

AMENDMENT #1 (REGARDING INTERSTATE TRADING) TO THE  
MAY 18, 1993, MEMORANDUM OF UNDERSTANDING  
AMONG THE STATES OF THE OZONE TRANSPORT COMMISSION ON  
INTRASTATE NO<sub>x</sub> EMISSION OFFSET TRADING PROGRAMS

WHEREAS the States of the Ozone Transport Commission (OTC) are required to obtain emission credits, or offsets, to compensate for the emissions of new sources or major modifications of existing sources within the Ozone Transport Region (OTR); and

WHEREAS the States of the OTC have historically encouraged the siting of clean new sources, thereby facilitating simultaneous environmental protection and economic growth; and

WHEREAS OTC has endorsed and implemented many forms of market-based air pollution control mechanisms, as a way of providing regulatory flexibility and a means of reducing compliance costs; and

WHEREAS OTC approved a Memorandum of Understanding (MOU) on Intrastate NO<sub>x</sub> Emission Offset Trading Programs on May 18, 1993 (known as the 1993 MOU), which was signed by all OTC States; and

WHEREAS in the 1993 MOU, OTC member States agreed to develop intrastate offset programs and policies that provide compatibility with a possible interstate NO<sub>x</sub> emission offset trading program; and

WHEREAS in the 1993 MOU OTC member States agreed to continue to cooperate to make their individual programs compatible; and

WHEREAS in the 1993 MOU OTC member States agreed that to the greatest extent practicable their individual intrastate emission trading programs would reflect eleven specific common elements included in the 1993 MOU; and

WHEREAS in the 1993 MOU OTC member States agreed that each member jurisdiction could engage in emissions trading with other jurisdictions prior to the development of an OTC interstate NO<sub>x</sub> emissions offset trading program; and

WHEREAS individual States of OTC on a State-to-State basis have adopted a number of bilateral agreements for interstate NO<sub>x</sub> emissions offset trading; and

WHEREAS these bilateral agreements have given OTC States additional experience on practical implementation of interstate NO<sub>x</sub> emissions offsets trading;

WHEREAS standardized interstate NO<sub>x</sub> emissions offset trading would expand and improve the NO<sub>x</sub> emission offset trading mechanisms developed by the individual OTC member States to date; and

WHEREAS OTC has investigated various approaches which could facilitate interstate NO<sub>x</sub> emissions offset trading, utilizing existing State rules; and

WHEREAS based on this investigation, OTC has developed the attached set of Principles which it believes forms a good foundation for such increased NOx emission offset trading; and

WHEREAS OTC has previously stressed the importance of a regional registry for NOx emission offsets, and that the registry should track and record the use of emission reduction credits to ensure no double counting as well as to act as a common source of information; and

WHEREAS OTC has investigated possible alternatives for developing and implementing a regional registry;

THEREFORE BE IT RESOLVED that the OTC supports interstate NOx emissions offset trading as a logical addition to the emission offset program; and

FURTHERMORE that the OTC hereby approves this amendment to the OTC MOU on intrastate offset trading of May 18, 1993, including the attached Principles; and

FURTHERMORE that interstate offset trading should proceed according to the attached Principles; and

FURTHERMORE OTC endorses the creation and implementation of a regional registry system, and calls upon the U. S. Environmental Protection Agency to work with OTC to ensure that this goal is achieved.

