted a letter to New Jersey Commissioner Campbell responding to his August 13, 2002, letter. Granted this letter was sent immediately before circulation of the OIG's Draft Evaluation Report, but the Final Report should incorporate and discuss Region 2's latest letter. The EPA believes this most recent letter and the positions within it have a direct impact on some of the sections of the Report. Also, the discussions regarding EPA's "enforcement discretion" should be revised to point out that EPA Region 2 has decided to withdraw the proposal and will work with New Jersey to bring sources that have been using credits into compliance with underlying requirements. This also speaks to compliance assurance and oversight activities that will be undertaken in the near future by Region 2 and New Jersey. Also, by withdrawing its proposal, EPA ensures any future rulemaking for any future New Jersey OMT Program will be based on EPA's 2001 EIP guidance.

## CHAPTER 2:

1. The main recommendation of your Evaluation Report is that EPA should develop and propose Federal regulations for OMT Programs, and not rely on non-binding guidance. This issue is confusing. Is this suggesting the proposed open market trading model rule should have been finalized or is this saying the open market trading guidance should have been a rule? If you mean the former, the reasons in the report accurately explain why the model rule was never finalized. However, if this means the open market trading guidance should have become a rule, the reasons are different. The EPA decided to issue the open market trading policy as a guidance because it was to be included in the bigger guidance on economic incentive programs. The EPA chose to include it as part of the bigger guidance to:

A) make it clear that open market trading programs were just one of several types of trading programs and only one type of economic incentive program. Open market trading is not a panacea for all air quality control programs. It is appropriate in some situations and not in others.

B) make sure all policy decisions were made considering the effect on all trading programs and all economic incentive programs. Answering issues relating to open market trading in the 2001 EIP Guidance without considering the effects on other programs would result in far reaching, sometimes unwanted effects.

The next logical question is why has EPA not promulgated a revised economic incentive program like the 1994 EIP rule. This can be explained as follows:

A) The 1994 EIP was only a rule for mandatory EIP's not discretionary EIP's. The Clean Air Act requires rules for mandatory EIP's but only requires a guidance for discretionary EIP's. All proposed State programs have been discretionary. With the creation of new air pollution goals for ozone and particulate matter in 1997, it will be many years before a State could be required to develop a mandatory EIP. The EPA realizes that the new 2001 EIP Guidance may need to become a rule by the time States may be developing mandatory EIP's.

B) States were developing EIP's as we were writing the 2001 EIP Guidance. The faster we got the guidance out, the faster States would have guidance on many difficult issues. This increases the chances that States develop programs that would receive EPA approval. This was the problem for New Jersey and Michigan where we had no firm guidance as they were in the rule development process and in some instances they chose differently than EPA eventually settled on. We wanted to avoid future problems like this by getting out a policy as soon as possible.

2. The Report states that lacking regulation, EPA Regional Offices did not require the two States to implement all the safeguards indicated in EPA's 2001 EIP Guidance. The implication is that EPA misapplied its own guidance because it was non-binding guidance instead of regulation. This is not true; in fact, the status of this EIP Guidance document is irrelevant to how we conducted the review of the Michigan and New Jersey programs. The EPA applied the relevant guidance available at the time the Programs were developed, adopted and proposed for SIP approval.

In the proposed SIP actions for the two OMT Programs, EPA outlined a process for revising the State programs in the future to be consistent with the final 2001 EIP Guidance. With respect to New Jersey, Region 2 fully intended to address the 2001 EIP Guidance after final action on the SIP; however, events during the SIP process has lead both Region 2 and New Jersey to determine the program has failed. A major finding discussed throughout the Evaluation Report is that key provisions of EPA's 2001 EIP Guidance were not followed in the design and review of the Michigan and New Jersey OMT Programs. While this is a true statement, it is misleading since EPA acknowledged the 2001 EIP Guidance would not serve as the basis for approval in the proposed rulemakings for the Michigan and New Jersey OMT Programs. The EPA clearly stated in its proposals the basis for proposing action was the guidance available at that time these programs were developed and submitted (i.e., before 1999), which did not include the 2001 EIP Guidance. This is mentioned briefly in the Report in Chapter 2, but not included in the Executive Summary. The EPA believes the Report understates the chronology of events in the development of these two OMT Programs versus the process for finalization of the 2001 EIP Guidance. When these States developed and adopted their OMT Programs and when EPA was reviewing and processing the SIP revisions for these Programs, the 2001 EIP Guidance was not



available as the standard by which to evaluate these Programs. Realizing the process was underway to reconsider the policies regarding economic incentive programs, but without any specific date for issuing a revision to the 2001 EIP Guidance, EPA outlined a process for revising the State programs in the future to be consistent with the final 2001 EIP Guidance, if and when it was issued.

The Report misrepresents the facts when it states EPA did not require the two States to implement all the safeguards indicated in EPA's 2001 EIP Guidance when EPA did, in fact, require the States to implement all the safeguards available in EPA EIP Guidance at the time the Programs were developed, adopted and proposed for SIP approval. In the case of New Jersey, requiring the State to implement all of the safeguards available resulted in a proposed conditional approval, instead of a proposed approval. Regardless, EPA values the OIG's work in reviewing the two OMT Programs against the 2001 EIP Guidance; the comparison in the Report of New Jersey and Michigan OMT Programs with EPA's 2001 EIP Guidance will be helpful with any future consideration of these Programs.

3. On Page 9 of the draft report, it says "However, neither the States nor EPA regional offices are required to follow the guidance." Section 1.9 of the 2001 EIP Guidance says the guidance contains elements that EPA feels would assure the program meets applicable CAA provisions. Programs that do not contain these elements would need some additional scrutiny to ensure that the program meets those provisions.

4. Last sentence of first paragraph– it isn't clear how "lack of regulations" has resulted in the trading of "invalid and questionable credits." If this refers to the PSEG situation, it's hard to see how Federal OMT regulations would have prevented this problem.

5. Prohibiting Shutdowns. The issue of allowing or prohibiting shutdowns to generate reductions for an open market trading program was hotly debated within EPA and at public forums. The 2001 EIP Guidance gives EPA's answer—that shutdowns do not belong in an open market trading program. Our reasons for this do not match the ones you represent as our reasons. Our reasons are:

- A) An OMT program is to generate credits by over control not by shutdowns.
- B) The equation for generating credits is based on a change in emission rates not activity levels so shutdowns do not generate reductions.
- C) Emission increases caused by activity level increases do not need to get mitigating reductions in most areas of the country so it does not make sense that emission reductions resulting from activity level decreases should generate emission reductions.
- D) If a State wishes to allow shutdowns to generate tradable emission reductions, there are several other types of emission trading programs they can implement.

"Shutdown Credits Allowed in Michigan OMT Program": The IG report is correct in asserting that Michigan's program differs from the 2001 EIP Guidance with respect to shutdown

credits. However, it might be useful to note some factors that minimize concerns about the potential use of these credits, prompting the Region and OAR to decide that this issue does not justify SIP disapproval. Most importantly, Michigan's program restricts the use of shutdown credits to: 1) NSR offsets, used in compliance with NSR requirements (as is allowable under the 2001 EIP Guidance); and 2) compliance with applicable requirements in areas that neither have nor need an attainment demonstration or maintenance plan (in other words, in attainment areas that are not maintenance areas). As a result, compliance uses of shutdown credits will be limited to areas that meet the national ambient air quality standards and have done so for a long time. Moreover, a majority of the shutdown credits generated under Michigan's program have already expired or been retired voluntarily. For VOCs, data provided by Michigan indicate that as of April 2002, only 1,438 tons of credit will be available for use as a result of shutdowns that have been registered to date. Therefore, it is unlikely that shutdown credit use will lead to any air quality problems. Nonetheless, if EPA proceeds with approval of Michigan's program, we expect that final action will include a statement that EPA expects Michigan to revise its program within 3 years of final approval to become consistent with 2001 EIP Guidance policies related to shutdown credits.

