justification did not support its proposed reduction requirements.

The EPA acknowledges the concerns expressed by the commenters that focusing solely on the cost effectiveness, defined in terms of cost per ton removed, of the emissions reductions would exclude consideration of the total costs incurred by the upwind sources, and would exclude consideration of the downwind ambient benefits that those costs achieve, compared to the costs of achieving the same ambient impact through either local reductions or more extensive reductions in adjacent upwind areas. The EPA further acknowledges air quality modeling makes clear that reductions in emissions closer to the air quality problem have a greater ambient impact.

However, EPA has not been presented with, nor been able to develop, an accurate comparison of the downwind costs of emissions reductions that would achieve the same ambient impact as the regional reductions required by today's action. The EPA does not have comprehensive information concerning available local measures or their costs or ambient impacts.

However, as a qualitative matter, EPA believes that available evidence indicates that the upwind costs are reasonable not only in light of cost-effectiveness per ton removed, but also in light of the downwind ambient impact of the emissions reductions. Under the 1-hour NAAQS, emissions from each upwind State generally affect several downwind nonattainment urban areas. Thus, matching the total ambient impact of the emissions reductions from the upwind State would require emissions reductions in several downwind areas.[58]

Although presently available information does not permit a useful quantitative comparison of total upwind and downwind costs in terms of their ambient impact, EPA believes that upwind reductions replace local reductions that, on a cost-per-ton removed basis, may be expected to be more expensive. Moreover, it should be recognized that for all of the nonattainment areas under the 1-hour NAAQS, the residents have already incurred substantial control costs to eliminate part of the local contribution to the air quality problem. Under these circumstances, EPA considers it equitable to require the upwind emitters to offset their contribution to the problem through at least the reductions that are the most highly cost-effective—in terms of cost-per-ton removed—rather than require the residents of the downwind area to offset those upwind contributions through even more local control measures.

Furthermore, under the 8-hour NAAQS, the available information—again, on a qualitative basis—indicates that the upwind emissions reductions replace a significantly greater set of local measures. As indicated above, emissions from each upwind State affect a wide swath of downwind areas with nonattainment problems. As a result, the emissions reductions from the upwind State replace local reductions in numerous downwind areas. Moreover, some of these downwind areas are adjacent to the upwind State, while others are further away. Thus, under the 8-hour NAAQS, EPA believes that the qualitative case is even more vivid that the upwind emissions reductions replace substantial and costly local measures.

Finally, with respect to the meteorological phenomenon that upwind reductions have less ambient impact the further away they are from the downwind nonattainment problem: EPA modeled the ambient impact of regional variations in the levels of upwind emissions reductions. This modeling, and its results, are discussed in the Air Quality TSD. In brief, the modeling results indicate that it is neither more cost-effective nor more beneficial to air quality to pursue subregional variations in upwind emissions controls.

4. Conclusion

For the reasons discussed above, EPA believes that adequate information is available to determine, on a qualitative basis, that the upwind reductions required by today's action are reasonable in light of the attainment needs downwind, and that the costs of those reductions are reasonable in light of the costs the downwind areas would otherwise face. For these and other reasons noted elsewhere, EPA believes that requiring the regional reductions in today's notice is a reasonable step to take at this time.

Of course, as more comprehensive information becomes available (including additional modeling, additional information concerning local control options and costs, as well as more refined regional air quality information), EPA will continue to examine the issue of regional transport. In addition, as described in Section III., EPA expects to review the issue of regional transport by the year 2007 and may require additional steps by either the upwind States or the downwind States, or both, to address the issue further. Even so, as noted above, the information that is available provides no evidence that the regional reductions required today may prove not to be needed.

III. Determination of Budgets

The EPA used the highly cost-effective measures identified in Section II.D. above to calculate the amounts of emissions in each covered State that will contribute significantly to nonattainment or interfere with maintenance in one or more downwind States (the ''significant amounts''). This Section further describes issues related to cost-effective controls and the role of these controls in the calculation of budgets.

First, as described earlier in this notice, EPA projected the total amount of NO_X emissions that sources in each covered State would emit, in light of expected growth, in 2007 taking into account measures required under the CAA (the ''2007 base year emissions inventory''). The EPA then projected the total amount of NO_X emissions that each of those States would emit in 2007 if each such State applied these highly cost-effective measures (2007 controlled inventory). The difference between the 2007 base inventory and the 2007 controlled inventory for each covered State is the ''significant amount'' that the State's SIP must prohibit to satisfy section 110(a)(2)(D)(i)(I). Each covered State's 2007 controlled inventory—referred to in this Section as the State's ''emissions budget''—expresses the total amount of NO_X emissions remaining after the State's SIP prohibits the ''significant amount'' of NO_X emissions in that State. Each covered State must demonstrate that its SIP includes sufficient measures (of the State's choice) to eliminate those emissions, and thereby meet its budget, in the time frames discussed later in this notice.

A. General Comments on the Base Emission Inventory

Background: In the NPR, EPA solicited comment on technical information used in revising the 1996 base year emissions inventories and the growth and control assumptions used to develop the 2007 projection year base inventories. The EPA received over 200 comment letters (from industry, associations, States, environmental organizations, and U.S. Congressional representatives) on the condition of 1996 base year and projected 2007 emission inventories. The EPA accepted

[58] Although the reductions required of any one individual upwind State under today's rule may not, by themselves, result in large ambient impacts downwind, those reductions, when combined with reductions from other upwind States, do result in appreciable reductions downwind.

proposed modifications to the extent EPA was able to validate them.

As discussed in the NPR (62 FR 60318), EPA established a 120-day comment period (ending March 9, 1998) to address issues related to the proposed rule. In order to develop revised inventories used to recalculate the budgets for final rulemaking in a timely manner, EPA felt that comments received after the March 9, 1998 deadline would be addressed only if time and resources were available and after directing attention to comments received prior to the end of the comment period. The EPA is legally obligated under the Administrative Procedure Act to respond only to comments timely submitted during the public comment period. Response to comments timely submitted before the end of the comment period fulfills EPA's obligation to 5 U.S.C. 553(c).

Although the Agency was not able to address all comments submitted after March 9, 1998, as discussed in Section III.F.5. of this notice, EPA is allowing commenters an additional opportunity to request revisions to the source-specific data used to establish each State's budget. During this time, EPA will be addressing those comments submitted during the NPR and SNPR comment periods which were not addressed for reasons indicated above, as well as evaluate comments that are submitted per Section III.F.5. of the NFR.

1. Quality

Comment: Commenters suggested that the OTAG inventory may not be of sufficient quality for use in the modeling and budget determinations for the non-EGU point, area, nonroad mobile, and highway vehicle source sectors. The commenters stated that OTAG originally intended the inventories to be used in analyzing ozone transport mechanisms and the effect of possible control measures, not for establishing emission budgets as EPA has proposed. Additionally, as one commenter mentioned, many States had prepared inventories only for their moderate and above nonattainment areas, so that the remainder of the State's counties were supplemented with USEPA data. In contrast to these criticisms, other commenters supported the quality of the inventories and the procedures used in their development.

Response: Under the initial OTAG inventory collection process, the 37 States in the domain provided emission estimates for each entire State. The majority of the supplied data were 1990 State ozone SIP emission inventories, but some States supplied data from later years that reflected significant improvement over the 1990 data. Additionally, OTAG collected point source data from the States to update and revise existing emissions inventories used by OTAG. The result of these efforts was an improved emissions inventory which OTAG utilized for modeling as well as strategy analyses.

The EPA used the final OTAG version of the inventory for the emission estimates in the NPR, and then improved the inventory with data supplied by the States and industry through the public comment period. As a result, the revised emissions inventory is the most accurate available for modeling, strategy analyses, and budget calculation purposes. The inventory has been through numerous versions, each version reviewed and extensively commented on by States, industry, and the public. These inventory data are more accurate than any other data used in the past as the basis for the various State-specific SIP revisions (such as rate-of progress SIP revisions or attainment demonstrations). The EPA considers it sufficiently accurate for purposes of determining the budgets.

The EPA recognizes that emission inventories change as more accurate data or methods are developed for estimating emissions. For inventory changes that may be necessary after final promulgation of the budgets, EPA has a process for determining what changes need to be made as well as how the changes would be made to the inventories. This is discussed in further detail in Section III.F.5. of this notice.

Comment: Several commenters were concerned that the initial State NO_X emissions inventories submitted by the States were never quality-assured or commented upon by the States, the regulated community, or the public. Some commenters suggested the reevaluation of emissions estimates with State, local, and industry support.

Response: Under the guidance of OTAG, the initial emission inventories submitted by the States were quality-assured by technical experts, including State and local emission inventory contacts, industry, EPA staff and contractors, and the OTAG Emission Inventory Technical Committee. As EPA amended and modified the inventory for use in the modeling for the NPR, SNPR, and the budget analyses, additional quality assurance was completed. The most accurate inventory development tools available at the time were used to validate these data and to quality assure emission calculations in these data bases. Existing data sets, including the NET data, the OTC NO_X Baseline emission inventory, EPA'S AIRS/AFS major point source reporting system, and EPA's Emission Tracking System (ETS), which contains data submitted and certified as correct by the States, were used for comparison purposes. Where discrepancies were found, either before, during, or after the public comment period, States and industry were contacted to clarify and support revised emission estimates.

2. Availability

Comment: Commenters asserted that the emissions inventory used for the SIP modeling and budget calculations were not made available for public review along with the proposed rule. One commenter stated that the emissions inventory that forms the basis for the NPR (the SIP Call inventory) did not become available until the first week in February 1998.

Response: On October 10, 1997, EPA posted emissions data on the TTN for use and review during the public comment period (*See* NPR, 60318). These data, in conjunction with the OTAG inventories, were the basis of the initial proposed budgets and modeling analyses in the NPR. Thus, these data were available to the public before the beginning of the 120-day comment period on the NPR, which allowed ample time to develop budget, modeling, and cost analyses for submission during the comment period. By notice dated January 28, 1998 (63 FR 4206), EPA issued a caution that comments on the inventory must be submitted by the March 9, 1998 close-of-public-comment date, so that EPA could finalize the inventories and use them for further analyses.

On February 3, 1998, in response to initial public comments and internal review of the initially released data, draft amendments to the emissions inventory were posted on the EPA's TTN site. These changes included the addition of EGU sources less than or equal to 25 MWe which were excluded from the initial budget calculation, correction of EGU growth factors, and the reclassification to the non-EGU file of some sources previously erroneously identified by OTAG as EGU sources. Erroneously omitted non-EGU point source records were also added to the emissions inventory. Area, highway, and nonroad mobile source information was not modified in this iteration. By posting this data on February 3, 1998, EPA allowed 5 more weeks for public comment on the revised data, until the conclusion of the comment period for inventory data on March 9, 1998. Because the revisions were fairly minor, EPA believes this amount of time was adequate. The EPA did receive

comments by March 9, 1998 on the revised data it had posted on February 3, 1998.

B. Electricity Generating Units (EGUs)

Background: To determine the budget for each State's electricity generating sector, EPA developed an inventory of baseline heat input (mmBtu) and NO_X emissions (tons/season) data for each unit. In the NPR, EPA proposed to use the higher, by State, of 1995 or 1996 heat input data to calculate baseline heat input rates (62 FR 60352). The EPA maintained this approach for the SNPR, but added 577 smaller units to the State budget inventories, which had erroneously been omitted for the NPR. These units included electricity generating sources of 25 megawatts of electrical output (MWe) or smaller and additional units not affected under the Acid Rain Program.

1. Base Inventory

Comment: Commenters suggested that using the higher of 1995 or 1996 utilization rates for setting the baseline for the EGU portion of the budget may not be appropriate in all instances. In general, commenters argued for various degrees of flexibility in choosing the baseline year(s) to be used for calculation of budgets.

Response: As discussed below, EPA has made corrections to the baseline heat input data for a small number of EGUs based on careful review of the data supplied with source-specific comments. Using 1997 CEMS data is not a practical option because EPA has not had time to extract from the Acid Rain Emissions Tracking System (ETS) the 5-month ozone season heat input values, quality assure them, or publish them. (Although EPA's Acid Rain Program intends to publish its 1997 Emissions Scorecard later in 1998, this publication will contain only annual, not ozone season, data.) Accordingly, EPA has finalized the EGU portion of the budget for each State using the higher of the 1995 or 1996 ozone season heat input values.