Signed this      day of

  
Connecticut

  
Delaware

  
District of Columbia

  
Maine

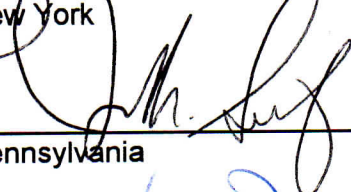
  
Maryland

  
Massachusetts

  
New Hampshire

  
New Jersey

  
New York

  
Pennsylvania

  
Rhode Island

  
Vermont

  
Virginia



**PRINCIPLES FOR AN INTERSTATE TRADING AGREEMENT  
FOR NITROGEN OXIDES EMISSIONS OFFSETS  
January 27, 2000**

This document outlines a set of principles for use as the basis for an addendum to the OTC May 1993 agreement on the intrastate trading of NO<sub>x</sub> offset credits. The Workgroup on Interstate Trading Issues (the Workgroup), reporting to the OTC Stationary and Area Source Committee of the Ozone Transport Commission (OTC), initially prepared these principles as a result of discussions held between October 1998 and January 2000. During this time, the OTC Stationary/Area Source Committee as well as the full OTC reviewed drafts of these principles (A draft set of the principles was included in the OTC publicly available briefing materials dated May 13, 1999). The development process has been funded by a market-based initiatives grant awarded by the United States Environmental Protection Agency (EPA) and administered by the Ozone Transport Commission. All 22 States that are subject to EPA's NO<sub>x</sub> Transport SIP Call of September 1998, and Maine, Vermont and New Hampshire were invited to participate in development of these principles.

The Workgroup anticipates that the owners and operators of sources located in States that are signatories to the intended interstate agreement will be able to use NO<sub>x</sub> offset credits generated in another signatory State, provided the terms of this agreement as well as the applicable provisions of the two States' rules are met.

NO<sub>x</sub> is a precursor to the formation of ground-level ozone, a criteria pollutant, and both NO<sub>x</sub> and ozone have been demonstrated to travel great distances. Therefore, sources of NO<sub>x</sub> emissions in other States may contribute to ozone pollution at the location of a proposed new or modified source. Given this, and given that having as large a trading region as possible would tend to encourage economic development, by helping to minimize the cost of obtaining required offsets for a new or modified source, it is desirable to allow the interstate trading of offset credits.

**TYPE OF CREDITS COVERED**

These principles apply only to the trading of NO<sub>x</sub> emission reduction credits which are used to satisfy New Source Review (NSR) requirements for emission offsets. Two types of emission reduction credits may be traded and used to meet NSR offset requirements:

1. Rate-based Emission Reduction Credits or ERCs (expressed in tons per year), and
2. Mass-based Discrete Emission Reduction Credits or DERCs (expressed in pounds or tons), provided that the use of DERCs to meet emission offset requirements is allowed by applicable rules and policies of the user State (i.e. the State in which the credits would be used).

Under these principles, certain ERCs and DERCs may not however be traded interstate:

1. No credits that are based on reductions occurring prior to January 1, 1990 may be traded.



2. If a user State's rules and/or policies prohibit the use of credits that rely on pre-1991 data to calculate their value, then such credits may not be used in that State. (See Addendum 1 for a listing of which signatory States' current rules and/or policies allow the use of such credits.)
3. If the generating State's rules and/or policies prohibit the use in another State of ERCs generated from the shutdown or curtailment of an emission source or a facility located in the generating State, then the user State shall not authorize or allow the use within its jurisdiction of that State's shutdown credits. (See Addendum 2 for a listing of which States' current rules and/or policies allow the use in another State of shutdown or curtailment credits.)
4. Where policy or regulatory reciprocity requirements exist, States may prohibit the transfer of specific types of credits to those States that do not allow the same types of credits to be traded out-of-State.

#### **SOURCES OF CREDITS**

NOx emission reduction credits may be based on emission reductions resulting from various types of actions to reduce emissions from stationary sources. Emission reduction credits are generated through actions that reduce emissions below both the existing regulatory requirements and below historical actual emission levels. Such actions may be increasing the control of emissions, taking pollution prevention initiatives, or making process variable changes. In addition, emission reductions that result from the shutdown of a source (a facility or emissions unit(s) within a facility) or from the curtailment of operations, provided no load-shifting occurs may be used as the basis for an ERC, but not a DERC.

#### **CALCULATION OF BASELINE EMISSIONS for CREDIT GENERATION**

Baseline emissions (annual mass emissions) for a source generating ERCs shall be the lower of the source's allowable emissions or its actual emissions. In general, actual emissions as of a particular date shall equal the average annual emissions of the source, based on the source's actual emissions during a prior two-year period. This is usually the two years that precede the particular date, but the generating State may allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours and production rates, and shall if applicable take into consideration the types of materials actually processed, stored, or combusted during the selected time period. Baseline emissions for a source generating DERCs are calculated similarly, except that the amount of emissions will be given as mass emissions, rather than mass emissions per year.