6. Pages 14 to 16 state that the lack of Federal approval is the reason that these open market trading programs were not very popular. While this could be one of the reasons, there are certainly others. Another reason that will continue even after EPA approval of the programs is the low demand for short term reductions. Most needs for emission reductions are long term. Sources needing long term reductions much prefer long term emission reductions rather than discrete emission reductions in open market trading. The EPA intends to encourage the use of innovative and nontraditional control strategies as States are developing their original attainment plans for the 8 hour ozone and PM fine standards. In addition, while the delay in Federal approval may have made sources reluctant to participate in the trading programs, the link between this fact and the recommendations made on page 17 (Federal regulations for OMT programs, elimination of shutdown credits) is not clear.

The Report discusses that officials from Michigan and New Jersey noted the lack of Federal approval of their OMT Programs hindered operation of the program. The Report should indicate other reasons why sources haven't participated. Based on Region 2's discussions with New Jersey and industry over the years, many sources did not participate in the program because of the limited list of allowable uses for credit.

7. "Conclusions": "EPA Regional Offices have inconsistently applied [the 2001 EIP Guidance] . . . in evaluating proposed OMT programs to date." It isn't clear that a regulation is needed to make EPA actions more consistent— to the extent that EPA may have treated OMT program submissions inconsistently, this inconsistency occurred in relation to programs submitted prior to the finalization of the 2001 EIP Guidance when the status of EPA guidance related to OMT programs was unclear. The OMT programs submitted in the future will be judged against the 2001 EIP Guidance and, therefore, will not face this ambiguous situation, even in the absence of regulation.

8. “Conclusions”: *“Selective use of EPA guidance “rather than having regulatory requirements to establish and approve OMT programs has hindered the ability of OMT programs to become widely used and accepted.”* It is valid to state that uncertainty about what is approvable and about what the policy is has helped discouraged some States from developing OMT programs and has contributed delays in action on the programs that have been submitted. However, it isn’t clear that a highly prescriptive federal regulation will encourage widespread adoption of OMT. Some of the IG’s recommendations, such as requiring opportunities for public participation in every trade, would likely discourage States from adopting OMT.

9. “Public participation process ineffective”: The EPA and the States took several steps to include interested parties in the design, implementation and oversight of the 2001 EIP Guidance and State programs. While flaws have been uncovered in these programs, this does not necessarily imply that the public participation process was ineffective. The EPA and the State will continue to seek comment and input from interested parties as the State programs are further developed and the 2001 EIP Guidance is updated and revised.

10. Pollutant inclusion in new 2001 EIP Guidance. During the public comment period on the draft 2001 EIP Guidance, a public interest group pointed out that including Lead raised issues about trading toxic compounds which the 2001 EIP Guidance had not fully explored. In addition, Lead could be excluded because there is little need for reductions in Lead in the future from a criteria pollutant perspective. These two circumstances caused EPA to remove Lead from the pollutants covered by the 2001 EIP Guidance. The EPA is prepared to ask Michigan to remove Lead from their OMT program.

Although the new 2001 EIP Guidance didn’t include PM fine, EPA is now developing a separate document that provides guidance on using innovative strategies for reducing PM fine concentrations. The EPA will then revise the 2001 EIP Guidance to include PM fine. The EPA is also fine tuning its guidance for the 8-hour ozone standard to reflect the unique needs for controlling a longer-averaging time ozone standard.

11. New Jersey’s OMT SIP revision request was submitted in 1998, not 1996.

### CHAPTER 3

1. The Report discusses the fact that no EPA-approved quantification protocols were used to calculate credit. Again, the requirement at the time in which these Programs were developed and adopted is different than the current requirement of EPA’s 2001 EIP Guidance. The EPA’s OMT guidance at the time was that if an EPA-approved protocol existed, it had to be used, unless sources seeking an alternative received EPA approval. Otherwise sources can develop their own protocols based on protocol development criteria contained in regulation. The EPA’s 2001 EIP Guidance now requires EPA approval of all protocols. The standard for SIP approval has clearly changed and EPA planned for this fundamental change in the larger context of making these Programs consistent with the 2001 EIP Guidance in the future.

2. Emissions measurement methods may not be accurate: The report states that mass balance is a less reliable emissions quantification technique than CEMs “since they were only based on estimates.” CEMs provide estimates as well– it’s just that these estimates are considered highly reliable (for some sources). A mass balance and CEM data are equally based on estimates, and EPA believes that each can have a role in quantifying emissions reductions used to generate credits in OMT programs.
3. “Data quality objectives not consistently used:” It isn’t clear that the data quality objectives meant for evaluating the usefulness of data for making regulatory decisions ought to be binding on sources that report emissions data under an OMT program, any more than on sources that report emissions data under other programs.

#### CHAPTER 4

1. The need for more oversight. Reports from several areas have highlighted the potential for much higher resource commitments for oversight and enforcement in areas that implement emissions trading programs. However, for New Jersey and Michigan, this issue is premature as these trading programs are not approved in the SIP yet.
2. The draft report correctly states that the enforcement settlement with PSEG removed a majority of the credits from the New Jersey OMT bank. The draft report discusses how EPA identified questionable credits by PSEG under its New Source Review enforcement initiative. It must be emphasized that the question regarding the appropriate emission limit for PSEG’s power generating facilities originated purely as a New Source Review issue and not as an OMT credit validation issue. This is important because the New Source Review enforcement initiative affected other programs in which PSEG’s units were subject, not just OMT, including RACT, Acid Rain and NOx Budget. This particular issue should not be portrayed as a failure of the OMT credit validation process, but as a successful outcome under the normal course of enforcing. This case is no different from any other situation in which the inspection or review of a source’s compliance status determines the source’s emission rate is in violation of applicable requirements. The difference here is the effect the remedy had on the underlying programs. The PSEG settlement had little effect in the Acid Rain and NOx Budget Programs because those programs include many other sources generating credit. Conversely, PSEG happened to be the largest generator of credit in New Jersey’s OMT Program. Therefore, the agreement to retire most of PSEG’s credit had a huge effect on the OMT Program.
3. Region 2 should be given credit when it questioned the relationship between the PSEG New Source Review enforcement initiative and PSEG’s participation in the OMT and NOx Budget Program more than 1 year prior to the start of the OIG evaluation. In March 2000, when the Region issued a Section 114 letter to PSEG, the Region 2 air program office and enforcement office began sharing information on PSEG’s facilities. Also, in the course of negotiating a settlement with PSEG, Region 2 requested PSEG and New Jersey to provide information on any credit use by PSEG. The PSEG provided Region 2 with credit use information that was not

listed in the New Jersey OMT registry. Region 2 forwarded this information to the OIG, bringing attention to the fact that New Jersey's registry failed to enter 1,376 tons of credits used by PSEG from 1996 through 2001.

4. We applaud the OIG in identifying the inappropriate use of credit by Conectiv. Region 2 agrees this clear violation of New Jersey's OMT regulation could have been detected by New Jersey had the State reviewed data being entered into the registry. However, Region 2 emphasizes this situation was a failure of implementing the program and not a specific deficiency in the regulation.

5. Credit Life. The comment is made to limit credit life to the 5-year statute of limitations on enforcement actions. The EPA recognizes this issue. The EPA believes in some areas in some situations a long credit life may be a better program. However, to rectify the issue mentioned here the new 2001 EIP Guidance requires special provisions for areas that wish for credits to last longer than 5 years. Every generator who wishes for their credits to last more than 5 years must make an enforceable statement that they will not use the statute of limitations as a defense in any enforcement action.

6. On page 28 the top paragraph says EPA plans to approve the Michigan program as is, with the use of shutdown credits allowed, ". . . and with the **recommendation** (emphasis added) that Region 5 require Michigan's OMT program meet 2001 EIP Guidance regarding shutdown credits within 3 years." The EPA has proposed approval of Michigan's program, but is considering whether to proceed with final approval. This decision has not been made yet. If EPA does proceed with final approval, we expect to more than recommend a change in the shutdown credit provisions; we would expect to require the MI program to fix the shutdown credit issue within 3 years.

