

2001 OTC NO_x Budget Program Compliance Report

Prepared By:
Clean Air Markets Division
Office Of Air and Radiation
United States Environmental Protection Agency

March 26, 2002



BACKGROUND

The NO_x Budget Program was established by the states in the Ozone Transport Commission (OTC) to reduce NO_x emissions region-wide as a part of each state's effort to attain the national ambient air quality standard (NAAQS) for ground level ozone. The OTC comprises the states of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Maryland, Delaware, the northern counties of Virginia, and the District of Columbia.

In September 1994, the OTC adopted a memorandum of understanding (MOU) to achieve regional emission reductions of NO_x. (Virginia did not sign the MOU.) Phase I included the installation of reasonably available control technology (RACT). In Phases II and III, states committed to developing and adopting regulations that would reduce region-wide NO_x emissions in 1999 (Phase II) and further reduce emissions in 2003 (Phase III).

For Phases II and III, the OTC states in collaboration with the U.S. EPA, as well as representatives from industry, utilities, and environmental groups, developed a model rule which identified key elements that should be consistent among the regulations in all participating states so that an integrated interstate emissions trading program could be created. The NO_x Budget Program involves an allowance trading system which harnesses free market forces to reduce pollution, similar to the U.S. EPA's Acid Rain Program. Under this program, budget sources were allocated allowances by their state government. Each allowance permits a source to emit one ton of NO_x during the control period (May through September) for which it is allocated or any later control period. Allowances may be bought, sold, or banked. Any person may acquire allowances and participate in the trading system. Each budget source must comply with the program by demonstrating at the end of each control period that actual emissions do not exceed the amount of allowances held for that period. However, regardless of the number of allowances a source holds, it cannot emit at levels that would violate other federal or state limits (e.g., NSPS, Title IV, NO_x RACT).

The NO_x Budget Program is separate and distinct from the Acid Rain "Phase I and II" NO_x reduction requirements. Sources affected by both programs are responsible for demonstrating compliance with the requirements of each program.

The 2001 OTC NO_x Budget Program Compliance Report summarizes compliance results for the third year of the program. Nine states (Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, and Rhode Island) and the District of Columbia participated in the program in 2001. Exhibit 1 shows a summary by state of the NO_x allowances allocated and emissions, and Appendix A lists the affected sources, emissions from each source, and allowance holdings. Generally, the program affects electric utilities and large industrial boilers.

NO_x Budget Sources Emitted 12 Percent Less Than Their 2001 Allowable Emissions Level

There were 970 affected sources (i.e., combustion units) that underwent annual reconciliation for 2001 to determine whether sufficient allowances were held to cover emissions (see Appendix A). These affected sources emitted at a level approximately 12 percent below 2001 allocations. This percentage is similar to that

achieved during the 2000 ozone season (11 percent).

Exhibit 1							
2001 OTC NO_x Budget Program State Allocations And Emissions							
State	1990 Baseline Emissions	1999 Allowances Allocated ¹	2000 Allowances Allocated	2001 Allowances Allocated	1999 Emissions	2000 Emissions	2001 Emissions
Connecticut	11,130	6,312	5,866	5,866	5,830	4,697	4,833
Delaware	13,510	6,142	6,145	6,142	6,160	5,256	5,799
District of Columbia	576	N/A	N/A	481	N/A	N/A	284
Maryland ²	54,991	N/A	1,831 ³	13,709 ⁴	N/A	2,329 ⁵	17,559 ⁶
Massachusetts	41,330	20,380 ⁷	18,146	18,145	17,293	14,324	12,835
New Hampshire	14,589	6,788	5,119	5,119	3,463	2,056	2,081 ⁸
New Jersey	46,963	21,292	17,340	17,340	15,390	14,630	15,296
New York	85,642	54,276	47,016	47,016	47,267	43,583	39,050
Pennsylvania	203,181	103,668	93,312	93,312	79,166	87,329	85,191
Rhode Island	1,099	580	626	626	274	288	355
Total	473,011	219,438	195,401	207,756	174,843	174,492	183,283

¹ Includes early reduction credit allowances.

² Due to a court Consent Decree, Maryland sources did not fully participate in the trading program during the 2000 and 2001 ozone season. Five plants fully participated in 2000 and eight plants in 2001 (listed in Appendix A).

³ For the purpose of calculating the Progressive Flow Control ratio, the total Maryland year 2000 allocation was 22,881 (21,050 allowances would have been allocated to sources not fully participating).

⁴ For the purpose of calculating the Progressive Flow Control ratio, the total Maryland year 2001 allocation was 22,881 (9,172 allowances would have been allocated to sources not fully participating).

⁵ The total emissions from those Maryland sources that will eventually participate in the program was 30,888 (28,559 tons were from sources not yet fully participating).

⁶ The total emissions from those Maryland sources that will eventually participate in the program was 27,126 (9,567 tons were from sources not yet fully participating).

⁷ Massachusetts allocated 700 additional vintage year 1999 early reduction credit allowances in November 2000.