Comment: Commenters asserted revisions were needed to the published heat input data for some EGUs and proposed related additional source-specific changes. Commenters on this issue stated that inaccurate calculations of heat input data resulted in significant errors in the Statewide budgets. Several suggested the need for revision before calculation of final budgets. Many of these commenters provided specific data that they urged EPA to use in the final budget setting process.

Response: The EPA has analyzed the data submitted by these commenters and, where warranted, has made the requested adjustments. Approximately 200 corrections were made to the baseline heat input data for EGU sector inventories.

Comment: Commenters also noted the need to further correct, for some States, the listing of units in the electricity generating sector inventory. Commenters listed specific EGUs that EPA should either include or remove from the inventory, or for which EPA should correct applicable baseline data (e.g., capacity, operating parameters). Several commenters argued that substantial revision of the inventory was necessary before setting budgets under the final rulemaking.

Response: The EPA has analyzed the data submitted by these commenters, including following up with commenters when needed to assure proper interpretation of the data. Where warranted, EPA has corrected the State inventories of units and applicable baseline data.

While the vast majority of corrections consisted of adding small units (e.g., municipal generators and peaking diesel units), combustion turbines, and independent power producers not affected under the Acid Rain Program, some involved deleting units that are no longer operational or have been misclassified and, in actuality, are industrial non-electricity generating boilers. The net result is that EPA has added approximately 800 units to the State EGU inventories. The EPA believes that these inventories are sufficiently accurate to develop a budget.

Comment: Commenters suggested types and sizes of sources to include or exclude from the electricity generating sector inventory. As to the sizes of sources to include in the inventory, commenters on the NPR were roughly split on the inclusion of units less than or equal to 25 MWe. Several noted that emissions from sources below this level were negligible and should not be included. One commenter noted, however, that these sources should be included in the final budget because they tend to operate on peak demand days which frequently correspond to high ozone days. Several suggested that 15 MWe be the cutoff for the utility component of the budget.

On a separate concern, a few commenters disagreed with the inclusion of non-utility power generators in the utility list of sources and proposed that they be included with industrial non-electricity generating unit sources.

Response: Many of these comments appear to confuse discussions of other related issues (e.g., core sources for NO_X cap and trade rule, appropriate sources for cost-effective control) with the types and sizes of EGUs to be included in the baseline inventory for setting the budget. All emissions should be included in the base inventory and, thus, in the budget. As noted previously, using information supplied by commenters, EPA has agreed to add many small units to the base inventories of several States. Concurrently, EPA has also decided not to classify EGUs less than or equal to 25MWe as core sources for the trading program, as discussed in Section VII of this notice, or to assume an emissions decrease for these small units (''cutoff level'') as part of Statewide budgets for EGUs.

The EPA maintains its decision to include industrial units that generate electricity in the definition of EGUs is entirely consistent with the changing, more competitive, character of today's electric power generation industry in the US. Also, these units are amenable to the same NO_X control technologies, at generally the same cost-effectiveness, as utility units.

2. Growth

Background: In the NPR and SNPR, EPA used forecasts of future electricity generation to apply State-specific growth factors in calculating the emissions budgets for the electricity generating sector. In the SNPR, EPA revised the growth factors (the ''corrected'' projections) to account for projected new combustion turbine and combined cycle units inadvertently excluded in the analysis developed in support of the NPR. The EPA also discussed in the SNPR that ''revised'' electricity generation projections could lead to lower growth rates, and therefore lower budgets, and placed supporting information in the docket. However, EPA proposed to use the ''corrected'' projections in calculating State budgets to provide additional compliance flexibility to sources and States (63 FR 25905).

a. Growth Rates.

Comment: The EPA received approximately 36 comments in response to the NPR and roughly 28 comments in response to the SNPR regarding the estimated growth rates that were used to determine the NO_X budget for each State. These comments were submitted by State agencies, associations, utilities, and a public interest group. Commenters expressed concern regarding a number of specific issues, including the following:

(i) the appropriateness of using growth factors to determine the NO_X budget,

(ii) use of the IPM model to establish the growth factors for each State, and

(iii) the use of the ''corrected'' instead of the ''revised'' projections.

Some of these commenters opposed growth factors generally, but many of them supported the concept of—but not the method proposed for—applying a growth factor.

Response: The OTAG's technical analyses of NO_X emissions suggested that EPA needed to consider the electric power industry's future growth in determining the amount of NO_X reduction that would be reasonable for the power industry to make in the future. The OTAG factored the growth of the power industry's emissions from 1990 to 2007 into the air quality analysis that it performed. The results of this analysis were the basis of its recommendations to EPA to lower NO_X emissions from the power industry in many Eastern States. Because the Agency made its predictions about attainment in 2007 based on projections of emissions considering growth, rather than on historical emissions, the Agency also believes that the State budgets to be used up to 2007 should account for growth in electricity demand. Not accounting for growth in demand for electricity would require States to reduce emissions below the level that EPA predicted was necessary to reach attainment. By accounting for growth through 2007 and applying that growth beginning in 2003, EPA essentially allows sources to emit at a slightly higher level than 0.15 lb/mmBtu in the years 2003 through 2006.

In today's action, the Agency has determined to continue to incorporate growth out to 2007 in developing State budgets for summer NO_X emissions. Not accounting for growth would mean that additional control measures—to offset growth—would be required, and EPA has not determined that those additional control measures would be cost-effective. In considering growth, EPA has determined to continue to use either 1995 or 1996 State-wide heat input data, for whichever year was higher for units over 25 megawatts that burn fossil fuels for baseline data. (More details on this approach can be found above in Section III.B.1. Base Inventory).

To estimate growth, EPA considered several options. Ultimately, the Agency has decided to use State-specific growth factors derived from application of the Integrated Planning Model (IPM) using the 1998 Base Case [59] (also referred to as the ''revised'' growth factors). This is the same Base Case used for the Regulatory Analysis in support of the SNPR. The reasons for using these data are discussed below under ''Use of IPM.''

b. Use of IPM.

Comment: Many commenters questioned whether use of the IPM model was appropriate to derive accurate State-specific growth factors. Commenters expressed concern that there was too much variation between each State's individual growth rate as determined by the IPM model, and suggested that use of region-wide IPM growth factors may be more appropriate. They also questioned the reliability and accuracy of the IPM model, especially as applied on an individual State basis. A number of commenters stated that EPA's growth projections were lower than growth rates projected in the context of State utility planning efforts. Several commenters suggested that EPA base its growth rates on projections other than OTAG, or EPA's IPM forecasts; they especially urged the Agency to consider individual State-prepared forecasts. This was to avoid problems that commenters believe exist in EPA's use of the IPM model for forecasting electricity generation in various areas of the country. Specific concerns focused on:

(i) the effect of IPM projections and associated NO_X budgets on future growth within each State, and

(ii) how the IPM model accounts for:

—planned nuclear unit retirements,
—the impact of a deregulated utility marketplace, and
—improvements in energy efficiency and control technology.

Many commenters also generally expressed concern that there is insufficient information or documentation on how EPA used the IPM model to determine growth factors.

Many commenters asserted that EPA should not incorporate the growth factors into the budget calculation process. These commenters argued that adding growth to baseline activity and subsequently applying controls reduces the stringency of the standards, and introduces an unacceptable level of uncertainty. They suggested that the budgets should be based on historic utilization rates, and that States could then determine how to allocate their budgets to provide for growth. These commenters recommended that, if a growth factor must be used, then EPA should apply a uniform growth rate region-wide to determine the NO_X budget for each State.

Response: The EPA initially considered using the OTAG growth rates, but found that they were largely based on past, State-specific generation trends and did not factor in the more competitive electric power market where electricity will be increasingly moving between regions in response to the cost of producing electricity. The Agency also found that there were several other major limitations that were described in the NPR. (62 FR 60352–60353).

The Agency considered setting the State NO_X budgets based on past generation levels in States, but this approach also does not consider how competition in the industry in the future will alter electricity generation practices. It ignores growth and shifts in production altogether. A variant of this approach, suggested by several commenters, would be to use a uniform growth factor for all States based on some projection of future growth through the 23 jurisdictions covered by this rule. This approach appears even-handed, but EPA views it as unfair and inaccurate with respect to States in which:

(i) utilities are particularly economical to operate, and

(ii) the generation of power by these firms is expected to grow at a rate greater than average.

Another similar alternative suggested in the public comments was that EPA use a uniform growth factor for all States in the same region, e.g., the North American Electricity Reliability Council (NERC) regions, or subregions. The problem with this approach is, again, that certain States within the same region are expected to vary in their rate of growth, given differences in their electric utilities. The fact that some States are in several NERC regions also makes this approach less practical.

The Agency looked at several well-recognized forecasts of regional electricity generation growth, such as those provided by NERC, the *Annual Energy Outlook* of the Energy Information Administration (EIA), and Data Resources Incorporated's (DRI) *World Energy Service U.S. Outlook*. None of these modeling systems provides results at the State level. Therefore, the Agency would have to develop ways to apportion these regional predictions to States. The EPA knows of no way to apportion these regional values to States that would resolve the concerns expressed by commenters. Furthermore, the Agency uses the growth rates from IPM to calculate the cost-effectiveness of NO_X emission reductions, as well as to determine NO_X budgets for States. Therefore, using growth rates that are not from IPM would lead the Agency to using one set of State-specific

[59] The Base Case is the condition of the industry in the absence of the SIP call.

generation estimates to develop NO_X budgets and a different set of State-specific generation estimates for determining cost-effectiveness. As a result, EPA's evaluations of future activities of the power industry might not be considered consistent. Finally, although each of these sources provides reasonable electricity generation forecasts, each of the forecasts could be criticized for the assumptions they make in a manner similar to the way commenters have criticized growth factors from IPM.

Some commenters suggested that the Agency use individual State forecasts instead of IPM forecasts, including projections used for State utility planning efforts. The EPA rejected this type of approach for two reasons. First, nothing in the comments suggested to EPA that the State forecasts are more accurate or more reliable than the IPM forecasts. Instead, the State forecasts varied State by State in the way they predicted future electricity generation. Adoption of these forecasts could result in inconsistencies in setting the State budgets. Electricity generation forecasts require making many technical assumptions which, admittedly, lead to some uncertainty in the results. Accordingly, the Agency believes that the fairest way to determine emissions budgets is to handle these assumptions in a consistent way for all of the States, as long as a reasonable approach and reasonable modeling assumptions are used.

Therefore, EPA has decided to use the IPM 1998 Base Case emissions forecast for deciding State NO_X budgets in today's action. The Agency finds it to be the fairest and most reliable overall approach to estimating growth factors. It deals consistently with the technical assumptions that occur in energy forecasting and employs a reasonable set of assumptions in the process of making a forecast. As an added advantage, it has undergone considerable review by the electric power industry over the last two years, and the industry was aware that it might be applied as it is in today's rulemaking. Finally, EPA's use of IPM for forecasting State growth rates provides for overall consistency in forecasting future emissions and estimating the cost-effectiveness of reductions in this rulemaking.

The EPA believes that IPM provides a reasonable forecast of State growth rates because it carefully takes into account the most important determinants of electricity generation growth that are facing the power industry today. These major factors include: regional demands for electricity, the impacts of wholesale competition that lead to changes in market share for various utilities, changes in fossil fuel prices, expected improvements in electricity generation technology, costs of emission control technology, expected changes in generation unit operations and regional dispatch practices to lower production costs, nuclear unit retirements, alteration in planning reserve margins to meet peak demand, and limitations in moving power between regions due to transmission constraints.

An explanation of how EPA uses IPM to address these issues and other important factors is included in EPA's *Analyzing Electric Power Generation under the CAAA*, March 1998 (Docket no. V–C–3). Because EPA's assumptions have been reviewed by the public over the last two years and the Agency has worked with EIA and other groups to improve them in response to comments and new information, the Agency believes that it has made reasonable assumptions for a Base Case forecast of electric power generation.

c. Use of ''Corrected'' Growth Rates.