7. The risk based approach is unclear. We can't evaluate its validity without some additional support. Maybe this section should be strengthened to make it clearer what is meant. In addition, it isn't clear what in the report indicates the need for a risk-based approach--the supporting information for it is missing.

8. We believe the report is incorrect in stating that EPA performed little compliance assurance, enforcement, or other oversight activities of the New Jersey OMT programs. Though Region 2 may not have targeted its limited resources for OMT-related enforcement initiatives since the State programs had not been federally approved, Region 2 did conduct several oversight efforts to understand the implementation of the Programs while reviewing and processing the OMT SIPs. In fact, Region 2 performed more oversight duties with these pending OMT SIP revisions than it usually does for other pending SIP revisions. In the case of New Jersey this included: (1) participation in New Jersey's stakeholder work group from 1995 to 2000, (2) reviewing the ten credit generation strategies from reductions occurring prior to adoption of New Jersey's OMT Program, and (3) involvement in the PSEG New Source Review settlement negotiations. Rarely does Region 2 provide such oversight of the implementation of a State-adopted program that is pending SIP rulemaking.

With respect to the ten credit generation strategies mentioned in the Report, Region 2 believes the Report is misleading by suggesting the Region failed to follow through on the deficiencies of these ten strategies. Region 2 specifically discussed in the proposed action on New Jersey's OMT Program that the results of the review were provided to New Jersey for the State to work with industry in addressing Region 2's comments. Region 2 stated in the proposal it would follow up on these strategies when the OMT Program is federally enforceable. It should be emphasized that these are credit generation sources and not credit users. While EPA could decide to enforce underlying requirements upon credit users, EPA has no authority to enforce against credit generators, or determine the credit invalid, until the OMT Program is federally enforceable. Also, Region 2's review of the ten credit generation strategies provides evidence that EPA Regional Offices will implement the 2001 EIP Guidance's protocol approval process, contrary to statements in the Report.

One other point of clarification regarding the ten credit generation strategies: New Jersey did not "grandfather" credits from the NESCAUM/MARAMA Demonstration Project. New Jersey provided a limited period of time within its regulation for any source to submit early reduction credits for emission reductions which occurred prior to rule adoption. Ten sources submitted early reduction credit generation strategies, some of which participated in the Demo Project. Independent of the OMT regulation, New Jersey conducted a public notice and comment rulemaking process in approving the 1992 and 1993 PSEG credits under the Demo Project.

9. The Report is only telling part of the story in stating EPA has not targeted OMT activities for enforcement. In the case of New Jersey, Region 2 has twice offered to work with the State to address compliance issues with sources that currently hold credits or that have been using credits to comply with SIP approved regulations (June 24, 2002 and September 10, 2002 letters). Region 2 intends to work with New Jersey to address this compliance issue and will be sensitive to the fact that these sources used credits in a good faith effort to comply with State and Federal regulations.

# Appendix 2

## Michigan Department of Environmental Quality Response



JOHN ENGLER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



RUSSELL J. HARDING  
DIRECTOR

September 26, 2002

Mr. John M. Bishop, Project Manager  
Office of Inspector General (N238-01)  
U.S. Environmental Protection Agency Mailroom  
Research Triangle Park, NC 27711

Dear Mr. Bishop:

The Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), appreciates the offer to comment on the draft report on Open Market Trading (OMT). Understanding the time limits imposed upon the Office of Inspector General (OIG), the AQD has kept comments to a minimum. In general, the report is well written and easy to understand.

### Comments

#### **General:**

On page 1 of appendix 6, under the paragraph for "completeness" the word "decision makers" is misspelled.

#### **Chapter 2:**

The draft report contains the following statement: "As the result of the lack of regulations, safeguards intended to protect the public have not been consistently applied and invalid and questionable credits have been traded in some instances." The AQD is uncertain whether this statement is applicable to Michigan or is regarding the United States Environmental Protection Agency's (EPA's) role in the issuance of regulations for trading programs. Clarification is necessary before AQD can properly respond.

Table 2.1 includes the following statement: "EPA was concerned that a facility may shut down in one state, generate and sell credits, but then relocate their operations to other states." The AQD shared this same concern. The AQD does not allow load shifting per Rule 1207(5). Rule 1207(5), promulgated pursuant to Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, requires a statement of compliance as part of the notice submittal. In addition, as part of the review procedures for processing generations, the AQD requests information regarding load shifting from the companies involved in the program. As detailed below:

Rule 1207(5) states "Any baseline calculated under subrule (2) of this rule shall be adjusted by subtracting from the baseline any emission increases from another source, process, or process equipment in the same source category and under common ownership or control resulting from a shutdown or curtailment of the source, process, or process equipment making the emission reductions."

Submittal and review procedures state:

“If the emission reduction strategy is a permanent or temporary shutdown or a curtailment of operations, then it is necessary that one of the following be included in the submittal to ensure

that all emission reductions being claimed are “real” (in that an actual reduction in air emissions has occurred):

- (i) A demonstration that the baseline emission level has been adjusted to account for any “load shifting” as required pursuant to Rule 1207(5), or
- (ii) An explanation of why there was no “load shifting” as a result of the shutdown or curtailment of operations, including a statement that this did not occur.”

The draft report contains the following statement: “As the result of the lack or regulations, safeguards intended to protect the public have not been consistently applied and invalid and questionable credits have been trading in some instances.” The AQD cannot respond without OIG defining what they consider an “invalid” emission credit. The AQD does not allow any emission reduction credits (ERCs) that are not real, surplus, enforceable, permanent and quantifiable. The AQD would also like to note that we have not allowed any invalid or questionable credit transactions. The statement suggests that Michigan may have had problems in this area, which is without any evidence provided by OIG. The AQD recommends that OIG delete or revise the statement.

### **Chapter 3:**

In the draft report, OIG “... noted that supporting documentations for 5 of the 42 transactions could not be located even though information on the trades could be located on the registry.” The AQD is currently reviewing the filing procedures for the trading program to insure that files are not misplaced or lost. In addition, electronic back up copies of all letters and staff analyses are maintained.

### **Chapter 4:**

In the paragraph with heading of “Some Enforcement Actions involved OMT programs,” a general statement is made regarding enforcement activities and that “some OMT sources may have generated or used questionable or invalid emission credits.” As stated above, the AQD cannot respond without OIG defining what they consider an “invalid” emission credit.

In Appendix 3, OIG states: “We found that all the generation and use sample transactions were entered into the Michigan OMNT Registry on the Internet. We could not find any transfer transactions on the Registry.” The AQD has been working with our computer assistance group under the Michigan Department of Information Technology to correct this problem. At this time, it appears to be a software glitch that occurs when the database is updated. It should be noted that the information is in the database and AQD staff were able to pull this information for the auditors to review.

Michigan's OMT program has been functioning since 1996. Although not used extensively because of Michigan's attainment of all criteria standards, the program has provided a very workable option for companies seeking a more cost effective means of complying with various air standards. It is a sound program that came about through many hours of discussions among experts in the field of emissions trading, MDEQ staff, and various stakeholders. As with any new program, there are tweaks that are needed to improve its functioning and to address scenarios that were not originally anticipated. The MDEQ will continue to pursue these as needed.



The AQD would like to reiterate that our OMT program is a voluntary statewide program, which includes volatile organic compounds and all criteria pollutants except ozone. Any person, stationary, area or mobile source may participate in the program, at their option. In order to be considered creditable under the program, all emission reductions must be:

1. Surplus, reductions made below an established source baseline and not required by any applicable requirement;
2. Real, in that all emission reductions have actually occurred prior to use;
3. Quantifiable, in that all reductions can be measured and are replicable;
4. Enforceable, in that they can be enforced by both MDEQ and the EPA;
5. Permanent, in that the reductions continued throughout the time the ERCs were generated.