#### **CALCULATION OF POST-REDUCTION EMISSIONS for CREDIT GENERATION**

Persons who hold permits or other federally enforceable instruments or owners or operators of grandfathered emission sources may generate ERCs. To generate ERCs, the person must obtain approval of a lower limit in a permit or other federally enforceable instrument or surrender the permit or registration. For each emission source associated with the generation of ERCs, determination of its post-reduction emissions shall be based on the source's new enforceable limit(s) (its maximum allowable operating hours, production rates, and new maximum emission rate)



established pursuant to individual State methods that have been approved by the EPA.

A source does not need to revise its permit in order to generate DERCs. For each emission source associated with the generation of DERCs, determination of its post-reduction emissions shall be based on the source's actual operating hours, actual production rates, and an actual emission rate during the generation period.

### **CALCULATION OF EMISSION REDUCTION CREDITS**

The number of emission reduction credits generated shall be based on the difference between a source's post-reduction emissions from its baseline emissions. The number of ERCs or DERCs generated shall be calculated in accordance with the applicable rules and policies of the generating State.

### **STATE APPROVAL OF CREDITS FOR USE AS OFFSETS**

ERCs are credits based prospectively on emission reductions that will be realized each year in the future, and the emission reductions must be permanent, enforceable, quantifiable, and surplus at the time of credit generation. The generator State must assure the generator's obligation to realize these future emission reductions is federally enforceable by setting forth the lower (more stringent) emissions limitations in the revised permit or other federally enforceable instruments, or for shutdowns, by ensuring that the source's permit or registration is surrendered. The generating State must also assure that ERCs are "surplus," that the source's emission reductions are below both applicable State and federal CAA requirements; and that the emission reductions are not already otherwise relied on in any future projection inventory included in the State's State Implementation Plan (SIP). The generating State must also assure that ERCs are "real", and that the source's reduced emissions are below the source's historic emission levels.

DERCs are mass-based credits based retrospectively on emission reductions that have occurred in the past, and these emission reductions must be enforceable, quantifiable, surplus during the period of generation, and real. DERCs may not be used to meet emissions offset requirements, unless such use of DERCs is allowed by the user State and the user meets any conditions or requirements placed by the user State on such use.

### **RECORDKEEPING/DATA COLLECTION**

Each State will maintain (or contract to maintain) records documenting each emission reduction credit generated in the State. Records for ERCs will be held indefinitely, and records for DERCs will be held for at least 5 years after the credit is used to meet emission offset requirements. If a credit is traded for use in another signatory State, the generating State will make the records available to the other signatory State upon that State's written request. The records will at a minimum include the following information:

1. The name and address of the company that generated the credit, name and address of the plant at which the emission reduction occurred, and the name and telephone number of a company contact person;
2. For a rate-based ERC, the permit or other means that the State used to make the emission reduction enforceable; for a DERC, the generation documentation filed by the

generator; and for a DERC from New Jersey, a notice of verification filed by the verifier;

3. The baseline emissions for the generating source, a description of the method the generator used to reduce emissions, the emissions reductions that resulted from implementing the reduction method, and the number of credits generated;
4. The test methods and/or other measurement methods used and the calculations made to quantify the baseline emissions and the post-reduction emissions, along with all supporting documentation, including any estimate of the accuracy of the quantification method and any uncertainty factors applied to correct for possible inaccuracies.

### **USE OF CREDITS**

The interstate use of any credit to comply with New Source Review requirements shall be pursuant to the multi-state trading agreement and to all applicable State and federal laws, rules, and policies on New Source Review, and shall be consistent with all of the applicable requirements of the Clean Air Act, as amended November 15, 1990. Regardless of where the credit is used, provisions for expiration and/or discounting of credits are governed by the rules and policies of the generating State and the user State shall confirm with the generating State the validity and value of any credits before they are approved for use. Additionally, the use shall be in accordance with the SIP that is in effect in the State in which the offset is ultimately used, and the individual State laws, rules, and policies of the user State may impose specific restrictions on the use of credits in that State. For example:

1. A credit user may use a credit based on emission reductions generated outside the ozone season to meet ozone season requirements, only if this is not prohibited by the user State. (See Addendum 3 for a listing of signatory States that do and do not allow credit based on emission reductions generated outside the ozone season to meet ozone season requirements.)
2. A credit user must comply with the geographic restrictions in effect in the user State. (See Addendum 4 for State-specific geographic restrictions that apply in each signatory State.)
3. In New York or Pennsylvania, DERCs may not be used to meet NSR offset requirements.
4. In New Jersey a DERC may be used to meet NSR requirements only if the requirements in its trading rules are met, including the requirement that credits shall be generated during the same year in which they are used.