Comment: Some comments on the SNPR expressed concern that the new ''corrected'' growth factors are artificially inflated and will compromise efforts to improve air quality throughout the region. Some of the commenters suggested that States should have the flexibility to determine how to manage emissions from new sources in the context of the original growth factors and NO_X budgets proposed in the NPR. Some of these commenters also stated that it was unclear why EPA chose to use the ''revised'' projections in its cost analysis but retained the ''corrected'' growth factors in its budget calculations. Other commenters, however, were supportive of the new growth factors and the use of the ''corrected'' projections. Finally, several commenters requested that EPA further explain how the ''corrected'' growth factors were derived and subsequently used to generate the NO_X budgets.

Response: In the NPR, EPA proposed a set of growth factors based upon the 1996 IPM Base Case forecast. In the SNPR, EPA corrected the growth factors used in calculating State budgets to account for new generation that had inadvertently been left out of the original calculations (the ''corrected'' growth factors). On the basis of comments that EPA has received on its assumptions for forecasting electricity generation throughout the country during the last year, the Agency revised a set of key assumptions at the beginning of 1998. These assumptions lead to a better projection of electricity generation nationally, by region, and by State. Therefore, the Agency has decided to use the 1998 IPM Base Case forecast over the 1996 IPM Base Case forecast as the basis for its ''revised'' State growth estimates.

The recent important changes that were incorporated into EPA's use of IPM in 1998 include using the most recent NERC estimate of regional electricity demand; the latest available EIA and NERC generation unit data; updated fuel forecasts; updated assumptions on nuclear, hydroelectric, and import assumptions (with special attention to differences in summer use); and an increase in the level of detail in the model to more accurately capture the transmission constraints that exist for moving power between various regions of the country. The Agency also updated its assumptions on the size and operation of all electricity generation units of utilities and independent power producers (with special attention to cogenerators) and updated its assumptions on planning reserve margins and the costs of building new generation capacity. For this, the Agency relied heavily on information compiled from utilities by NERC and the EIA. Each of these agencies has regular contact with the power industry and has its data reviewed by the power industry. Again, details on these improvements in IPM can be found in EPA's *Analyzing Electric Power Generation under the CAAA*, March 1998 (Docket no. V–C–3).

In the SNPR, EPA used the ''revised'' growth factors in the IPM model in its cost analysis but used the higher, ''corrected'' growth factors to calculate State budgets. The EPA proposed the higher growth factors because the Agency believed that this results in less cost and more flexibility for sources to achieve their budget reductions beginning in 2003. However, some commenters pointed out that EPA had provided sufficient flexibility by accounting for growth to the year 2007 and applying that growth estimate beginning in 2003. These commenters remarked that it was not necessary to add further flexibility by using the higher, but less current and less accurate, ''corrected'' growth rates. They also stated that EPA should use the most up-to-date information available. The EPA agrees and is using the ''revised'' growth rates based upon the 1998 IPM Base Case forecast to calculate the State budgets used in today's final rule.

3. Budget Calculation

a. Input vs. Output.

Background: In the SNPR, the component of each State's budget assigned to electricity generation was determined using the State's total heat

input, applicable emission rate (0.15 lb/mmBtu), and projected growth in total heat input to 2007. The Agency solicited comment on an alternative approach to calculating the State's budget using each State's share of the 23 jurisdiction electricity generation (electrical output). The SNPR describes in detail the output-based approach, and its possible benefits as advanced by its proponents (63 FR 25907). The Agency asked for comments on the appropriateness, legality, rationale, and methodology for incorporating the output-based approach when calculating the electricity generation component of each State's budget.

Comments: The Agency received comments both supporting and opposing output-based State budgets. Supporters of output-based budgets asserted:

- An output-based budget would promote competition among different types of electricity providers on an equal basis in a deregulated electric utility industry.
- An output-based budget would promote CO_2, mercury, SO_2 and off-season NO_X reductions beyond what would occur under a system that assigns State budgets based upon input.
- An output-based budget may result in more cost-effective NO_X reductions.
- Issuing output-based budgets is legally permissible.

The commenters opposed to output-based State budgets objected to the allocation of allowances to non-NO_X-emitting units, such as nuclear, hydroelectric, solar, or geothermal power plants. They claimed that this would make compliance more difficult and more costly for fossil-fuel burning sources because fewer allowances would be allocated to them.

Commenters opposed to output-based budgets also claimed that:

- Output-based budgets would not necessarily improve energy efficiency compared to existing incentives, such as fuel costs.
- The output-based State budgets may not result in the same geographic distribution of emissions as would occur under the original budget allocation.
- There could be significant administrative problems with changing the basis of the State budgets.

In addition, some commenters, though in general supporting allocations by output, specifically objected to allocating allowances to nuclear-powered units because they believed that this method would encourage nuclear-powered electrical generation, which, they further believed, would have adverse ancillary impacts on the environment.

The Agency received additional comments on the method of allocating State budgets to sources. Further discussion of these comments can be found in Section VI.C.2 of this preamble.

Response: The EPA has an extensive history of promoting the efficient use of natural resources, particularly energy, through both voluntary and regulatory measures. Key emissions standards, such as the standards for new vehicles and the recently promulgated new source performance standards to new power plants, are written as output-based fuel-neutral performance standards that promote the efficient use of energy. The EPA has begun to work with States to find mechanisms to more directly credit the use of energy efficiency measures in SIP. The EPA also has a number of programs that encourage the use of energy efficient technologies by providing energy users, particularly in the residential, commercial and industrial sectors, with information on the economic and environmental benefits of such technologies.

Although the Agency has concluded, for the reasons stated below, that heat-input-based budgets to States are more appropriate at this time, the EPA intends to work with stakeholders to overcome existing obstacles and to design an output allocation system that could be used by States as part of their trading program rules in their SIPs and by EPA in future allocations to States.

The EPA considered how State NO_X budgets would be changed using the output approaches suggested by the commenters. The EPA revised its State budget calculations using available electrical generation data from the EIA for utility and non-utility generators for the higher electrical generation output of either 1995 or 1996, by State. In Table III–1 below, Column 2 presents the proposed budgets based upon heat input. Column 3 presents the revised budgets based upon heat input and the revised growth factors. Column 4 shows output-based budgets, based upon all electrical generation. Some commenters suggested including fossil-fuel and renewable energy source generation—including hydroelectric, solar, wind, and geothermal generation—but not nuclear generation. These are included in Column 5. One commenter suggested using electrical generation from fossil-fuel only, which is included in Column 6.

TABLE III–1.—STATE BUDGETS BY ENERGY SOURCE BASIS

(Higher of 1995 or 1996 EIA data]

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
State	Proposed input-based budgets fossil fuel-burning generators	Revised input-based budgets fossil fuel-burning generators	Output-based budgets all generation sources	Output-based budgets—all generation sources except nuclear	Output-based budgets fossil fuel-burning generators
Alabama	30644	29026	34832	35068	32744
Connecticut	5245	2583	7677	5156	4456
Delaware	4994	3523	2392	3214	3417
District of Columbia	152	207	100	133	142
Georgia	32433	30255	32223	31713	30819
Illinois	36570	32045	44253	27888	29602
Indiana	51818	49020	32212	43285	45831
Kentucky	38775	34923	24847	33389	34166
Maryland	12971	15033	13284	12969	13212
Massachusetts	14651	14780	11017	13248	13496
Michigan	29458	28165	32275	32037	32457
Missouri	26450	23923	19790	22700	23498
New Jersey	8191	10863	12764	11227	11470
New York	31222	30273	39503	39440	32114

TABLE III–1.—STATE BUDGETS BY ENERGY SOURCE BASIS—Continued

(Higher of 1995 or 1996 EIA data]

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
State	Proposed input-based budgets fossil fuel-burning generators	Revised input-based budgets fossil fuel-burning generators	Output-based budgets all generation sources	Output-based budgets—all generation sources except nuclear	Output-based budgets fossil fuel-burning generators
North Carolina	32691	31394	32006	30156	29866
Ohio	51493	48468	39790	47143	50019
Pennsylvania	45971	52006	53450	47014	48476
Rhode Island	1609	1118	2242	3012	3202
South Carolina	19842	16290	23252	14085	13831
Tennessee	26225	25386	26410	26084	24770
Virginia	20990	18258	19091	15700	15567
West Virginia	24045	26439	22853	30708	32527
Wisconsin	17345	18029	15745	16637	16324
Total	563785	542007	542007	542007	542007

The Agency then calculated the effective NO_X emission rate for each State in terms of lb/mmBtu, assuming that the entire electricity generation component of the budgets, as determined by the input or output methods, were allocated to the electric generating units (EGUs). The Agency wanted to evaluate whether the effective NO_X emission rate would be too low to prove feasible absent participation by the State in an interstate NO_X emission trading program. The EPA found that under output-based State budgets from all generation sources, three States would need to impose an effective emission limitation of 0.10 lb/mmBtu or less on their fossil-fuel burning electricity generators (see Column 3 in Table III–2 below). One State would need to impose an emission limitation of 0.07 lb/mmBtu. Such a low effective emission limitation may not be technically achievable if a State chooses not to join an interstate allowance trading program, unless the State requires some sources to shutdown. In contrast, the Agency found that it was feasible and cost-effective to make reductions even without an interstate NO_X trading program under an input-based State budget calculated using a uniform NO_X emission rate of 0.15 lb/mmBtu.

TABLE III–2.—EFFECTIVE EMISSIONS RATES FOR EACH STATE BY OUTPUT BASIS

[Higher of 1995 or 1996 EIA data]

Column 1	Column 2	Column 3	Column 4	Column 5
State	Effective emission rate under input-based budgets (Fossil fuel burning generators) (lb/mmBtu)	Effective emission rate under output-based budgets (All generation)	Effective emission rate under output-based budgets (all generation except nuclear)	Effective emission rate under output-based budgets (Fossil fuel-burning generators)
Alabama	0.15	0.18	0.18	0.17
Connecticut	0.15	0.45	0.30	0.26
Delaware	0.15	0.10	0.14	0.15
District of Columbia	0.15	0.07	0.10	0.10
Georgia	0.15	0.16	0.16	0.15
Illinois	0.15	0.21	0.13	0.14
Indiana	0.15	0.10	0.13	0.14
Kentucky	0.15	0.11	0.14	0.15
Maryland	0.15	0.13	0.13	0.13
Massachusetts	0.15	0.11	0.13	0.14
Michigan	0.15	0.17	0.17	0.17
Missouri	0.15	0.12	0.14	0.15
New Jersey	0.15	0.18	0.16	0.16
New York	0.15	0.20	0.20	0.16
North Carolina	0.15	0.15	0.14	0.14
Ohio	0.15	0.12	0.15	0.15
Pennsylvania	0.15	0.15	0.14	0.14
Rhode Island	0.15	0.30	0.40	0.43
South Carolina	0.15	0.21	0.13	0.13
Tennessee	0.15	0.16	0.15	0.15
Virginia	0.15	0.16	0.13	0.13
West Virginia	0.15	0.13	0.17	0.18
Wisconsin	0.15	0.13	0.14	0.14

Advocates of an output-based approach contend that individual sources would have the greatest incentive to improve their efficiency, relative to all other sources in the program, if both State budgets and individual source allocations were on an output basis and were updated periodically. For example, if a company replaces a turbine with a more efficient one, the unit supplying the turbine would reduce the amount of fuel (heat input) the unit combusts and would reduce NO_X emissions proportionately, while the associated generator would produce the same amount of electricity. Thus, the company would receive the same allowances if an output-based allocation were updated after the efficiency improvement. This same company would receive fewer allowances under a system that reallocates based on heat input after the efficiency improvement. The company would keep the same allowance allocation if it had a permanent allocation, based upon either heat input or output. With a permanent allocation, the company would have more allowances available than before its efficiency improvements because of its emission reductions, but fewer allowances than if it had greater electrical output recognized through an updated allocation. Thus, of the four approaches, an updated allocation based upon output gives the greatest incentive for improving efficiency in electricity generation.