All sources wishing to participate in the program must have been included in the most recent emission inventory and emission reductions must have occurred after March 16, 1996. To ensure that the emission trading program is used in a manner consistent with attainment and maintenance of NAAQS and state and federal requirements, ERCs and Emission Averaging Plans cannot be used to avoid or comply with the following requirements:

- C New Source Performance Standards (NSPS)
- C National Emission Standards for Hazardous Air Pollutants (NESHAPs)
- C Maximum Achievable Control Technology (MACT)
- C Best Available Control Technology for Toxic Air Contaminants (TBACT)

ERCs can be used to comply with Best Available Control Technology (BACT)/Lowest Achievable Emission Rate only when the required control equipment has been properly installed, operated and maintained.

Thank you for the opportunity to comment on the draft report before it is finalized. If you have any questions concerning our comments, please contact Ms. Theresa Walker, AQD, at 517-335-2247, or you may contact me.

Sincerely,

Dennis M. Drake, Chief  
Air Quality Division  
517-373-7069

cc: Mr. Russell J. Harding, Director, MDEQ  
Mr. Arthur R. Nash Jr., Deputy Director, MDEQ  
Ms. Theresa Walker, MDEQ

# Appendix 3

## New Jersey Department of Environmental Protection Response

September 26, 2002

Mr. John M. Bishop  
Project Manager  
Office of the Inspector General  
USEPA  
Room 113  
EPA Administration Building  
79TW Alexander Drive  
Research Triangle Park, N.C. 27711

Re: Comments of New Jersey Department of Environmental  
Protection on Open Market Trading Inspector General  
Draft Report

Dear Mr. Bishop:

Enclosed please find the comments of the New Jersey Department of Environmental Protection on the Draft Report of the USEPA Inspector General regarding Open Market Trading programs. We thank you for the opportunity to review the document and provide comments to the Office of the Inspector General. As I will be out of the office for the next four business days, I ask that you contact Lisa Jackson, Assistant Commissioner of Compliance and Enforcement, if you have questions about the document or require assistance. Assistant Commissioner Jackson will coordinate whatever assistance you need. She can be reached at (609)777-0122.

Thank you.

Sincerely,

Catherine A. Tormey  
Counselor to Commissioner

c: Lisa Jackson, Assistant Commissioner  
Samuel Wolfe, Assistant Commissioner

## General Comments

The report points out a number of inconsistencies between the New Jersey OMET program and the EPA's 2001 Economic Incentive Program (EIP) Guidance. The EIP Guidance was not issued until several years after New Jersey promulgated its OMET program.

The report also refers to New Jersey's failure to require the use of EPA-approved quantification protocols. EPA has not approved open market trading quantification protocols, and has not offered the service of approving protocols developed by market participants or states (although several EPA staff did informally provide helpful information pertaining to acceptable quantification in specific cases). New Jersey's rules do require that any quantification protocol used "conform with all applicable guidance issued by the EPA." New Jersey's rules also include detailed requirements governing how quantification must be performed.

The report inaccurately describes the state's program as "buyer beware." The program allows credit users to rely on a third-party verification - if verified credits are eventually found to be invalid, the user is not on the hook for penalty liability, but simply has to replace the bad credits with valid ones. This is the opposite of "buyer beware" - which would leave the user liable for penalties for invalid credits, regardless of whether the user had relied on a third-party verification or even if the user had conducted its own thorough due diligence. There is no requirement that "credit purchasers would ensure the validity of emissions credits prior to their purchase and use."

### Chapter 1

#### Current Status:

Footnote 2 referenced in Table 1.4 indicates that New Jersey was "requesting termination" of its OMT program in an August 2002 letter. No such request was made to EPA.

### Chapter 2

#### Key Provisions of 2001 Guidance Not Followed In Designing or Reviewing OMT Programs

In the row of Table 2.2 pertaining to quantification protocols, it should be noted that the New Jersey program requires that any protocol used "conform with all applicable guidance issued by the EPA."

### Chapter 3

#### Different Approaches Used to Evaluate OMT Data

1. In the second sentence the draft states that New Jersey relied on both third party contractors and verifiers to evaluate OMT data. In fact the New Jersey program relies on third party verifiers who must be either a P.E. or C.P.A. licensed in New Jersey. The words "contractors and" should be deleted from the sentence, because no other "contractors" can verify credits.
2. The paragraph entitled "New Jersey" needs revision.

New Jersey: In designing its OMT program, New Jersey decided to privatize important aspects of the program, including the evaluation of OMT data underlying trades. Rather than having state regulators analyze the data underlying the generation or use of credits, New Jersey relied on third-party verifiers to do this work. New Jersey officials said that they relied on third-party verifiers because the data analysis was resource-intensive, and no state monies were budgeted for state regulators to perform this work. In addition, the statute authorizing the state's OMT program required the state to "consider the role of a third party in the banking, verification, validation of use, enforcement, and program audits associated with emissions reduction credits, and to the maximum extent possible, create and preserve opportunities for private sector participation in any emissions trading program. . ." The decision to rely upon third-party verifiers was therefore consistent with the direction set by state statute and with the direction set by state budgets.

#### EPA-Approved Protocols Not Used

1. The first sentence refers to a random sample of 84 OMT credit transactions and states that none of these transactions employed EPA-approved quantification protocols. It would be more accurate to say, "We reviewed a random sample of 84 OMT credit transactions. Since no applicable EPA-approved quantification protocols were available at the time of those transactions, none of them relied on such protocols."

#### Emission Measurement Methods May Not Always Be Adequate

1) The points being made in this section diverge from the position of EPA's January 2001 Economic Incentive Program Guidance which reads:

" As a general principle, when quantifying the amount of emission reductions generated or needed for compliance, a source must use measurement techniques no less accurate than those required for the source to demonstrate compliance. Sources are not required to use measurement techniques more accurate than those required for the source to demonstrate compliance."

#### New Jersey Approach Emphasized "Buyer Beware" Philosophy

1) The above heading is not only inaccurate; it also seems unrelated to the subject of the section. Something like "New Jersey Approach to Registry Operation" seems more to the point.

2) Please replace the first sentence with the following: "In designing its OMT program, New Jersey decided to privatize important aspects of the program, including the operation of a registry of all credit transactions."

3) The second paragraph in this begins "Due at least in part to the 'Buyer Beware' approach used by New Jersey..." The relevance of this opening clause to the substance of the paragraph is unclear. The paragraph discusses how New Jersey required that trades be documented, and certain program failures in that regard. None of this has anything to do with Buyer Beware.

#### Appendix 1

#### New Jersey - Open Market Emissions Trading

- 1) To make it more accurate, I recommend modifying the third sentence in the first paragraph as follows: The New Jersey Department of Environmental Protection's rules created a 90 day window-of-opportunity for companies with "early" reductions (i.e., reductions made on or after May 1, 1992, but before August 2, 1996, when the OMET rules became effective), including [grandfathered the] Demonstration Project participants[, protocols, and] to generate OMET credits [into its OMET program] based on these reductions, but only if the generation satisfied the applicable requirements in the rule, including those for quantification protocols.
- 2) The fourth sentence in the first paragraph uses the phrase "model project"; for consistency of terminology, this should probably be revised to "Demonstration Project."

## Appendix 2

### Objectives, Scope and Methodology

#### Evaluation Process

In the last paragraph, the Inspector General states: "However, due to the State of New Jersey's refusal to grant us access to certain OMT-related documents in their possession which they withheld claiming (1) attorney-client privilege, and (2) enforcement sensitive privilege, our evaluation scope was limited." We would prefer that the sentence read that NJDEP "declined to provide access to a limited number of documents that the Department asserted were privileged based upon advice of counsel." In addition, we believe it is appropriate to acknowledge in that sentence or paragraph that the State maintained and provided to the Inspector General reviewers a Privilege Log of the limited number of documents not provided for review because of privilege assertions.