### **TRACKING SYSTEM**

The signatory States agree that a regional registry should be established as soon as possible, in order to provide a centralized tracking system for the emission reduction credits used under any agreement developed based on these principles.

### **SIP ACCOUNTING**

The signatory States recognize that EPA guidance requires that States must properly account for



both actual and projected future emissions in their State Implementation Plans (SIPs).

"Actual emission inventories" are inventories that are estimates of actual emissions into the atmosphere, and the procedures for preparing these inventories are not affected by interstate NOx offset trading. Actual emission inventories required for a State's SIP include the 1990 base year inventory, periodic inventories (every three years for all sectors), and the annual emission statements (for major stationary sources plus some other sources). A source's emission statement and the State's actual inventory reflect actual amount of air contaminants emitted, even if a source generates or uses credits. In demonstrations of attainment or maintenance of the National Ambient Air Quality Standard for ozone, each State is responsible for the actual emissions shown in its actual emission inventories.

"Future projection inventories" are inventories that are forecasts of future year emissions. Future projection inventories are based on actual emissions in a baseline year, and these baseline emissions are adjusted by such factors as future control requirements and growth estimates to develop a prediction of future emissions. Future projection inventories include Rate of Progress (ROP) plan inventories, SIP future projection inventories, Attainment demonstrations, and Maintenance plans. Signatory States agree to assure the requirements for permanence, enforceability, and surplus are met. For serious and above areas where ERCs are generated, the States involved in the trade agree to address the issue of surplus through an individual agreement until the OTC resolves this issue.

As set forth above, signatory States agree that all interstate trading transactions will be tracked through a regional registry. The signatory States agree periodically to prepare a regional accounting of the NOx offset credits that have been traded interstate and of the emissions from sources resulting from their use of NOx offset credits generated in another State, based on the records of this registry. The signatory States will seek EPA's acceptance on using the following process for regional accounting for SIP purposes. Regional accounting would show that, for the trading region as a whole, the emission increases that result from the use of NOx offsets do not exceed the amount of emission reductions associated with the generation of those offsets, and that the additional emission reductions required through the application of various offset ratios have been realized.

The States will use regional accounting as follows<sup>1</sup>:

- (1) Each State would determine the net amount of emissions in its actual emissions inventory that are associated with sources that generate and/or use NOx offset credits that are traded interstate. Using the regional demonstration the State would show that, on a regional basis, the SIP obligations associated with the generation and use of NOx emission offsets have been met; and
- (2) Each State would demonstrate, using usual SIP procedures, that the remaining portion of its actual emissions inventory (total inventory minus the emissions associated with the generation and use of NOx offset credits traded interstate) meets the applicable SIP

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<sup>1</sup> And we recommend that EPA guidance use the following



goal (rate of progress, attainment, or maintenance), adjusted to exclude the projected emissions associated with the sources covered in the regional accounting.

The State would combine both of these emissions accountings into one comprehensive SIP demonstration for the SIP planning area of concern for submittal to EPA.

#### **PUBLIC AVAILABILITY OF INFORMATION**

Consistent with EPA policy and State law, the signatory States agree that any information held by a State that is needed to implement trades under this agreement and required to determine emissions and to judge the quality of an ERC or a DERC must be provided to any State requesting the information. Signatory States understand and further agree that the right of access by the public to information under applicable State law is not affected by any interstate agreement, which may be entered into by the signatory States.

#### **AUDIT PROVISIONS**

Each signatory State agrees to provide to any other signatory States, upon written request, copies of any trading program audits performed pursuant to its own rules or to EPA's Economic Incentive Program rule at 40 CFR Part 51.

#### **ENFORCEMENT**

The signatory States agree to implement the necessary enforcement measures to ensure that a credit generator complies with all applicable requirements in generating the credit and does not subsequently violate the conditions under which the credit was generated. The generating State agrees to notify the user State, should any violations by the generator be determined to have occurred.