To provide an incentive within the State budget determinations for improving efficiency over time, EPA would need to issue the State budgets based upon output and periodically update those State budgets. However, many industry commenters wanted long-term or permanent allowance allocations to allow for compliance planning. Updates to the State budgets would require States to reallocate allowances to their sources. In addition, States (both upwind and downwind) would find it easier to manage their resources for improving air quality if they receive a fixed budget for a period of years. With a fixed budget, a State would have the choice of whether to periodically adjust allocations rather than being required to periodically reallocate allowances to its sources.

Finally, the Agency continues to have concerns about data available to establish the baseline for an output-based State budget. The EIA withholds some of the electricity generation information it collects from non-utility generators in order to protect source confidentiality. Therefore, part of the generation data required to establish State budgets is not available to EPA. Thus, EPA would have difficulty in computing and defending State budgets.

In addition, some units are cogenerators, which are electrical generators that divert part of their heated steam to provide heat (steam output), rather than to generate electricity. Information on steam output from cogenerating units or from industrial boilers is not currently available to EPA. A cogeneration unit that was included under the State budget as an electricity generating unit based upon heat input would only have its electrical output included in an output-based State budget, ignoring the portion of heat input used to generate steam output. Thus, output-based State budgets based on currently available data could inadvertently underallocate budgets to States with many cogenerators, which are some of the most efficient units. This could actually discourage improvements in efficiency through cogeneration.

For the reasons stated above, the Agency concludes that it is not appropriate to develop output-based State NO_X emission budgets at this time. However, the Agency does believe that output-based allocations to sources could provide significant benefits. As stated earlier in this Section, the EPA intends to work with stakeholders to overcome existing obstacles and to design an output allocation system based on electricity and steam generation that could be used by States as part of their trading program rules in their SIPs. In addition, EPA is proposing FIPs for States that do not submit adequate SIPs by the deadline required by this final rulemaking. As part of its proposal, the Agency is soliciting comment on source allocations for each State based upon both input and output. While EPA believes that the output data are not sufficiently complete or accurate to use for final budgets or for final source allocations at this time, the Agency is taking comment on the proposed allocations in order to receive public comment and to develop more accurate and more complete output data that could be used in the final FIP rulemaking.

The EPA does believe that, over the long-term, it should continue to look at the issues that surround the use of output-based allocations. In addition, as stated in Section III.B.5. of this preamble, the Agency will review the progress of States in meeting their budgets in 2007. In that review, the Agency will consider not only whether the SIPs achieved the reductions that had been projected to meet the budgets, but also issues such as future budget levels and allocation mechanisms including shifting to an output-based allocation method.

b. Alternative Emission Limits.

Comments: The EPA received numerous comments on the proposed uniform control level of 0.15 lbs/mmBtu for the EGU sector assumptions across the 23 jurisdictions. Many States supported this proposed control assumption. The EPA also received a number of alternative proposals. These contain emission-reduction assumptions ranging from 0.12 lb/mmBtu to be implemented on the schedule proposed in the NPR to a phased approach that starts with 0.35 lb/mmBtu to be implemented by sector and provides for further evaluation of the need for more stringent levels. The latter commenters based their recommendations on their views that emissions from upwind States do not have an ambient impact that is as important as EPA believes, or that implementation of the EGU control levels proposed by EPA would not be feasible by the date EPA proposed. In addition, a number of utilities and other commenters voiced concern that the proposed control assumption of 0.15 lb/mmBtu would be too stringent to provide sufficient surplus allowances for trading.

Response: At the time of the proposal, EPA chose 0.15 lb/mmBtu as the assumed uniform control level for EGUs because it provided the greatest air quality improvements feasible and was cost-effective because its cost ($1,700 per ton NO_X removed in the 5-month ozone season) was, on average, within the cost range of other controls that had been recently promulgated or proposed. The EPA also investigated the costs of several alternative uniform control options: 0.25, 0.20, and 0.12 (though 0.12 resulted in lower emission levels, its average cost-effectiveness calculated at the time of the proposal was $2,100/ton, exceeding EPA's target cost range of $1,000 to $2,000/ton).

Subsequent to the NPR and SNPR, EPA updated its EGU costing model (IPM) and revised stationary source emission inventories (based on public comment). These revisions and corrections lowered the average cost of compliance for all the control levels considered. Additionally, EPA conducted extensive air quality modeling of a number of alternative control levels. The results of the air quality analyses were examined using a number of different metrics for both the one-hour and eight-hour standards. These air quality analyses are discussed in more detail in Section IV of this notice.

The revised air quality analyses show that there is no ''bright line'' to illustrate at what control levels the air quality benefits begin to diminish. The air quality metrics suggest there are corresponding incremental air quality improvements at every incremental control level. For example, tightening the control level improves ozone levels in many non-attainment areas and leads to additional counties achieving attainment under the one-and eight-hour standards. All metrics analyzed show that as the control level moves from 0.25 to 0.20 to 0.15 to 0.12 lb/mmBtu, air quality benefits increase. The analyses also show that none of the alternative control options results in attainment of the ozone standard in all nonattainment areas.

The EPA did not select levels higher than 0.15 lb/mmBtu (such as 0.20 lb/mmBtu or higher) because the 0.15 lb/mmBtu level offers more air quality benefits at a cost that is still highly cost-effective. Moreover, EPA did not have information to indicate that these higher levels could be implemented meaningfully sooner than controls at the 0.15 lbs/MmBtu level. The EPA acknowledges that the 0.12 lbs/MmBtu emission level is also within the average cost-effectiveness range based on the revised cost analysis. The incremental cost-effectiveness of this option is $4,200 per ton, an incremental cost per ton which is 85 percent higher than that for the 0.15 lb/mmBtu level. However, for reasons explained Section II.D., the EPA is not relying on this emission level.

The revised IPM analyses project that under the 0.12 control option, 54 percent of affected EGU capacity should install selective catalytic reduction (SCR) and 41 percent should install selective non-catalytic reduction (SNCR). The installation requirements for SNCR are significantly less extensive than for SCR. The analysis of the 0.15 lb/mmBtu control option projects 31 percent of affected EGU capacity should install SCR and 54 percent should install SNCR. Further, the technical record provides many examples in the United States and internationally of the ability of coal-fired units to achieve emission levels below 0.15 lb/mmBtu with the installation of SCR. The record contains fewer international examples, and only one US example, of a coal-fired unit's ability to achieve emission levels below 0.12 lb/mmBtu.

In terms of the proposed level of control on which the trading program budget is based, EPA believes that trading at 0.15 lb/mmBtu is feasible because the proposed limit can readily be achieved by gas and oil-fired boilers. In fact, more than 50 percent of gas and oil-fired boilers already operate at NO_X levels below 0.15 lb/mmBtu and should readily be able to generate emission credits if affected States join a trading program.

The EPA recognizes that for coal-fired boilers to operate at or below a 0.15 lb/mmBtu emission limit, SCR would generally be necessary. Under a trading scenario, however, if one coal-fired boiler is able to emit below 0.15 lb/mmBtu by installing SCR, it can provide emission credits to another coal-fired boiler and obviate the need for that second boiler to install SCR.

A remaining issue is whether SCR can achieve NO_X levels below 0.15 lb/mmBtu. The EPA believes that SCR technology is capable both of reducing NO_X emissions by more than 90 percent and reducing NO_X rates below the proposed 0.15 lb/mmBtu limit, provided the appropriate regulatory incentive (i.e., emission limit or economic incentive) exists. As discussed in EPA's recent report, ''Performance of Selective Catalytic Reduction on Coal-Fired Steam Generating Units,'' emission rates below 0.15 lb/mmBtu are currently being achieved by a number of coal-fired boilers using SCRs. Examples include: (1) Three Swedish boilers achieving rates between 0.04 and 0.10 lb/mmBtu; (2) six German boilers achieving rates between 0.08 and 0.14 lb/mmBtu; (3) two Austrian boilers achieving rates between 0.08 and 0.12 lb/mmBtu; and (4) four U.S. boilers achieving rates between 0.07 and 0.14 lb/mmBtu. The EPA also recognizes that these boilers, with the exception of the Swedish boilers, have SCR systems designed to achieve target emission limits. As a result, they fail to provide an accurate picture of the emission levels which SCR is capable of achieving below the target emission threshold. For this reason, EPA cannot confidently conclude that enough units can feasibly achieve levels at 0.12 lbs/MmBtu. In summary, EPA believes that an emission rate of 0.15 lb/mmBtu reflects the greatest emissions reduction that EPA can confidently conclude is feasible and that is highly cost-effective, and provides ample allowances to sustain a market under the NO_X Budget Trading Program.

c. Consideration of the Climate Change Action Plan.

Background: The President's Climate Change Action Plan (CCAP) calls for implementation of over 100 voluntary programs aimed at reducing greenhouse gas emissions. A large number of them are aimed at reducing future electricity demand throughout the country. Already, some of these programs have shown striking results in accomplishing their energy efficiency objectives.

Comment: Two commenters noted that it is inappropriate for EPA to incorporate assumed reductions in energy use based on the voluntary measures of the CCAP, which are not binding like a regulation.

Response: The EPA believes that it is appropriate to incorporate the impact of the voluntary measures in the CCAP on future electricity demand. The EPA has always believed that it is appropriate to incorporate any reasonable assumptions that the Agency can support that will affect future electricity demand, or electricity generation practices, into its Base Case forecast. For example, improvements in electricity generation technology, fuel prices changes, and other types of assumptions that are important elements of EPA's forecast of electricity generation and resulting air emissions are also not mandated by regulation. The Agency has considered the impact of the CCAP in using the IPM model for analysis since 1996, and documentation of the assumptions that the Agency has been making have been available for public review since April 1996. Until now, there have been no challenges to this consideration in the numerous reviews that there have been of EPA's documentation of how it uses the IPM model. Also, no one has challenged EPA's specific approach to factoring the CCAP into its electricity generation forecast. (This can be confirmed by examination of the dockets for the Clean Air Power Initiative and the Phase II Title IV NO_X Rule, records of EPA's Science Advisory Board, and the records of the Ozone Transport Assessment Group meetings.)

The EPA updated its assumptions in IPM for the CCAP at the beginning of 1998. The EPA updated its assumptions in the same manner as it has done in the past—by lowering the most recent NERC demand forecast by the amount of electricity demand between 2000 and 2010 that the best available analysis suggests will occur due to the activities in CCAP. The EPA used the in-depth evaluation of the future implications of the CCAP for reducing electricity demand that was the basis for the findings in the Administration's Climate Action Report, July 1997. The amount of demand reduction that occurs appears in Analyzing Electric Power Generation under the Clean Air Act, March 1998. The Climate Action Report analysis was reviewed extensively within the Federal government by EPA, the Department of Energy and other Federal agencies, and the report was reviewed publicly before its publication. The EPA has not received criticism that it has overstated

the electricity demand reductions that are the basis for the carbon reductions under the CCAP.

Notably, the electricity demand reductions were distributed evenly throughout the United States, and therefore have no influence on the share of the total amount of NO_X emissions that each State receives. Furthermore, the Agency examined the implications on its cost-effectiveness determination of not including the CCAP reductions in its electricity demand forecast. The EPA found that even if the Agency did not assume the CCAP reductions, it was still highly cost-effective to develop a regional level NO_X budget for the electric power industry, based on the level of control that EPA has assumed. (These results appear in Chapter 6 of the Regulatory Impact Analysis for the Regional NO_X SIP Call, September 1998.)

C. Non-EGU Point Sources

Background: The EPA developed the NO^X SIP call emissions inventory for non-EGU point sources based on data sets originating with the OTAG 1990 base year inventory. The OTAG prepared these base year inventories with 1990 State ozone SIP emission inventories, and EPA supplemented them with either State inventory data, if available, or EPA's National Emission Trends (NET) data if State data were not available.

For the SNPR, non-EGU point source inventory data for 1990 were then grown to 1995 using Bureau of Economic Analysis (BEA) historical growth estimates of industrial earnings at the State 2-digit Standard Industrial Classification (SIC) level. These emissions were grown to 1995 for the purposes of modeling and to maintain a consistent base year inventory with the EGU data. Because BEA data are historical documentation of industry earnings, EPA considered these to be among the best available indicators of growth between 1990 and 1995 (63 FR 25915). Once the common base year of 1995 was established for these source categories, the BEA growth assumptions utilized by OTAG were used to estimate the 2007 base case inventory.