# Appendix 4

## Overview of New Jersey and Michigan OMT Programs <sup>10</sup>

### ***New Jersey - Open Market Emissions Trading*** <sup>11</sup>

The New Jersey Open Market Emissions Trading program became operational in August 1996. Prior to establishing its OMT program, New Jersey participated in the 1992-1996 Emission Reduction Credit Demonstration Project conducted by the Northeast States Coordinated Air Use Management and Mid-Atlantic Regional Air Management Association. After a public notice - and - comment rule making process, the New Jersey Department of Environmental Protection allowed the Demonstration Project participants, protocols, and credits to be included in its OMT program. The Demonstration Project participants generated the majority of credits traded and used within the OMT program during the Demonstration Project. In the New Jersey OMT program, credits have an unlimited life; that is, the credits are available for use for an unlimited timeframe. The program restricts trading to nitrogen oxides and volatile organic compounds. New Jersey OMT regulations specifically forbid the generation of credits by the closing of facilities or product lines (shutdown credits). Credits generated during the non-ozone season (winter) cannot be used during the ozone season (summer).

To ensure compliance, the New Jersey OMT regulations rely heavily on credit participants' self certification and credit verification by third parties. New Jersey follows a "buyer beware" philosophy, which places the burden of verification on users of credits. In New Jersey, the OMT participants may not use credits until verified by an engineer or certified public accountant who is not employed by the credit generator. The OMT credit verification process is intended to ensure that the credits are real, surplus, and properly quantified. The user must also purchase and retire an additional 10 percent of the total credits used for the benefit of the environment.

Participants earn credits based on emission quantification protocols, which define the process for generating and measuring emission reductions. OMT regulations do not require these protocols to be approved by the state or EPA, though an existing EPA-approved protocol that meets OMT regulations must be used, if applicable. Otherwise, the protocols must meet criteria in the state OMT regulations.

Personnel from the New Jersey Department of Environmental Protection did not administer or monitor the OMT program directly. New Jersey contracted with a third-party to create and maintain the electronic OMT database (Registry) and its supporting documentation. By accessing the Registry, the public and government offices could track the generation, verification, transfer, use, and retirement of credits. The Registry contract did not involve State

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<sup>10</sup> The Michigan OMT program is based on Emission Reduction Credits where 1 credit equals 1 ton of emissions. The New Jersey OMT program is based on Discrete Emission Reductions Credits where 1 credit equals 100 pounds of emissions. For this appendix, we used the generic term "credit" for both.

<sup>11</sup> The New Jersey OMT regulations also address the trading of credits under the Greenhouse Gas program. The EPA Economic Incentive Program guidance does not include greenhouse gases (such as carbon dioxide and methane); therefore, we did not include this Greenhouse Gas program in our evaluation of OMT programs.

funds. The OMT regulations required participants to submit all notices to the contractor for processing and data entry into the Registry. The fees paid to the contractor by the participants constituted the contract revenue. While the information in the Registry and documentation that supported it belonged to the State, the software driving the Registry belonged to the contractor. The Registry operator ensured that required data was provided, but did not otherwise review the data and information provided for accuracy or reliability.

### ***Michigan - Emission Averaging and Emission Reduction Credit Trading***<sup>12</sup>

Michigan implemented its OMT program in 1996. The Michigan program allows credit generation, trading, and use for six pollutants: nitrogen oxide, volatile organic compounds, carbon monoxide, sulfur dioxide, particulate matter, and lead (although lead is not allowed by EPA's Economic Incentive Program Guidance). Environmental benefit is obtained by retiring 10 percent of the credits when they are entered into the Registry and by limiting credit life to 5 years. Credits generated during the non-ozone season cannot be used during the ozone season.

The Michigan OMT program allows the generation of shutdown credits, which is specifically prohibited by the 2001 Economic Incentive Program Guidance. Michigan's OMT regulations define shutdown as, "the permanent cessation of operation of a source, process, or process equipment for any purpose. . . ." The participant can generate credits every year for a period of 5 years after the shutdown.

If a Federally approved protocol exists, the Michigan program requires that the approved protocol be used. Otherwise, EPA approval of quantification protocols is not required by the Michigan program. However, State completeness reviews do include a review of quantification protocols.

The Michigan OMT program is administered in-house by Michigan's Department of Environmental Quality. The State maintains the on-line Registry and documentation, and performs any necessary reviews. The State performs a standardized review of all notices (generation, trade, use, and retirement), called a Tier 1 review. If the amount of credits are more significant, Michigan's regulations require a second, more detailed, Tier 2 review (generation and use only). The review process must be completed before the credits are entered into the public Registry.

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<sup>12</sup> We did not include emission averaging in the scope of this evaluation.

# Appendix 5

## Details on Scope and Methodology

EPA OIG conducted evaluation fieldwork in the States of Michigan and New Jersey; EPA Regions 2 and 5; and at EPA's Headquarters Air and Enforcement Offices. These EPA offices include the Office of Policy Analysis and Review, the Office of Air Quality Planning and Standards, and the Office of Enforcement and Compliance Assurance.

New Jersey and Michigan were selected as the State OMT programs for review because (1) EPA Office of Air Quality Planning and Standards staff indicated that these States had the most active OMT programs; (2) both States had already submitted State Implementation Plan revision requests to EPA which requested Federal approval of their OMT programs; and (3) EPA had allowed Michigan and New Jersey to operate OMT programs for over 5 years under EPA's enforcement discretion policy. The policy described in the last item allows certain clean air-related activities to take place without incurring a Federal enforcement action, as long as the activities are envisioned to be approved in the future through EPA approval of a State Implementation Plan revision, or other similar Federal approval mechanisms. As of August 2002, neither State program had been Federally approved.

Within the States of New Jersey and Michigan, and within EPA Regions 2 and 5, respectively, we discussed OMT issues with policy, program, oversight, inspection, compliance, and enforcement managers and staff, and we obtained and reviewed related files and correspondence on key OMT implementation issues dating back to the inception of the programs in both States.

We also sought any studies or evaluations demonstrating the effectiveness of OMT programs, in particular cost-benefit studies or evaluations of the assertion that OMT programs achieve more environmental benefits at less cost.

Within EPA, we interviewed program staff at the national and regional levels to gain an understanding of EPA's policies and guidance concerning open market trading. We closely examined EPA's Economic Incentive Program Guidance, which we accepted as the primary criteria to assess the state programs.

We contacted industry associations and environmental groups for information and input on OMT issues, as well as key state and local agency associations. We also obtained information and input on OMT issues from selected participants in the two State OMT programs we reviewed. In Michigan, we met with a major automotive manufacturer and a manufacturer of automobile mirrors. Both companies participated in the State OMT program, one as a credit generator and one as a credit user. In New Jersey, we met with two electric utility companies – one utility both generated and used OMT credits, while the other used OMT credits.

The evaluation was generally performed in accordance with the *Government Auditing Standards* issued by the Comptroller General of the United States as they relate to economy, efficiency, and program results audits. However, due to the State of New Jersey's decision to not grant us access to certain OMT-related documents in their possession based on advice of counsel, our evaluation scope was limited. As part of this evaluation, we assessed compliance with applicable laws and regulations. Because of severe problems within the New Jersey program,



we did not perform a review of internal controls. Except as noted in this report, we did not identify instances of noncompliance with the Clean Air Act.

### ***Sample Selection***

To evaluate the OMT program according to the objectives listed above, we reviewed a randomly selected sample group of (1) 42 trades from a total universe of 451 trades in Michigan, and (2) 42 trades from a total universe of 341 trades in New Jersey. We reviewed three major types of OMT transactions: credit generation, credit transfers, and credit uses. We obtained the electronic OMT databases from each State. We did not independently assess the quality of the database output as a whole. After we reformatted both databases, we used Windows Integrated Data Extraction and Analysis software to extract three sample sets of credits (Generation, Transfer, and Use) for each State. A discussion of the sampling methodology for each State follows. Additional discussion of the sampling approach, methodology, and results is contained in Appendix 6.