#### **SUPERCESSION**

For any trade initiated after a multi-party interstate trading agreement is signed, the terms of the multi-party agreement shall apply. However, if there is a pre-existing bilateral agreement for NOx trading between any two signatory States pertaining to interstate trading for the purpose of meeting NOx offset requirements, those signatory States may allow any trade initiated before the multi-party agreement is signed to be carried through under the terms of the pre-existing agreement. Signatory States with pre-existing bilateral agreements agree to establish a procedure to determine which trades, if any, have been initiated prior to the signing of the multi-party agreement. Furthermore, the approval of any trades by signatory States under the terms of a bilateral agreement prior to the signing of the multi-party agreement shall remain valid and in force. Further, signatory States may elect to enter into separate bilateral agreements which would apply to interstate credit trading, provided that such trading is outside the scope of the multi-party interstate agreement.

#### **TERMINATION**

A multi-party interstate agreement shall set forth the understanding among the signatory States on the interstate trading of credits for use in meeting NSR emission offset requirements, but is not intended to and does not create any contractual rights or obligations with respect to the signatory States or any other parties. The signatory States shall acknowledge and understand that the interstate agreement may only be modified in writing as an amendment, and immediately upon written notice to the other States, any signatory State may withdraw. Any State that shall withdraw

from the agreement shall not be relieved from its obligation to ensure that all ERCs or DERCs generated, approved by its State agency and used in another State shall remain permanent, surplus, real, quantifiable, and federally enforceable.



**Addendum 1**

**Status of whether or not signatory States' rules and/or policies allow the use in their State of credits to meet emission offset requirements, if pre-1990 data has been used to calculate the credits' value**

| <b>User State or jurisdiction</b> | <b>Allows interstate trading and use of credits based on post-January 1, 1990 reductions, even if pre-1990 data has been used to calculate the credits' value</b> |
|-----------------------------------|---|
| CT                                | YES   |
| DC                                |   |
| DE                                |   |
| MA                                | YES   |
| MD                                |   |
| ME                                | NO  |
| NH                                | NO  |
| NJ                                | YES   |
| NY                                | YES   |
| PA                                | YES   |
| RI                                |   |
| VA                                |   |
| VT                                | Currently no policy   |

**Addendum 2**

**Status of whether signatory States' rules and/or policies allow the use in another State of credits generated in their State to meet emission offset requirements, if the credit was based on reductions due to shutdowns or curtailments**

| <b>Generating State or jurisdiction</b> | <b>Allows interstate trading and use of shutdown and curtailment credits</b>   |
|---|--|
| CT                                      | Yes  |
| DC                                      |  |
| DE                                      | <u>Yes</u> , allows 50% of credits to be traded interstate, after 25% is retained for economic development within the State, and 25% retired for environmental benefit |
| MA                                      | <u>Yes</u> , allows trades interstate with limitations   |
| MD                                      | [Policy under development]   |
| ME                                      | Yes  |
| NH                                      | No   |
| NJ                                      | No   |
| NY                                      | <u>Yes</u> , except to other States which prohibit the trading of shutdown credits to NY of credits generated in their States  |
| PA                                      | <u>Yes</u> , except to other States which prohibit the trading of shutdown credits to PA of credits generated in their States  |
| RI                                      | Yes  |
| VA                                      |  |
| VT                                      |  |

**Addendum 3**

**Status of whether signatory States do or do not allow credits based on emission reductions generated outside the ozone season to meet ozone season requirements**

| <b>User State or jurisdiction</b> | <b>Credits Generated Outside the Ozone Season May Be Used During the Ozone Season</b> |
|-----------------------------------|---|
| CT                                | NO for DERCS. Currently no policy for continuous ERCs                                 |
| DC                                |   |
| DE                                | NO  |
| MA                                | NO  |
| MD                                |   |
| ME                                | NO  |
| NH                                | NO  |
| NJ                                | NO  |
| NY                                | YES   |
| PA                                | YES   |
| RI                                |   |
| VA                                |   |
| VT                                |   |



**Addendum 4**  
**Status of OTR States' rules and/or policies**  
**on distance and directionality**

The federal NSR distance and directionality requirements in Section 173 of the Clean Air Act apply to all NO<sub>x</sub> offset trading. These requirements are that a credit, generated by a source located in a different nonattainment area than the one in which the user source is located in, can be used to meet NSR offset requirements only if: i) the nonattainment area where the generating source is located must have an equal or higher nonattainment classification than the area in which the user source is located; and ii) emissions from the generating source's nonattainment area must contribute to a violation of the NAAQS for ozone in the area that the user source is located.