1. Base Inventory

Comment: The majority of comments related to the non-EGU point source inventory alleged that these inventories were incomplete or inaccurate. The comments generally addressed missing sources, non-existent or retired sources, incorrect source sizes, mis-classification of processes, or emission allocation inconsistencies. Many of these commenters provided specific adjustments to be made to the inventories, including emissions modifications, activity factors, source sizes, and facility name changes. A number of States supplied completely new inventories to replace what was in the proposed data sets. Other commenters made broad, general categorical comment on the quality of the inventories with no supporting data.

Response: As was followed under the OTAG inventory update procedures, all State supplied comments were generally incorporated ''as is'' with the understanding that each State quality-assured its own data before submission. Industry-supplied comments were forwarded to respective State agencies for review and where data were deemed appropriate for inclusion, integrated into the inventories. In some instances, States responded that the data provided by the State should override that supplied by industry, or vice-versa. Comments were, in some cases, not incorporated when necessary to prevent double counting of emissions in point and area source inventories, where base year emission modifications were calculated from permitted emission levels and not actual operating activity, where additional supporting data could not be provided by the commenter, or where comments were general characterizations of inventories or inventory sectors. Note that even after State review, if the EPA felt that the data, procedures, methodologies, or documentation provided with the comment were not sufficient, valid, or justifiable, comments, or portions thereof, were excluded from the revision.

Both 1990 and 1995 base year emission and growth modifications were submitted and where 1990 data were provided, the methods described earlier in this Section were utilized to account for growth to 1995 and 2007 levels.

2. Growth

Comment: Several commenters suggest that the growth factors used to determine 2007 non-EGU point source base year inventories are inaccurate or inconsistent across regions and categories of the inventory. They explained that if growth factors are to be used to estimate future base year emissions, consistent national or region-wide values should be utilized for all categories across all States within the domain. This, they continue, would promote equitable potential progress to all areas and not penalize those that have shown past poor growth rates. Some commenters go on to state that growth rates based on past growth automatically disadvantage States which have suffered from unusually low growth rates. In addition to growth rates, some commenters provided 2007 base year emission estimates either with or without the growth and control information needed to validate their calculation.

Response: As noted above, EPA relied on BEA State-specific historical growth estimates of industrial earnings at the 2-digit SIC level as among the best available indicators of growth for non-EGU point sources. The BEA projection factors assume the continuance of past economic relationships. These factors are published every five years and adjusted to account for recent production and growth trends. For this reason, BEA data provide a useful set of regional growth data that EPA recommends for use in preparing emission inventory projections. It is true that BEA projection factors differ among different areas and different source categories because of historical differences in industrial growth among those different areas and source categories. However, in general, these projection factors offer the most reliable indicators of future growth as are available.

In cases where commenters questioned the use of EPA's growth rates but provided no alternative of their own, EPA had little choice but to continue to use the BEA-derived growth rates. Some commenters provided alternative or supporting information for modification of source category or State growth estimates. In those cases where a State or industry may have had more accurate information than the BEA forecast (e.g., planned expansion or population rates), data were verified and validated by the affected States and by EPA, and revisions were made to the factors used for that category.

3. Budget Calculation

Background: In the NPR and SNPR, EPA proposed that EGUs with a capacity less than or equal to 25 MWe or 250 mmBtu/hour would be considered small sources (''cutoff level'') and, as such, EPA would not assume an emissions decrease as part of the Statewide budget for this group of sources. At the same time, EPA proposed 2 cutoff levels for industrial (non-EGU) boilers and turbines: units with a capacity greater than 250 mmBtu/hour were defined as large units subject to a 70 percent emission reduction assumption; units with a capacity less than or equal to 250 mmBtu/hr but with emissions greater than 1 ton/day were defined as medium units subject to reasonably available

control technology (RACT); and units with a capacity less than or equal to 250 MmBtu/hr and with emissions less than or equal to 1 ton per day were considered small sources for which no reduction would be assumed in the budget. In the SNPR, EPA specifically invited comment on the size cutoffs and on treating large industrial combustion sources (greater than 250 mmBtu or approximately 1 ton per day) at control levels equal to that for EGUs (63 FR 25909). As described below, this approach has been modified somewhat in response to comments and further analysis.

a. Proposed Control Assumptions.

Comments: Some comments supported EPA's proposed approach of assuming 70 percent and RACT controls in its calculation of the budgets. Numerous comments were received stating that the 70 percent reduction is inappropriate, may not be cost-effective and may not be achievable, especially for the following industries: cement plants; municipal waste combustors; certain pulp and paper operations, including lime kilns and recovery furnaces; glass manufacturing; steel plants; and some industrial boilers. Some comments suggested a control level of 60 percent rather than 70 percent. On the other hand, one commenter stated that SCR and SNCR are applicable and have been installed on hundreds of industrial sources.

Response: The EPA generally agrees that 70 percent emissions reduction is not appropriate for all large sources or all large source categories, even though SCR and SNCR are applicable and cost-effective for many sources. Instead of applying a one-size-fits-all percentage reduction to all large non-EGU sources, the specific emissions decreases assigned to each of these source categories for purposes of budget calculation in the final SIP Call rulemaking reflect the specific controls available for each source category that achieve the most emissions reductions at costs less than an average of $2,000 per ton. As described elsewhere in this notice, EPA's analysis results in calculating budget reductions ranging from 30 percent to 90 percent for several source categories and no controls to several other source categories.

b. Small Source Exemption.

Comments: In general, commenters were supportive of EPA including a cutoff level as part of the budget calculation; however, there were many suggestions on what the cutoff should be. The EPA received numerous comments supporting the proposed cutoff level of 25 MWe for EGUs, which is approximately equivalent to 250 mmBtu/hr or one ton per day. In addition, EPA received a few comments supporting a 250 mmBtu/hr cutoff for non-EGU point sources. Commenters indicated that the levels were appropriate and that it was important to be consistent with cutoff levels in the OTC's NO_X trading program. The Ozone Transport Commission (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. These reductions are in addition to previous OTC state efforts to control NO_X emissions, which included the installation of reasonably available control technology. The OTC's NO_X trading program requires utility and nonutility boilers greater than 25 MWe or 250 mmBtu to reduce emissions in order to meet a NO_X budget and allows emissions trading consistent with that budget. These NO_X reductions will take place in two phases, the first phase beginning on May 1, 1999 and the second phase on May 1, 2003.

Some comments suggested assuming budget controls on units less than or equal to 25 MWe at RACT levels without a cutoff level. Others supported EPA's proposal of assuming no additional controls on these sources. Some comments suggested exempting medium-sized non-EGU sources.

Many commenters supported the general 1 ton per day exemption contained in the NPR and SNPR. However, a few comments suggested a more stringent cutoff level of 50–100 tons per year, similar to definitions of ''major source'' in the CAA. One commenter recommended a less stringent level of 5 tons per day cutoff level.

A few comments suggest using tons per day as the primary criterion to define large- and medium-sized non-EGU sources, rather than boiler capacity. This approach would exempt, for example, industrial boilers that exceed the 250 mmBtu capacity, but which emit less than one ton per day on average. The EPA's proposed approach considers a source large if heat input capacity data are available and exceed the 250 mmBtu capacity criterion, regardless of its average daily emissions. In support of this approach, commenters stated that industrial operations do not usually operate at or near capacity, while EGUs often do.

A few commenters indicated that the OTAG recommendations for turbines and internal combustion engines (in terms of horsepower cutoff levels) be used. OTAG had recommended cutoff levels of 4,000 horsepower for stationary internal combustion engines and 10,000 horsepower for gas turbines.

Response: For reasons described below and in the NPR (62 FR 60354), EPA believes that the cutoff levels of 250 mmBtu/hr and 1 ton per day for large non-EGU point sources are appropriate. The EPA selected 250 mmBtu/hr and 1 ton per day primarily because this is approximately equivalent to the 25 MWe cutoff used for the EGU sector. Emission decreases from sources smaller than the heat input capacity cutoff level, and that emit less than 1 ton of NO_X per ozone season day, are not assumed as part of the budget calculation; these sources are included in the budget at baseline levels.

The EPA believes that the 1 ton per day exclusion contained in the NPR and SNPR is appropriate and necessary. This level allows today's rulemaking to focus, for the purpose of calculating the budget, on the group of emission sources that contribute the vast majority of emissions, while at the same time avoids assuming emissions reductions from a very large number of smaller sources (as described in the following paragraph). In taking today's first major step towards reducing regional transport of NO_X, EPA does not believe that emission reductions from these small sources need to be assumed. This approach provides more certainty and fewer administrative obstacles while still achieving the desired environmental results. Although other cutoff levels were suggested by commenters, EPA believes that the cutoff levels described above strike the appropriate balance so that reasonable controls may be applied by States to a sufficient but manageable number of sources to efficiently achieve the needed emission reductions.

Most small sources emit less than 100 tons of NO_X per year. Although their total emissions are low, small sources account for about 90 percent of the total number of point sources. Thus, not assuming controls on these sources at the present time would greatly limit administrative complexity and reporting costs. This common-sense approach results in reducing the non-EGU population potentially affected by the ozone transport rule from more than 13,000 sources estimated in the NPR and SNPR to under 1,200.

Although a few comments suggested using tons per day, not capacity (MWe or mmBtu/hr), for setting cutoff levels, EPA chose primarily to use capacity indicators. This approach is consistent

with the framework of the emissions trading program. In addition, EPA is concerned that units could have low average emissions during the ozone season but relatively high emissions on some high ozone days. Accordingly, EPA is relying on a capacity approach first and a tons per day approach second (where capacity data is not available or appropriate) to define units for which reductions are assumed in EPA's budget calculations.

As noted in the proposal notices, horsepower data was generally absent from the available emissions inventory data. Thus, the OTAG recommendation could not be used. Because quality assured data are still lacking, EPA used alternative approaches to determine size categories as described above. For the purposes of calculating the State budgets, the following approach is used to determine whether controls should be assumed on a particular source for the purposes of calculating the budget:

1. Use heat input capacity data for each source if the data are in the updated inventory.
2. If heat input capacity data are not available, use the default identification of small and large sources developed by EPA/Pechan for OTAG and also used to develop the NPR and SNPR budgets for source categories with heat input capacity fields (''default data'').
3. Emission reductions would be assumed if specific source heat input capacity data or default data indicate that a source is greater than 250 mmBtu/hr in the updated inventory.
4. If specific or default heat input capacity data are not available in the updated inventory (or not appropriate for a particular source category), emission reductions would be assumed if the unit's average summer day emissions are greater than one ton per day based on the updated inventory.
5. All others are ''small'' and no emission reductions are assumed.

c. Exemptions for Other Non-EGU Point Sources.

Comments: Several comments described source categories that might be excluded from being assigned assumed emissions decreases for purposes of calculation of the NO_X budgets. In the NPR, EPA assumed a 70 percent reduction from large sources and RACT on medium-sized sources. Some commented that it is not possible to control lime kilns and recovery furnaces or that potential NO_X emissions reductions are very small. One comment noted that recovery units typically emit at a rate of 0.15 lb/mmBtu or less and lime kilns at 0.20 lb/mmBtu or less and suggested establishing an emissions rate floor so that sources emitting less than 0.15 lb/mmBtu (or some other floor) would not need to further control. Other commenters suggested exempting cyclone boilers less than 155 MWe and all aircraft engine test facilities.

Response: The EPA agrees that for purposes of today's rulemaking the State budgets should not reflect assumed reductions in emissions from lime kilns, recovery units and aircraft engine test facilities. The amount of emissions from these source categories is very small relative to other point source categories considered in this rulemaking. Further, there is no experience in applying NO_X control technologies full scale to aircraft engine test cells in the U.S. (EPA–453/R–94–068, October 1994).