## **Appendix 6**

### **OMT Sampling Procedures and Results**

We reviewed a randomly selected group of trades in the Michigan and New Jersey OMT programs. This was done to determine, on a sample basis, the extent of (1) use of EPA-approved emissions quantification protocols to calculate tradeable emissions credits in selected states' OMT programs, and whether accurate, reliable data underlie OMT trades in these programs; and (2) EPA and state compliance assurance, enforcement, and oversight activities relative to OMT trades, and whether OMT programs affect the ability of regulatory agencies to detect and/or deter noncompliance.

New Jersey and Michigan provided electronic copies of both States' OMT program activity database. We did not independently assess the databases for quality, accepting the information as provided for use in sample selection.

Three major types of credit transactions in the OMT trading programs were sampled – credit generation, credit transfers, and credit use. We used Windows Integrated Data Extraction and Analysis software to randomly select trades for review. A total of 14 sample items were selected for each of the 3 types of OMT transactions to be reviewed, for a total of 42 sample items selected. The samples selected were based on a 90 percent confidence level, which was deemed appropriate for the questions posed and the fact that we would be generalizing our findings only to these OMT programs at the state levels for the respective States, and not to other states or other regions.

For the Michigan OMT program, which had a total universe of 451 trades, a total of 42 sample items were selected, 14 in each of the three OMT transactions areas to be reviewed, as noted. The State of New Jersey had experienced problems with its OMT Registry and its contractor during the OIG evaluation. The contractor who operated the New Jersey OMT Registry and provided maintenance of the OMT records ceased operations in September 2001. New Jersey was not able to obtain the electronic databases and hard copy files for approximately 4 months. Since we were unsure of the completeness of the OMT files obtained, we selected a total of 60 sample items from a total universe of 341 trades for the New Jersey OMT program, 20 for each of the 3 transaction areas. The sample selections were numbered consecutively. In the event that a sample selection item hard copy file was not available, we moved to the next consecutively numbered sample item as a substitute until such time as 14 sample files were obtained for each OMT transaction reviewed. We were able to find 14 sample items for each OMT transaction reviewed for the State of New Jersey.

The New Jersey database for credit generation was adjusted to remove one credit major generation source. During the course of our evaluation, PSEG, the company which generated the majority of emission credits in the New Jersey OMT program, entered a settlement agreement with EPA, the U.S. Department of Justice, and the State of New Jersey, to remove over 372,380 emissions credits from the New Jersey OMT program (about 18,600 tons of emissions). As such, this company and its OMT emissions credit trading activities were not included in our credit generation sample but were separately reviewed. In the Michigan database, the credit use database file included both use and retirement transactions. Since we were reviewing the credit

use function only, the retirement transactions were removed from the data used to select the credit use sample for Michigan.

## ***New Jersey***

The New Jersey OMT Registry contractor ceased operation of the Internet Registry site in September 2001. The Registry contractor also maintained the OMT records. New Jersey had problems obtaining the OMT Registry database, as well as the OMT records. New Jersey had also informed us that they had not systematically reviewed the OMT database or the records since the OMT program began operations in 1996. Based on this information, we decided that our sampling program for New Jersey should provide for substitute sample selections in case some OMT files were not available. Therefore, 3 sets of 20 samples were selected from which 14 in each set would be used. We instructed the State to produce the files supporting the first 14 samples. If the file for a sample could not be found, the State was advised to take the next sample from the subject sample set until they had 14 documented samples for each of the 3 transactions; credit generation, credit transfer, and credit use. A total of 42 OMT transactions were reviewed in New Jersey.

For New Jersey's OMT generation sample set, PSEG and its OMT trading activities were separately reviewed because, as discussed above, PSEG entered into a settlement agreement with EPA and the U.S. Department of Justice to remove over 18,600 tons of emissions credits from the New Jersey OMT program.

The New Jersey OMT program included credits related to the State's greenhouse gas program. Since the greenhouse gas program was outside the scope of our evaluation, we did not include these credits in the universe from which we extracted our sample sets.

Using the substitution formula discussed previously, we were able to locate the official files on 42 sample items, 14 in each of 3 OMT transaction areas to be reviewed. The New Jersey OMT program requires that OMT participants provide notice of the OMT transactions that they plan to complete. We checked each sampled file to ensure that the correct notices were provided. One of the 42 sample items, a use transaction, did not include a copy of the notice of use. We did not find that any of the emissions quantification protocols required for generation and use transactions had been approved by EPA, contrary to the 2001 Economic Incentive Program Guidance. New Jersey OMT regulations require that OMT emission credits be verified as real and surplus prior to use. We found that all of the credits had been verified as required prior to use. There was also verification of the credits involved in the sampled transfer transaction files, as well as in 7 of the 14 sampled generation files, although verification was not required for generation and transfer transactions. When emission credits are used during an ozone season, the credits used must have also been generated during an ozone season. Generated credits must be identified according the season when generated, ozone or non-ozone. All of the generation files identified the season when credits were generated, as did the transfer files. We did find that three of the use transactions incorrectly used non-ozone season credits during the ozone season.

We also checked to see if the sampled transaction files had corresponding data entries in the OMT Registry, the Internet database that provided information about OMT activities to the public, New Jersey Department of Environmental Protection, and EPA. We found that 10 of the transfer activities and 8 of the use activities had not been recorded in the OMT Registry. The following table summarizes the sample findings for New Jersey.

**New Jersey OMT Sample Results**

	<b>Notices of OMT Activity</b>	<b>EPA Approved Protocol</b>	<b>Verification by Third Party</b>	<b>Ozone vs. Non-Ozone</b>	<b>Listed In OMT Registry</b>
Generation	14	0	7	14	14
Transfer	14	N/A	14	14	4
Use	13	0	14	11	6

**Michigan**

The full title of the Michigan program is Emission Averaging and Emission Reduction Credit Trading. Since our evaluation was limited to open market trading, we did not examine any items related to Emission Averaging. Michigan maintained both credit use and credit retirements in the same database file. We removed the credit retirement transactions from the database in order to review credit uses only. The random sample for credit uses was selected from the database after the removal of credit retirement transactions. We randomly selected 14 transactions for each OMT activity we reviewed – credit generation, credit transfer, and credit use. A total of 42 sample transactions were reviewed in Michigan.

The Michigan OMT regulations require that OMT participants provide notice of OMT transactions that they plan to complete. We checked the sample files for the generation, transfer, and use transactions to ensure that the required notices were provided. We could not find four notices related to the transfer transactions. The Michigan Department of Environmental Quality performs a completeness review for all OMT transactions, issuing a completeness letter when the State review of the OMT activity finds the documentation of the OMT activity is adequate. Tier 2 reviews are performed for all transactions; Tier 2 reviews, which are more in depth, are triggered at identified levels of emissions for generation and use transactions.

We found that one sample file in the generation transactions, one sample file in the use transactions, and five of the transfer transactions lacked evidence of the Tier 1 review. We found evidence of the Tier 2 review for all of the sample files where required. Copies of the completeness letter were missing from four of the generation transactions sample files, five of the transfer sample files, and two of the use sample files. However, we did not find that any of the quantification protocols for generation and use transactions had been approved by EPA, though the Tier 1/Tier 2 reviews by Michigan did include a review of the quantification protocol. Michigan allows the generation and use of credits generated by shutdown of facilities or curtailment of facility operations, which is not allowed by the 2001 Economic Incentive Program Guidance. Six of the sampled generation transactions showed that the emission credits were generated by shutdown activities. One of the transfer files involved transfer of shutdown credits. One of the use transactions used shutdown credits. We found that all of the generation and use sample transactions were entered into the Michigan OMT Registry on the Internet. We could not find any transfer transactions on the Registry. In its response to our report, Michigan officials indicated that a software problem occurs when the database is updated, but that the transfer

information has been made available on the Registry. The following table summarizes the sample findings for Michigan.