Some States have additional distance and/or directionality requirements that also apply to credit use in their State. These are set forth in the table below:

| <b>User State or jurisdiction</b> | <b>State-specific distance and directionality rules and/or policies</b>   |                    |                |                      |                |                      |                |                      |                |                      |                 |
|-----------------------------------|---|--------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|-----------------|
| CT                                | Does not have additional requirements   |                    |                |                      |                |                      |                |                      |                |                      |                 |
| DC                                |   |                    |                |                      |                |                      |                |                      |                |                      |                 |
| DE                                |   |                    |                |                      |                |                      |                |                      |                |                      |                 |
| MA                                | Currently does not allow credits generated in MA to be traded to the south or west  |                    |                |                      |                |                      |                |                      |                |                      |                 |
| MD                                |   |                    |                |                      |                |                      |                |                      |                |                      |                 |
| ME                                | If credits are generated outside New England, ME requires the use of twice as many credits as would be required if the credits were generated within New England  |                    |                |                      |                |                      |                |                      |                |                      |                 |
| NH                                | <p>The greater the distance of the generating source away from the user source, the larger the number of credits required to be used during the ozone season:</p> <table style="margin-left: 40px;"> <tr> <td>If 0 to 150 miles,</td> <td>1.2 to 1 ratio</td> </tr> <tr> <td>If 150 to 300 miles,</td> <td>2.4 to 1 ratio</td> </tr> <tr> <td>If 300 to 450 miles,</td> <td>4.8 to 1 ratio</td> </tr> <tr> <td>If 450 to 600 miles,</td> <td>9.6 to 1 ratio</td> </tr> <tr> <td>If 600 to 750 miles,</td> <td>19.2 to 1 ratio</td> </tr> </table> | If 0 to 150 miles, | 1.2 to 1 ratio | If 150 to 300 miles, | 2.4 to 1 ratio | If 300 to 450 miles, | 4.8 to 1 ratio | If 450 to 600 miles, | 9.6 to 1 ratio | If 600 to 750 miles, | 19.2 to 1 ratio |
| If 0 to 150 miles,                | 1.2 to 1 ratio  |                    |                |                      |                |                      |                |                      |                |                      |                 |
| If 150 to 300 miles,              | 2.4 to 1 ratio  |                    |                |                      |                |                      |                |                      |                |                      |                 |
| If 300 to 450 miles,              | 4.8 to 1 ratio  |                    |                |                      |                |                      |                |                      |                |                      |                 |
| If 450 to 600 miles,              | 9.6 to 1 ratio  |                    |                |                      |                |                      |                |                      |                |                      |                 |
| If 600 to 750 miles,              | 19.2 to 1 ratio   |                    |                |                      |                |                      |                |                      |                |                      |                 |

|           |  |
|-----------|--|
| <p>NJ</p> | <p>The greater the distance of the generating source away from the user source, the larger the number of credits required to be used:<br/>                 If 0-100 miles, 1.3 to 1 ratio<br/>                 If 100-250 miles, 2.6 to 1 ratio<br/>                 If 250 to 500 miles, 5.2 to 1 ratio</p> <p>If the credits used are DERCs, and if the credit-generating source is not located in the same non-attainment area as the user source, the generator source must be located either to the west and/or south of New Jersey</p> |
| <p>NY</p> | <p>The attached Figure 2 must be used to determine if the distance from the credit-generating source to the user source is acceptable. This figure is taken from NYSDEC, Air-Guide 26, Appendix D. Any user of ERCs in NY must contact the Impact Assessment and Meteorology Section of NYSDEC for approval to use credits as offsets.</p>   |
| <p>PA</p> | <p>ERCs obtained from outside the generating State must be from sources within 200 KM of the user facility</p>   |
| <p>RI</p> |  |
| <p>VA</p> |  |
| <p>VT</p> |  |

Figure 1: Area Around Proposed Source Where Offset Can Be Located  
For New York State Department of Environmental Conservation