The EPA acknowledges that NO_X controls may be available at costs less than $2,000 per ton for lime kilns, recovery units and aircraft engine test cells. However, these source categories include a relatively small number of sources with a small amount of emissions. The EPA is concerned that assuming controls on these sources for purposes of State budgets would encourage States to attempt to regulate these sources. The EPA believes State regulation could be inefficient because of the relatively high administrative costs of developing regulations for these few source categories (particularly for aircraft engine test cells because no regulations have been developed for this source category).

Similarly, EPA determined for each of the following non-EGU point source categories that the amount of emissions are small relative to the total non-EGU point source emissions and, thus, State regulation could be inefficient because of the relatively high administrative costs of developing regulations for these few source categories: ammonia, ceramic clay, fiberglass, fluid catalytic cracking, iron & steel, medical waste incinerators, nitric acid, plastics, sand/gravel, secondary aluminum, space heaters, and miscellaneous fuel use operations. Further, for many of these categories the number of sources is small and/or control technology information is limited (e.g., where an Alternative Control Techniques document does not exist for that category). The EPA believes that it would be an inefficient approach to suggest that States consider adopting emissions reduction regulations for each of these categories. Therefore, EPA did not calculate emissions reductions from these source categories for purposes of calculating the budget.

At this stage in the process to reduce regional transport, EPA considers it most efficient to focus State and administrative resources on the source categories with greater amounts of emissions. While States may choose to control any mix of sources in response to the SIP call, EPA is not, in today's rulemaking, assuming reductions from these source categories as part of the budget reduction calculation and does not believe it is necessary for States to do so.

It should be noted that EPA is generally treating the non-EGU boilers/turbines in the same manner as the EGUs to enable States that opt into a trading program to develop a simple and effective trading program. Thus, the size cutoffs discussed earlier in this section are identical. Further, the regulatory definition of a unit has been revised to make it clear that only fossil-fuel fired boilers and turbines are affected; this is discussed in detail in the trading program section later in today's notice. In addition, it should be noted that EPA is not excluding reductions from cyclone boilers, whether EGU or non-EGU, between 25–155 MWe from the calculation of the State budgets in this rulemaking. Such sources can be large emitters of NO_X and EPA expects the control costs will be less than $2000/ton on average through participation in the emissions trading program.

d. Sources Without Adequate Control Information.

Comments: As described in the SNPR, there are many sources in the emissions inventory which lack information EPA would need to determine potentially applicable control techniques. The SNPR proposed to leave these sources in the budget without assigning any emissions reductions. The EPA received comments that generally supported the SNPR approach not to assign emissions reductions to the diverse group of sources where the Agency lacked sufficient information to identify potential control techniques (63 FR 25909).

Response: This group of sources is diverse and does not fit within the categories set out by EPA, but total emissions are low for this group. The EPA believes that the effort needed to collect adequate information concerning controls for those sources (about 6,000 small and 260 medium or large) would be time consuming, the quality of the information may be uncertain, and it would potentially affect only a small amount of NO_X emissions. Therefore, for purposes of today's action, EPA continues not to assume decreases in emissions for these sources for purposes of calculation of the State budgets, but to keep them in the budgets at baseline levels. In the future, as more information becomes available, and if additional NO_X control is needed to further reduce ozone transport, further

consideration of these sources may be necessary. Of course, States with adequate information may choose to control these sources to meet their budgets.

e. Case-By-Case Analysis of Control Measures.

Comments: Some commenters suggested that EPA simply assume reasonably available control technology (RACT) for medium and, in some comments, large sources in all upwind States on a case-by-case basis and assure that marginally stringent source-specific reduction levels are rejected. Many commenters stated that RACT default levels used by EPA were not sufficiently accurate and that case-by-case analysis was needed because every industrial source is different. Other comments generally stated that control level decisions should only be made on a case-by-case basis because each affected unit may have unique features that alter its cost-effectiveness.

Response: In the final budget calculation procedure EPA does not calculate RACT requirements for medium-sized sources. The assumption of RACT or other controls on industrial boilers and turbines between 100–250 mmBtu/hr would have been inconsistent with EPA's approach for utility boilers and turbines, which exempts units less than or equal to 250 mmBtu/hr. To be consistent with the way EPA treats EGUs and because data is often lacking for the smaller size sources, EPA redefined ''affected'' non-EGU units to primarily include those greater than 250 mmBtu. In cases where heat input data are not available, affected non-EGU units are those greater than 1 ton per day; this level is also consistent with the EGU cutoff because it is approximately equivalent to the 250 mmBtu level. Consistency with the EGU approach is important because it provides equity, especially among the smaller boilers and turbines and simplifies the model trading program. Therefore, the final rule does not calculate budget reductions for the medium size non-EGUs.

For the above reasons and as described below, EPA has examined the non-EGU sources on a category-by-category basis and determined appropriate control level assumptions for the large units. There are several reasons why EPA did not choose to calculate the budget by examining sources on a case-by-case basis. First, such an approach would be inefficient since all large sources would need to be examined, rather than some source categories being eliminated due to category specific cost-effectiveness limitations or amount of emissions. Second, it would be very difficult for the States to complete a case-by-case analysis of their large sources, develop rules, and respond to the SIP call within the 12 month time frame (or the statutory maximum 18 months). States needed much more time to respond to a similar requirement, the 1990 CAA NO_X RACT program. The CAA allowed a 2-year period before the NO_X RACT rules were due from the States; however, few States met this time frame and several adopted generic RACT rules which, in practice, resulted in much longer time frames before the case-by-case RACT analyses were completed and State rules adopted. Third, the option of participating in a trading program should mitigate cost impacts on some sources that may have unique configurations or other constraints. Fourth, EPA has often issued standards on a category-wide basis (e.g., New Source Performance Standards) which have proved workable even though some individual units have higher costs than the average. Fifth, the results of such case-by-case analyses may not be perceived to be as equitable as the categorical approach because the control levels resulting from the case-by-case approach are likely to vary from source-to-source and State-to-State. Finally, the category-by-category approach selected by EPA is preferred because it will achieve air quality benefits sooner than the case-by-case approach.

f. Cost-Effectiveness.

Comments: The EPA received numerous comments on cost-effectiveness. Those comments related to uniform control levels or cost per air quality improvement are addressed elsewhere in this notice. Some comments supported EPA's proposed $2,000 per ton approach. Some commented that EPA should use incremental costs, which are the costs and reductions associated with obtaining further control from a unit that already has some level of controls installed. Several commenters suggested using marginal costs, defined as the cost of the last ton of NO_X removed by a control strategy. Many stated that the costs for non-EGUs should be no greater than for utilities on a $/ton basis. One commenter noted that non-EGU costs will be considerably lower than EPA estimates. One comment suggested that EPA assume no further controls if the source has BACT, LAER, MACT or RACT already in place. One comment supported a command-and-control approach instead of the least cost for the non-EGUs, and asserted that controlling 13,000 sources through this rulemaking may not be feasible. Several commenters suggested that CEMS costs for non-utilities should be included in the cost-effectiveness determinations and that alternative monitoring methodologies should be considered.

Response: The EPA believes that the approach of average cost-effectiveness described in the proposal notices is appropriate for this rulemaking. In establishing the upper limit of the cost-per-ton range that EPA considers highly cost-effective for this rulemaking, EPA relied on average cost-effectiveness values estimated for recently proposed or promulgated rulemakings. The marginal cost-effectiveness for the level of control decided upon in the other programs and rulemakings was not always estimated or readily available. The EPA's latest assessment of cost-effectiveness does account for the level of existing or planned control in the baseline case. Therefore, when EPA refers to average cost-effectiveness it is the average incremental cost between the base and the more stringent level of control.

For the non-EGU point sources, in the NPR and SNPR EPA had aggregated the non-EGUs as one group, which meant that a few source categories with relatively low costs and high percentage emissions decreases dominated overall average cost-effectiveness. For today's final action, EPA revised its approach and analyzed individual source categories to determine if control techniques are available at average costs less than $2,000 per ton. Further, EPA included in this cost-effectiveness approach the costs related to CEMS, because this is a new and potentially high cost to some of the non-EGU source categories. As described in the RIA that supports this final rulemaking, EPA's analysis determined that the following non-EGU source category groupings could achieve substantial emissions decreases at average costs less than $2,000 per ton: industrial boilers and turbines, stationary internal combustion engines, and cement manufacturing. As further described in the RIA, controls for sources grouped in the following categories exceed $2,000 per ton: glass manufacturing, process heaters, and commercial and industrial incinerators.

The EPA believes that, over time, costs for non-EGU point sources will be lower than current EPA estimates; however, the changes cannot be quantified at this time. As discussed below, EPA agrees that one source category that has a NO_X standard set through the MACT process should not be assumed to implement further controls.

g. Industrial Boiler Control Costs.

Comments: Several comments were submitted indicating that industrial

boiler costs are generally higher than utility boiler costs. The comments cited factors of load variability, smaller size/economies of scale, firing of multiple fuels, and the ability to finance new controls and pass on costs. Some comments stated that most industrial boilers are one-seventh the size of utilities and, thus, EPA should recognize that the costs of controls would generally be higher due to economies of scale.

Response: The EPA agrees that industrial boiler sources are generally smaller than utility boiler sources; however, some individual industrial sources are larger than some utility sources. The EPA agrees that costs, on average, to the industrial sector are expected to be somewhat greater than that expected by the utilities due, in part, to economies of scale and the need for CEMS (which are already in place at utilities). Primarily due to the costs related to continuous emissions monitoring systems, EPA's reanalysis of cost-effectiveness for industrial boilers resulted in a control level of 60 percent, which is less stringent on average than that for utilities.

h. Cement Manufacturing.

Comments: In the NPR, EPA proposed a 70 percent control assumption on large sources and RACT on medium sources, including cement plants. Some commenters suggested that cement manufacturing should be excluded because in the SIP Call area, there are only a few cement plants and they have low emissions. Several commenters noted that many cement plants had already implemented NO_X RACT controls. Some comments disagreed with the costs and controls contained in EPA's Alternative Control Techniques document (EPA–453/R–94–004, March 1994) and added that EPA should not assume the same controls for different types of cement plants. Several commenters stated that 70 percent control is not feasible and SCR costs would be greater than $4,500 per ton, but that 20–30 percent control is possible. One commenter stated that the SIP call would provide a major competitive advantage to plants outside the region, and that multi-plant companies may shut down facilities inside the SIP call region and increase output at plants outside.

Response: Over 50 cement manufacturing units together emit more than twenty percent of emissions from large point sources not in the trading program (about 40,000 tons per season). The EPA believes that the emissions from this one industry are sufficiently high that it is appropriate to examine the availability of cost-effective controls.

The cost and control estimates in the Alternative Control Techniques (ACT) document were peer reviewed and, as such, are considered by EPA as the best data available. Consistent with the ACT document for this industry, EPA generally agrees with the commenters that a 70 percent control level would exceed the $2,000 per ton level used as EPA's cost-effectiveness framework. But, with the evidence cited in the cement ACT document and in some comments, EPA believes that a 30 percent reduction from uncontrolled levels would be within the cost-effectiveness range for reducing emissions at all types of cement manufacturing facilities. Therefore, the budget calculations assume a 30 percent control level for this source category. The EPA does not anticipate that, if States were to choose to apply a 30 percent control level to cement plants, this would be a major competitive disadvantage for plants located in the SIP call area because many cement plants in the region have already successfully implemented such controls in State RACT programs.

i. Stationary Internal Combustion Engines.

Comments: One comment suggested EPA set RACT levels at 25 percent for this category.

Response: As noted above, EPA is not using a RACT approach in the final rulemaking, but has examined each non-EGU point source category separately to determine the maximum available emissions reductions from controls that would cost less than $2,000 per ton on average. As described in the RIA, this process of looking at source categories individually resulted in EPA changing the control level assumption for this category from 70 percent in the NPR to 90 percent control in today's final rule. As described elsewhere in this notice, EPA also changed the control level assumptions for other source categories through this more detailed approach.

For this source category, EPA determined based on the relevant ACT document, that post-combustion controls are available that would achieve a 90 percent reduction from uncontrolled levels at costs well below $2,000 per ton. (EPA–453/R–93–032, 1993.) Therefore, the budget calculations include a 90 percent decrease for this source category from uncontrolled levels.