**Michigan OMT Sampling Results**

	<b>Notices of OMT Activity</b>	<b>Tier 1 Review/ Tier 2 (If Req.)</b>	<b>Completeness Review Letter</b>	<b>EPA Approved Protocol</b>	<b>Ozone vs. Non-Ozone</b>	<b>Shut-down Credits</b>	<b>Listed In OMT Registry</b>
<b>Generation</b>	14	13/10	10	0	14	6	14
<b>Transfer</b>	9	10/NA	10	N/A	14	1	0
<b>Use</b>	14	13/7	12	0	14	1	14

# Appendix 7

## OIG Memorandum Regarding Michigan Shutdown Credits



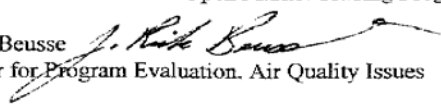
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL  
1200 Pennsylvania Avenue, NW  
Room 3301 NE Mall  
Washington, DC 20460

April 5, 2002

### MEMORANDUM

**SUBJECT:** Observations on the Use of Shutdown Credits in Michigan's Air Emissions Open Market Trading Program

**FROM:** J. Rick Beusse   
Director for Program Evaluation, Air Quality Issues

**TO:** Jeffrey R. Holmstead  
Assistant Administrator for Air and Radiation

In connection with our in-process evaluation of EPA's Air Emissions Open Market Trading (OMT) Program, we recently conducted fieldwork at Michigan's Department of Environmental Quality. Below are observations we wish to bring to your immediate attention.

#### Use of Shutdown Credits May Be Contrary to EPA Guidance

Michigan's Emission Reduction Credit Trading program (hereafter referred to as its OMT program) allows the use of "shutdown" credits in attainment areas. (In essence, shutdown credits result when permitted sources reduce emissions by closing facility operations or product lines). In March 2002, EPA indicated that it intends to approve Michigan's OMT program, as revised in 1999, including the use of shutdown credits. The basis for approving OMT programs since January 2001 has been EPA's "Improving Air Quality With Economic Incentive Programs" guidance document, EPA-452/R-01-001, January 2001 (hereafter referred to as EIP guidance), which does not characterize emissions reductions from shutdowns as "surplus." According to the EIP guidance, before emissions credits are eligible for inclusion in an emissions trading program, they must not only be surplus but must also meet three other fundamental integrity elements (quantifiability, enforceability, and permanence). In apparent contradiction with the EIP guidance, EPA considers Michigan's shutdown reductions as eligible for inclusion as credits in the State's OMT program.

While in Michigan, we observed that approximately 23 percent of the State's total open market emission credits generated -- and 80 percent of its volatile organic compound (VOC) emission credits generated -- have resulted from shutdowns. Further, we noted that shutdown credits have been used in Michigan's program. Under the Michigan OMT program, closed facilities are allowed to generate emission credits for 5 years from the year in which the facility closes. Since

OMT credits under Michigan's program are valid for 5 years after the year in which they are generated, closed facilities can generate credits - - and credit buyers can use those credits - - over a period of almost 11 years after the facility's operations are closed.<sup>1</sup>

Additionally, under Michigan OMT rules, when permitted sources close facility operations in Michigan and receive emissions credits for shutdowns, these same or similar facility operations may be restarted in other states (if allowed by the applicable state(s)). In this scenario, sources could be, in effect, shifting their air emissions elsewhere while generating shutdown credits in Michigan, which then may also be sold to other companies in Michigan. EPA has acknowledged that, under this scenario, overall emissions may increase and that "... this is clearly a detriment to the environment."

#### Key Events in EPA's Consideration of Michigan's Proposed OMT Program

We recently discussed the above matters with key officials from the Air Programs Branch, Air and Radiation Division, EPA Region 5, and the Office of Air Quality Planning and Standards. We learned that Region 5 initially opposed the inclusion of shutdown credits in Michigan's 1996 OMT program proposal. However, in 1997, the Office of Air and Radiation took the position that the use of shutdown credits could be allowed under EPA policy if Michigan met certain conditions. Based on this position from EPA Headquarters, Region 5 has offered Michigan three options: (1) prohibit shutdown credits; (2) allow shutdown credits but prohibit their use in non-attainment or maintenance areas; or (3) demonstrate that the use of shutdown credits would not be contrary to their attainment or maintenance plans. Michigan chose option 2 - - to allow the statewide generation of shutdown credits while prohibiting their use in non-attainment or maintenance areas. However, option 2 appears to be contrary to the final EIP guidance issued in January 2001.

Since EPA tentatively accepted Michigan's shutdown credit proposal prior to the issuance of EPA's January 2001 EIP guidance, Region 5 chose not to require Michigan to modify its proposal based on this subsequent EPA guidance at that time. We understand that Region 5 anticipates giving final approval to the existing Michigan proposal in the near future with the possibility of revisiting the issue of shutdown credits in future revisions of Michigan's OMT program.

- - - - -

Given the precedent-setting nature of approving open market trading programs, the magnitude and longevity of shutdown credits in the Michigan program to date, and the difficulty of withdrawing federal approval of State Implementation Plan revisions once made, we believe that EPA's final approval of Michigan's OMT program should include a careful consideration of the shutdown credit issue at the EPA headquarters level. Once the shutdown credits are "grand-fathered" into a state's program, they may be more difficult to eliminate later. Additionally, once a precedent is established that allows the generation and use of shutdown credits in open market trading programs, other states may wish to adopt similar policies.

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<sup>1</sup>The maximum period would be 10 years and 11 months.

If you or your staff have any questions, please call me at (919) 541-5747, or John Bishop, RTP Audit Manager, at (919) 541-1028.

cc: John Seitz, Director, OAQPS  
Thomas V. Skinner, Regional Administrator, EPA Region 5



## **Appendix 8**

### **Details of PSEG Settlement**

On January 24, 2002, the U.S. Department of Justice, EPA, and State of New Jersey announced a major Clean Air Act settlement agreement, in the form of a \$337 million Consent Decree, with PSEG Fossil LLC, a large New Jersey electric power generation company. The final Consent Decree was approved and entered by the U.S. District Court for the District of New Jersey on July 30, 2002.

In the Consent Decree, Department of Justice, EPA and New Jersey alleged that PSEG violated the Clean Air Act's Prevention of Significant Deterioration and Nonattainment New Source Review Requirements and New Jersey's State Implementation Plan. Specifically, Department of Justice, EPA, and New Jersey alleged that PSEG made major modifications at its Hudson and Mercer coal-fired power generation facilities without installing necessary pollution controls and without obtaining proper permits that would have resulted in lower emission limits and reduced emissions. The Hudson and Mercer facilities were the same coal-fired facilities that PSEG had used to claim emissions credits for reducing emissions beyond the required levels.

Settlement negotiations in 2001 and 2002 between EPA, the U.S. Department of Justice, and the State of New Jersey with PSEG concerning the alleged New Source Review violations did not originally address the issue of questionable PSEG-generated OMT credits. In discussions with EPA Region 2 enforcement officials during our fieldwork at EPA Region 2 offices, the OIG raised issues concerning the validity of PSEG's credits, their possible disposition, and the impact on EPA's ability to enforce against violators in future cases involving the OMT credits generated by PSEG. Since PSEG had generated OMT credits at both facilities, OIG questioned the validity of the credits because reduced emission levels indicated that few, if any, credits could have been generated if the plants were, indeed, subject to New Source Review. EPA Region 2 officials agreed to look into the issue of OMT credits for this source. Consequently, in the settlement reached in January 2002, PSEG agreed to retire 372,380 OMT credits (about 18,600 tons of pollutants) of the 647,504 it had generated under the OMT program. The credits to be retired represented 90 percent of the generated credits listed on the registry as available for use as of January 2002 and had an estimated market value of over \$16 million.

PSEG's OMT credits not retired as a result of the negotiations mentioned above were considered valid by EPA Region 2. PSEG retained 75,440 credits of those for their own use; the other credits had been transferred to other OMT program credit users earlier. Those other users had either already used the credits or continued to hold them for future use.

# Appendix 9

## Five Attributes of Environmental Data Quality

According to EPA's data quality objectives order (Order 5360.1), five attributes of data should be known before the data is used for regulatory decisions. These are described below.