⁸ Most of the additional reductions lowering New Hampshire's emissions from 3,463 tons in 1999 to 2,056 tons in 2000 and 2,081 tons in 2001 can be attributed to major unplanned outages of Newington Station Unit 1 (NT1) for almost the entire ozone season of 2000 and a major portion of the ozone season of 2001. NT1 emitted only 44 tons in 2000 and 468 tons in 2001 compared to 1,092 tons in 1999.

The total number of allowances deducted in 2001 was 188,116 (183,283 to cover emissions and an additional 4,833 banked allowances which were taken at 2:1 under the Progressive Flow Control (PFC) requirements.) This represents approximately 91 percent of all 2001 allowances issued and about 68 percent of all allowances available, which included 60,514 year 1999 and 2000 banked allowances. Five sources

had a total of 57 year 2002 penalty allowances deducted because they did not hold enough allowances in their compliance accounts to cover their emissions for the 2001 ozone season. Exhibit 2 displays these allowance deductions, as well as the remaining bank of 1999 through 2001 allowances.

At an individual source, the number of allowances surrendered was not always equal to the number of tons emitted at the unit. When a unit shares a common stack with other units, the facility was allowed to choose the proportion of allowances deducted from each unit sharing the stack, as long as enough allowances were surrendered to cover the total number of tons emitted. If no apportionment was made, EPA deducted allowances equally among the units sharing the stack to cover total emissions reported by the stack. For some units, the number of allowances surrendered did not equal the number of tons emitted at the unit because the unit was required to surrender some banked allowances at 2:1 under the PFC requirements. Appendix A reflects both the deductions for emissions at each unit after the common stack apportionment was made, and the 2:1 deductions required by PFC .

Exhibit 2	
NO_x Allowance Reconciliation Summary	
Total Allowances Held in Accounts as of 12/31/01 (1999 through 2001 Vintages)¹	277,442
Compliance and Overdraft Accounts	218,506
Other Accounts ²	58,936
Allowances Deducted for Emissions (1999 through 2001 Vintages)	188,116
2002 Penalty Allowances Deducted	57
Banked Allowances (1999 through 2001 Vintages)³	78,746
Compliance and Overdraft Accounts	30,119
Other Accounts ²	48,627

¹ December 31, 2001, represents the NO_x Allowance Transfer Deadline, the point in time at which the affected source compliance and overdraft accounts are frozen and after which no transfers of 1999 through 2001 allowances will be recorded. The freeze on these accounts is removed when annual reconciliation is complete.

² Other accounts refers to general and state accounts within the NO_x Allowance Tracking System (NATS) that can be held by any source, individual or other organization.

³ Reflects the 271 year 2001 allowances that were surrendered by Rhode Island sources as required by state regulation, and 10,310 year 2001 allowances retired by Maryland for sources not fully participating in 2001 due to a court Consent Decree.

Progressive Flow Control Ratio for Year 2001

Progressive Flow Control (PFC) is intended to limit the variability in emissions associated with using banked allowances. The PFC allows unlimited banking by sources, but discourages the “excessive” use of banked allowances by establishing a discount rate on the use of banked allowances over a certain level. Under this

program, a 2-for-1 surrender rate is applied to the use of allowances when the total number of banked allowances in the program exceeds 10 percent of the allowable NO_x emissions for all sources covered in an ozone season.

Since the number of banked allowances exceeded 10% of the total regional NO_x budget for the year 2001, PFC was applied to the year 2001 reconciliation. The year 2001 PFC ratio of 0.36 was calculated in May of 2001 in the following manner.

Year 2001 PFC ratio = $(0.10 \times \text{total NO}_x \text{ budget for the 2001 season}) / \text{total number of banked allowances (i.e., 1999 and 2000)}$.

Year 2001 PFC ratio = $(.10 \times 216,551) / 60,589 = 0.36$

The ratio was applied to the banked allowances held in both compliance and overdraft accounts at the time deductions were made for the year 2001 reconciliation. Current year allowances (i.e., for year 2001 reconciliation, vintage year 2001 allowances) were deducted first at a 1:1 ratio. Then, only when needed, banked allowances (i.e., vintage years 1999 and 2000 allowances) were deducted. For each account, the first 36 percent of the banked allowances were available for deduction at a 1:1 ratio, and the remaining 64 percent were available at a 2:1 ratio, (i.e., 2 banked allowances for each ton of emissions). A total of 14,069 year 1999 and 2000 banked allowances were deducted at the 1:1 ratio to cover 14,069 tons of NO_x, and 9,665 year 1999 and 2000 allowances were deducted at 2:1, accounting for 4,832 tons of NO_x emissions.

Progressive Flow Control Ratio for Year 2002

Year 2002 PFC ratio = $(.10 \times 216,551) / 78,746 = 0.27$

This ratio will not change between now and the time allowances are deducted for the year 2002 reconciliation, even if States issue additional year 2001 allowances for special purposes like energy efficiency, or sources are required to surrender additional allowances for monitoring problems that are discovered after deductions are made.