For spark ignited rich-burn engines, non-selective catalytic reduction (NSCR) provides the greatest NO_x reduction of all technologies considered in the ACT document and is capable of providing a 90 to 98 percent reduction in NO_X emissions. The control technique for spark ignited lean burn, diesel, and dual fuel engines is selective catalytic reduction (SCR). The SCR provides the greatest NO_X reduction of all technologies considered in the ACT document for these engines and is capable of providing a 90 percent reduction in NO_X emissions.

j. Industrial Boilers and Turbines.

Comments: Several commenters indicated that boilers using SNCR may achieve 40–60 percent reduction, but not 70 percent. Other comments supported the 70 percent control level proposed.

Response: The EPA examined the category of industrial boilers and turbines to determine the largest emissions reductions that would result from controls costing less than $2,000 per ton on average, including costs related to CEM systems. As described in the RIA, for this source category, EPA determined that controls, including SCR and SNCR, are available that would achieve a 60 percent reduction from uncontrolled levels at costs less than $2,000 per ton on average. For those sources that participate in the trading program, EPA believes that the costs would be further reduced. Therefore, the budget calculations include a 60 percent reduction for this source category from uncontrolled levels.

k. Municipal Waste Combustors (MWCs).

Comments: Several comments suggested that State budgets should not reflect emissions decreases for MWCs beyond those already required by the MACT rules.

Response: The NPR did not assume reductions for MWCs in the calculation of the budgets. However, since MACT reductions are required, and will be achieved well before 2007, those reductions should be accounted for in the 2007 baseline emissions inventory. The EPA agrees that additional emissions decreases beyond MACT levels are not warranted for this source category at this time because they would exceed the $2,000 per ton framework for highly cost-effective controls. Therefore, EPA has incorporated the NO_X emissions decreases due to the MACT requirements into the 2007 baseline levels and not assume any further reductions.

D. Highway Mobile Sources

Background: For the NPR and SNPR, highway vehicle emissions were projected to 2007 from a base year of 1990. The NPR used the 1990 OTAG inventory as its baseline. The 1990 OTAG inventory was based on actual 1990 vehicle-miles-traveled (VMT) levels for each State, based on State

submittals to OTAG where available, or on historical VMT data obtained from the Highway Performance Monitoring System (HPMS) if State data were not available. The EPA proposed to switch to historical 1995 VMT levels from the HPMS; States were encouraged to submit their own 1995 VMT estimates where those estimates differed from HPMS.

In today's notice, EPA has implemented the changes it proposed in the NPR in calculating baseline and projected future NO_X emissions from highway vehicles. A 1995 baseline is used for today's notice in place of the 1990 baseline used in the NPR. The HPMS data were used to estimate States' 1995 VMT by vehicle category, except in those cases where EPA accepted revisions per the comments. These VMT estimates reflect the growth in overall VMT from 1990 to 1995, as well as the increase in light truck and sport-utility vehicle use relative to light-duty vehicle use. The 1995 NO_X emissions inventories also reflect the type and extent of inspection and maintenance programs in effect as of that year and the extent of the Federal reformulated gasoline program. The EPA is continuing to use the growth factors developed by OTAG for the purpose of projecting VMT growth between 1995 and 2007. These growth factors were revised with appropriately explained and documented growth estimates submitted during the comment period for the NPR.

The 2007 highway vehicle budget components presented in today's notice are based on EPA's MOBILE5a emission inventory model with corrected default inputs, which represents the most current EPA modeling guidance to States when developing their SIPs.[60]

1. Base Inventory

Comment: The EPA received a number of comments on baseline highway vehicle emission inventories. Most of these commenters proposed changes to baseline VMT estimates or to control factors related to highway vehicle emissions.

Response: In the NPR and SNPR, EPA asked commenters to provide sufficiently detailed information to permit revision to county-level emission inventories, in order to allow airshed modeling to be performed using the revised inventories. A number of proposed VMT revisions submitted by commenters were not sufficiently detailed to permit county-level inventory revisions and therefore these revisions were rejected. Other commenters provided sufficiently detailed data, which were incorporated into the base year VMT inventory, with two exceptions. Two States submitted 1995 VMT estimates that were inconsistent with EPA and U.S. Department of Transportation information on the relative contribution of light-duty trucks to total VMT. The EPA chose to use the HPMS default data for these two States.

Comment: One commenter asked the EPA to use VMT from the 1996 Periodic Emissions Inventory (PEI) or 1996 National Emissions Trends (NET), rather than 1995 Highway Performance Modeling System (HPMS) data when calculating baseline inventories. Several other commenters supported EPA's use of 1995 HPMS data to calculate baseline VMT inventories.

Response: Guidance on how to construct the 1996 PEI was not released until July 1998 and State PEI submittals are not expected until 1999. The EPA has determined for this reason that the 1996 PEI is not suitable for calculating the baseline VMT inventory. The EPA considered using 1996 NET VMT data in its base inventories, but those data were based on estimated 1995 HPMS inputs. The EPA has chosen to use the actual 1995 HPMS data rather than estimates in order to reduce the uncertainties associated with estimating baseline and 2007 emission inventories.

Comment: One commenter suggested using a multi-year VMT activity average to establish the highway emission baselines to smooth out abnormal patterns, instead of relying solely on 1995 activity.

Response: The EPA proposed using 1995 VMT in order to shorten the time period over which VMT growth would have to be projected. The EPA is not aware of any evidence that suggests that 1995 was an abnormal year in terms of VMT activity. Furthermore, States did not submit multi-year VMT averages in response to the EPA's invitation to submit their own VMT data. If the EPA were to construct multi-year averages, it is not clear what time frame would be appropriate. The EPA believes that the uncertainty related to having to project VMT growth estimates over a longer time period is at least as great as the uncertainty related to the representativeness of 1995 VMT. For these reasons, EPA has chosen to use 1995 VMT for base year and projection year inventories.

Comment: A number of commenters raised various issues about the use of the MOBILE5 emission factor model for this analysis. Most of these comments focused on specific assumptions or estimates incorporated in MOBILE5 which may need to be modified or updated to account for new information.

Response: The EPA is currently developing an updated emission factor model called MOBILE6. When final, this model will supersede the MOBILE5 model used by the EPA to develop baseline and 2007 emission inventories and States' highway vehicle budget components. The concerns raised by commenters are being evaluated as part of the MOBILE6 development process. At the present time, however, MOBILE5 remains EPA's official emission factor model. The EPA currently is not able to determine whether the highway vehicle emission modeling concerns raised by commenters are valid or whether the changes they suggest would raise or lower emission estimates; EPA is also not able to quantify the effects of commenters' concerns using its current emission models. Some of the changes EPA expects to make in its next official emission factor model, such as the effects of aggressive driving and air conditioner use, are likely to raise emission estimates; others, such as less-rapid deterioration of emissions performance than previously forecast, are likely to lower emission estimates. Because the overall effect of these and other changes cannot yet be determined, the EPA has chosen to continue using its current official emission model in today's action.

As discussed in Section III.F.5, the budgets presented in today's action serve as a tool for projecting in advance whether States have adopted measures that would produce the required amount of emissions reductions, as indicated by the initial demonstration submitted in September 1999. The budgets are also a means for determining from 2003 to 2007 whether States are fully implementing those measures. Thus, the budgets are an accounting mechanism for ensuring that the upwind States have adopted and implemented control measures that prohibit the significant amounts of NO_X emissions targeted by section 110(a)(2)(D)(i)(I). Although EPA's

[60] Both MOBILE5a and MOBILE5b are official EPA models. States can use either model in their SIPs, provided they use the corrected default inputs with MOBILE5a. For the control programs evaluated in today's action, MOBILE5a with corrected default inputs gives the same emission estimates as MOBILE5b. Because both models are considered valid by EPA and give the same emission estimates, the EPA has determined that the choice of which model to use in calculating highway vehicle emission budget components is a matter of convenience. The EPA has chosen to retain the use of MOBILE5a for today's action in order to maintain consistency with the OTAG process, in which MOBILE5a with corrected default inputs was used to construct its highway vehicle emission inventories and to calculate the effectiveness of highway vehicle emission control options.

projections of emissions from highway vehicles will change as the Agency improves its emission models, these changes will not in and of themselves require changes in the actions States undertake to reduce ozone transport under today's action.

2. Growth

Comments: The EPA received numerous comments concerning its projection of States' 2007 highway vehicle budget components. In addition to the changes in baseline VMT discussed previously in Section III.D.1 of this notice, the EPA received from a number of States proposed revisions to VMT growth estimates and the effectiveness of emission control programs.

Response: In today's action, EPA has implemented the following changes it proposed in the NPR in calculating States' 2007 highway vehicle budget components. The EPA has used State projections of VMT growth from 1995 through 2007 for States that submitted appropriately explained projections of VMT growth from 1995 to 2007. For other States, EPA projected 2007 VMT levels from the 1995 baseline VMT levels using the OTAG projected growth rates.

As proposed in the NPR, neither the highway vehicle budget components nor the overall NO_X budgets promulgated in today's action alter the existing conformity process or existing SIPs' motor vehicle emissions budgets under the conformity rule. The EPA has determined that Federal agencies or Metropolitan Planning Organizations (MPOs) operating in States subject to today's action do not have to demonstrate conformity to the SIP Call budgets or the highway vehicle budget component levels used to calculate the budgets. However, areas will be required to conform to the motor vehicle emissions budgets contained in the attainment SIPs for the new eight-hour standard. For their attainment SIPs for transitional ozone nonattainment areas, States might seek to rely on the modeling performed for the SIPs submitted in response to today's action. To the extent that this occurs, the VMT projections and motor vehicle emissions inventories associated with today's action could have a role in the conformity process, beginning when transitional areas are designated and classified in 2000.

3. Budget Calculation

Background: The EPA proposed highway budget components based on projected highway vehicle emissions in 2007 from a base year of 1990, assuming implementation of CAA measures, such as inspection and maintenance programs and reformulated fuels, measures already implemented federally, and those additional measures expected to be implemented federally by 2007. The additional Federal measures included the National Low Emission Vehicle Standards and the 2004 Heavy-Duty Engine Standards. The emission effects of revisions to the Federal Emissions Test Procedure, which had also been promulgated in final form, were not reflected in the projected 2007 emissions presented in the proposal because neither the emissions that this measure is designed to control nor the reductions in those emissions expected from the test procedure revisions had been incorporated in the projected 2007 emission estimates or in peer- and stakeholder-reviewed EPA emission models. The proposal also did not incorporate any benefits from Tier 2 light-duty vehicle standards since the EPA had not yet proposed or promulgated regulations concerning the level and implementation schedule for Tier 2 standards. Seasonal emissions were calculated by estimating emissions for a specific weekday, Saturday and Sunday during the ozone season and multiplying by the number of days of each type in the ozone season. These estimates were based on temperatures and temperature ranges recorded for actual ozone episodes. In the NPR, EPA proposed to change this approach to substitute monthly average temperatures and temperature ranges for ozone episode-specific temperatures when constructing the 2007 budgets. The highway vehicle budget components presented in today's notice reflects this change.

Comment: A number of commenters suggested that the EPA change its assumptions regarding emission control programs from those used in the NPR. One commenter claimed that the NPR did not include a number of cost-effective highway and nonroad mobile source NO_X reduction programs in its budget calculations. Other commenters suggested that the EPA focus more on expanding the RFG and I/M programs, adopting gasoline sulfur controls, implementing a reformulated diesel fuel program, or implementing the Tier 2 program. Contrary to these positions, a number of commenters agreed with the EPA's decision not to assume any expansion of the RFG or I/M programs, while still other commenters argued that the EPA should not include the emission effects of gasoline sulfur controls or reformulated diesel fuel in its calculation of State NO_X budgets. One commenter suggested that the EPA change its NLEV phase-in assumptions to match the final NLEV agreement. One commenter asked EPA to include the effect of the recent Revised Federal Test Procedure rule, which is aimed at reducing excess emissions from aggressive driving or air-conditioner use, in its budget calculation.