Attribute	Definition
<b>Precision</b>	Precision is the average amount of variability experienced in measuring emissions; it is sometimes expressed as a relative standard deviation, such as plus or minus 15 percent. The lower the percentage, the more precise the data.
<b>Accuracy</b>	Accuracy refers to the amount of bias that a measurement may have. For example, an improperly calibrated piece of testing equipment may bias a reading.
<b>Completeness</b>	Completeness refers to the number of readings that must be taken before a confident judgment can be made. For example, if 4 of 5 readings yield the same information, decision makers may say that a reliable profile of the facility's emissions exists.
<b>Representativeness</b>	Representativeness involves a qualitative assessment as to whether a reading fairly represents the emissions from a facility. Factors that could affect representativeness include the methods used and weather conditions at the time the readings were taken.
<b>Comparability</b>	Comparability is the ability to fairly compare emissions results from the same facility at different times. Using different sampling and testing equipment, or different methodologies, could result in an inability to make such comparisons.

# Appendix 10

## EPA Region 2 Letter to New Jersey



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866

JUN 24 2002

Commissioner Bradley M. Campbell  
New Jersey Department of Environmental Protection  
401 E. State Street, 7<sup>th</sup> Floor  
P.O. Box 402  
Trenton, NJ 08625-0402

Dear Commissioner Campbell:

This is to follow up on our recent discussion with respect to the current and future direction of the State of New Jersey's Open Market Emissions Trading (OMET) program.

As you know, over a year ago EPA proposed to approve New Jersey's OMET program as a State Implementation Plan (SIP) revision. I believe we both agree that since then a number of problems have surfaced that must be addressed before the OMET program could be approved into New Jersey's SIP.

In September 2001, the company contracted by New Jersey to operate the OMET registry shut down the Internet-accessible registry and telephone hotline. Since public availability and accountability are fundamental to proper implementation and oversight of the OMET program, the lack of the registry impedes New Jersey's and EPA's oversight and enforcement of the program.

In addition, in February 2002 the U.S. Department of Justice on behalf of EPA, together with the New Jersey Department of Law on behalf of New Jersey Department of Environmental Protection, lodged a consent decree with PSEG Fossil, LLC (PSEG), regarding alleged violations of New Source Review requirements as part of EPA's coal-fired power plant enforcement initiative. During the course of resolving this matter, serious questions were raised about the effectiveness of the OMET program's credit validation process and about its impact on potential enforcement actions. In addition to highlighting these problems, the PSEG agreement resulted in a significant reduction of available OMET credits.

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Another concern is that sources that have relied on credits from the New Jersey OMET program to comply with the New Jersey SIP are currently out of compliance with the SIP until and unless the proposed SIP approval of the OMET program is finalized. Even if the program were approvable, it is questionable whether the credits they purchased are still valid. These sources, many of which relied on the program in good faith, have to be in compliance with the existing SIP requirements.

It is important that we meet quickly to decide how to address these issues, including our approach to those sources that have relied on the program for compliance purposes.

We remain committed to working with you to resolve these problems and develop an open market trading program that provides the flexibility that permittees need while protecting air quality. I will call you soon so that we can arrange a meeting.

Sincerely,



William J. Muszynski, P.E.  
Deputy Regional Administrator

# Appendix 11

## New Jersey Response to EPA Letter



James E. McGreevey  
Governor

State of New Jersey  
Department of Environmental Protection  
PO Box 402  
Trenton, NJ 08625-0402

Bradley M. Campbell  
Commissioner  
Tel. # (609) 292-2885  
Fax # (609) 292-7695

August 13, 2002

Jane M. Kenny, Regional Administrator  
United States Environmental Protection Agency  
Region 2  
290 Broadway  
New York, New York 10007-1866

Re: New Jersey Open Market Emissions Trading Program

Dear Administrator Kenny:

I am writing to respond to Deputy Regional Administrator Muszynski's June 24, 2002 letter, regarding the current and future direction of New Jersey's Open Market Emissions Trading (OMET) Program.

Our review of the OMET program at the outset of the McGreevey Administration has led me to conclude that the program has failed. Several aspects of the program's original design and implementation contributed to that failure:

- The program's ostensible clean air benefits were limited by the failure to include safeguards to ensure that the program would in fact reduce emissions.
- The prior Administration had privatized the development and operation of the program's registry of credit transactions and telephone hotline; as Mr. Muszynski pointed out, the company that the State had selected for these tasks shut down both the registry and the hotline last fall.
- The prior Administration had also chosen to privatize the work of verifying the validity of credits under the program. A recent enforcement investigation raised questions about whether that work had been performed correctly and effectively.
- Another enforcement investigation revealed that some facilities may have built a portion of their compliance strategy entirely on the prospect of using emission credits, even though there has never been a guarantee that they would find a willing seller of the credits needed for compliance.
- The program allowed credits to be based on emission reductions that occurred years before the credits are actually used. That long time lapse undermined the credibility of the program.

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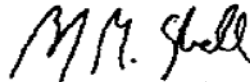
These problems with the OMET program, some of which go beyond what the EPA identified in its January 9, 2001 proposed approval of the State Implementation Plan (SIP) revision for the program, have led me to conclude that New Jersey should terminate the OMET program, while protecting the expectations of those regulated parties that currently hold credits or that have been using credits. Our next step will be to publish a notice in the New Jersey Register, outlining our plans for the program and calling a public meeting to discuss that direction.

Your letter states that the users of credits under the OMET program are vulnerable to enforcement action because the SIP revision for the program has not received EPA approval. When OMET market participants have fully complied with the State regulations that established the OMET program, there is no violation of State law and no basis for State enforcement action.

However, I understand that the EPA may be contemplating its own enforcement actions against credit users. We would like to work with you to make such actions unnecessary when the credit users have fully complied with the State rules. This could be achieved by EPA's issuance of a limited approval of the pending SIP revision, which would merely protect those regulated parties that have used or may use credits before the program is terminated through rulemaking.

To ensure that all market participants learn of these plans at about the same time, I am forwarding copies of this letter to them. I would be pleased to meet with you and your staff to discuss this further.

Sincerely,



Bradley M. Campbell  
Commissioner

c: OMET Market Participants

# Appendix 12

## Region 2 Response Letter to New Jersey



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866

SEP 10 2002

Commissioner Bradley M. Campbell  
New Jersey Department of Environmental Protection  
401 E. State Street, 7<sup>th</sup> Floor  
P.O. Box 402  
Trenton, NJ 08625-0402

Dear Commissioner Campbell:

This is in response to your August 13, 2002 letter in which you reviewed the problems in New Jersey's Open Market Emissions Trading (OMET) Program and concluded that the State should terminate the program as currently designed. You also suggested that a limited approval by EPA could be a means of addressing non-compliance of sources that have used or are using OMET credits until such time as the State terminates the OMET Program.

A limited approval of the pending revision to the State Implementation Plan (SIP) is not a viable option under 40 Code of Federal Regulations, Part 51. EPA reserves the limited approval approach to those instances where the problems in the regulation or program are discrete and separable and don't affect the outcome of the program, which is not the nature of the problems identified here. It is clear from your response that you do not want EPA to proceed with the final SIP rulemaking on New Jersey's OMET Program as it is currently designed and we will publish a notice in the Federal Register withdrawing EPA's proposed conditional approval of the OMET Program in the near future.

EPA stands ready to work with New Jersey to craft a program that achieves air quality benefits earlier and at a lower cost than more conventional approaches. I know that our staff are scheduled to discuss ways to address compliance issues with sources that currently hold credits or that have been using credits to comply with SIP approved regulations. As we discussed, in any such efforts we would be sensitive to the fact that these sources used such credits in a good faith effort to comply with state and federal regulations.

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I look forward to working closely with you to resolve any remaining issues and in planning New Jersey's future use of innovative approaches to pollution control.

Sincerely,

A handwritten signature in black ink, appearing to read "William J. Muszynski". The signature is fluid and cursive, with a large initial "W" and "M".

William J. Muszynski, P.E.  
Deputy Regional Administrator



# Appendix 13

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