Response: Both the NPR and today's action include those mobile source reductions which EPA has determined or proposed to determine are technologically feasible, highly cost-effective, and appropriate to implement on a national basis, and which have been promulgated in final form or are expected to be promulgated in final form before States are required to submit revised SIPs. The highway vehicle budget components include the emission reductions resulting from implementation of the NLEV program, including the phase-in schedule agreed to by the States, automobile manufacturers, and EPA. The highway budget components do not include the effect of Tier 2 light-duty vehicle and truck standards and any associated fuel standards since these standards have not yet been proposed.

The extent of the RFG and I/M programs was not assumed to change beyond that assumed for the NPR, except for those States who were able to demonstrate that the NPR's modeling assumptions did not conform to the State's SIP and did not reflect CAA requirements. As discussed elsewhere in today's notice and in the NPR, the NO_X reductions alone from these measures do not appear to be highly cost effective in all of the areas that would be subject to reduced budgets. Because these measures offer additional benefits beyond NO_X reductions, specific local areas may determine that these measures are appropriate and cost effective given their full range of benefits.

The baseline and budget calculations include neither the increased emissions from aggressive driving or air conditioner use, nor the reductions in those emissions resulting from the Revised Federal Test Procedure rule. These emission effects are not reflected in EPA's MOBILE5a model; they are being evaluated for inclusion in MOBILE6. While the EPA has developed a modified version of its MOBILE5 model to estimate these effects for its Tier 2 study, this modified model has not been used in any regulatory actions and is still subject to revision as part of EPA's model development process. As discussed above and in Section III.F.5. below, any

changes by EPA in its emission models will not in and of themselves alter the emission reductions States must achieve to comply with the requirements of today's action.

Comment: One commenter suggested that the EPA not split VMT using weekend and weekday travel fractions when calculating monthly and seasonal total VMT. Another State commenter proposed an alternative method for calculating monthly and seasonal VMT from average daily VMT which did not rely on the EPA weekend/weekday travel fractions, but instead used monthly travel fractions specific to that State. Other commenters supported the weekend/weekday inventory modeling approach proposed by the EPA.

Response: The EPA and other organizations have amassed considerable evidence that weekend and weekday travel patterns differ significantly. The OTAG Final Report requested day-specific inventories for developing day-of-the-week activity levels used in emission inventory development and episode-specific modeling. Given this requirement, EPA has determined that the approach outlined in the NPR is appropriate and reasonable. The alternative method using State-specific monthly travel fractions as proposed by one State is a reasonable alternative. However, because EPA does not have the necessary information to apply this method to all other States, EPA did not incorporate this method in its analysis.

a. I/M Program Coverage.

Comment: One commenter urged the EPA to expand I/M programs to cover all urbanized areas with populations above 500,000 as recommended by OTAG. Other commenters also requested that EPA expand the I/M program or require specific States to adopt specific types of I/M programs. By contrast, other commenters supported the I/M approach taken by the EPA in the NPR.

Response: The OTAG recommended that States consider expanding I/M programs to cover all urbanized areas with populations above 500,000. The EPA has considered this recommendation but does not believe it to be appropriate to assume broader I/M implementation in calculating State budgets for the reasons outlined in the NPR (62 FR 60355). The State budgets promulgated in today's action reflect full implementation of I/M as required by the CAA and State SIPs.

b. Emissions Cap.

Comment: One commenter suggested that the EPA consider capping mobile source emissions, arguing that the proposed rule would place an undue burden on stationary sources.

Response: The State NO_X budgets promulgated in today's action include the projected emission benefits of those NO_X controls that the EPA has determined are technologically feasible and highly cost effective, as well as additional controls whose implementation is not dependent on this rule. While the EPA's analysis indicates that certain categories of stationary sources offer the potential for large, highly cost-effective NO_X emission reductions, the State NO_X budgets also reflect the emission effects of a number of mobile source controls (See Table IV–2). The EPA believes that it has applied its criteria for determining which controls to assume in State NO_X budgets equitably to both mobile and stationary sources. In contrast to EGUs and large non-EGUs, EPA has not concluded that a mass cap (which would effectively require offsets for VMT growth) is highly cost effective. For these reasons, EPA does not believe that today's action places an undue burden on any emission sector and does not believe that a separate cap on mobile source emissions is necessary.

c. Tier 2 Standards.

Comment: One commenter requested that EPA include the effects of Tier 2 light-duty vehicle standards when calculating State budgets if the NLEV program fails. Another commenter suggested that States not be permitted to adjust their budgets in case the NLEV program fails.

Response: This issue is not yet ''ripe'' because NLEV is currently being implemented and there are no signs that the program will fail. The EPA will consider whether to adjust State budgets if automakers representing a significant portion of new vehicle sales withdraw from the NLEV program, as discussed in Section III.F.5.

d. Low Sulfur Fuel.

Comment: One commenter stated that the EPA disregarded OTAG's call for reducing sulfur levels in fuel, which would have the effect of reducing NO_X emissions.

Response: The EPA's proposed rule and other actions match the OTAG recommendations on fuels, contrary to the commenter's suggestion. The OTAG gasoline recommendation stated, ''The USEPA should adopt and implement by rule an appropriate sulfur standard to further reduce emissions and assist the vehicle technology/fuel system [to] achieve maximum long term performance.'' It did not request that EPA implement a specific sulfur reduction proposal. The EPA is evaluating the costs and benefits of reducing gasoline sulfur levels as part of its proposed rulemaking to implement Tier 2 light-duty vehicle and truck standards. The EPA is also evaluating the relationship between diesel fuel standards and the emission standards as part of (i) its 1999 technology review for its 2004 highway heavy-duty diesel engine standards and (ii) its 2001 technology review for the Tier 3 and Tier 2 nonroad diesel engine standards. Until these evaluations are complete, EPA believes it is premature to assume any changes in fuel properties when calculating States' highway vehicle budget components.

e. Conformity.

Comment: One commenter recommended that NO_X transportation conformity waivers should lapse in the wake of today's action.

Response: Conformity waivers were granted on an area-by-area basis, given the facts of the situation in each local area. Any withdrawal should be based on similar local analysis, or upon submittal of a valid attainment plan. Today's action is not based on this kind of local analysis. Thus, there is no basis for any withdrawal of existing NO_X transportation conformity waivers. Furthermore, any such withdrawal would not alter the Statewide NO_X budgets set forth in today's action. For these reasons, the EPA has concluded that today's action does not alter existing conformity requirements, including any NO_X conformity waivers.

Comment: One commenter expressed concern that if current conformity budgets do not incorporate the same control assumptions as the States' budgets submitted in response to today's rulemaking, the growth in areas currently subject to conformity budgets could threaten the ability of States to meet the SIP call budgets. The commenter continued that failure to tie conformity budgets to transport budgets would allow these areas to grow to pre-SIP call control budget levels that could cause an exceedance of the Statewide budget. The commenter also stated that to address local ozone problems, transportation conformity plans should reflect the mobile source controls assumed in the SIP call.

Response: Conformity budgets cannot be tied directly to the SIP Call budgets because the latter are statewide and the former are nonattainment-area-specific. The Statewide NO_X budgets will be enforced as described in today's action, regardless of the conformity budgets in specific areas within the affected States. These budgets should reflect the actual level of motor vehicle emissions which States expect to occur.

As noted elsewhere in this section, conformity budgets will reflect the mobile source controls assumed in the SIP Call budgets to the extent that the attainment SIP ultimately relies upon those controls. Today's action does not change the rules governing generation and use of emission reduction credits to offset further growth in the transportation sector as part of a local area's conformity demonstration.

E. Stationary Area and Nonroad Mobile Sources

Background: The EPA developed the NO_X SIP call emissions inventory for area and nonroad mobile sources based on data sets originating with the OTAG 1990 base year inventory. These base year inventories were prepared with 1990 State ozone SIP emission inventories supplemented with either State inventory data, if available, or EPA's National Emission Trends (NET) data if State data were not available. The OTAG 1990 nonroad emission inventories were based primarily on estimates of actual 1990 nonroad activity levels found in the October 1995 edition of EPA's annual report, ''National Air Pollutant Emission Trends.'' In the NPR, EPA proposed switching to EPA's 1997 ''Trends'' estimate of 1995 nonroad activity levels.

For the SNPR, area and nonroad mobile source inventory data for 1990 were then grown to 1995 using Bureau of Economic Analysis (BEA) historical growth estimates of industrial earnings at the State 2-digit Standard Industrial Classification (SIC) level. Because BEA data are historical documentation of industry earnings, EPA considered these to be among the best available indicators of growth between 1990 and 1995 (63 FR 25915). Once the common base year of 1995 was established for these source categories, BEA growth assumptions utilized by OTAG were used to estimate the 2007 base case inventory.

1. Base Inventory

Comment: The EPA received several comments on baseline area and nonroad mobile source emission inventories. Several commenters submitted estimates of their 1990 nonroad activity levels that differed from NPR estimates. One commenter provided statewide 2007 base year emissions estimates for numerous area source categories, while others provided similar information for 1990 or 1995 emission estimates. Many commenters expressed concern with existing area source inventory estimates and provided revised county-level area source inventories. One commenter suggested using a multi-year activity average to establish the nonroad emission baseline, arguing that a multi-year average would provide a more representative baseline than would a single year's data alone.

Response: In the NPR and SNPR, EPA asked commenters to provide sufficiently detailed information to permit revision to county-level emission inventories, in order to allow airshed modeling to be performed using the revised inventories. Some proposed area and nonroad inventory revisions submitted by commenters were State-wide revisions and did not contain sufficient detail to permit the EPA to revise county-level nonroad emission inventories. Because the EPA could not use these submittals to revise the county-level inventories used as inputs to its air quality modeling analyses, these submittals were not accepted. Other commenters did provide sufficiently detailed data, and EPA revised the appropriate emission inventories to reflect the commenters' estimates. These revised inventories were then grown to 1995 using BEA-derived growth factors, as described above.

Although EPA proposed in the NPR to switch to a 1995 inventory in calculating baseline NO_X emissions from nonroad mobile sources, EPA has chosen not to do so in today's action. Using the 1995 inventory presented in the ''Trends'' report as the baseline for today's action would have required the use of geographic allocation methods that have not undergone peer review and have not been made available for public comment by affected interests. The EPA has concluded that the use of these unreviewed methods in today's action would have deprived stakeholders of adequate opportunity to review, understand, and comment on their baseline inventories and the methods used to construct them. Hence, EPA has chosen to retain the 1990 baseline inventories for nonroad mobile sources presented in the NPR for today's action, with the changes made in response to comments.

As discussed above, EPA has chosen to use 1990 nonroad activity level estimates as the basis for its nonroad inventory projections. The EPA is not aware of any evidence that suggests that 1990 was an abnormal year in terms of nonroad activity. Furthermore, States did not submit multi-year nonroad activity averages in response to EPA's invitation to submit their own nonroad activity data. If EPA were to construct multi-year averages, it is not clear what time frame would be appropriate. To reduce the impact of unusual years, EPA would have to take a long-term average. However, doing so would require EPA to use an even earlier year as its base year for nonroad activity and inventory projections. The EPA believes that the uncertainty related to having to project nonroad activity growth estimates over a longer time period is at least as great as the uncertainty related to the representativeness of 1990 nonroad activity.

2. Growth

Comment: Several commenters suggest that the growth factors used to determine 2007 stationary area and nonroad mobile source base year inventories are inaccurate or inconsistent across regions and categories of the inventory. They explained that if growth factors are to be used to estimate future base year emissions, consistent national or region-wide values should be utilized for all categories across all States within the domain. This, they continue, would promote equitable potential progress to all areas and not penalize those that have shown past poor growth rates. Some commenters go on to state that growth rates based on past growth automatically disadvantage States which have suffered from unusually low growth rates. In addition to growth rates, some commenters provided 2007 base year emission estimates either with or without the growth and control information needed to validate their calculation.

Response: As noted above, EPA relied on BEA State-specific historical growth estimates of industrial earnings at the 2-digit SIC level as among the best available indicators of growth for stationary and nonroad area sources. BEA projection factors assume the continuance of past economic relationships. These factors are published every five years and adjusted to account for recent production and growth trends. For this reason, BEA data provide a useful set of regional growth data that EPA recommends for use in preparing emission inventory projections. It is true that BEA projection factors differ among different areas and different source categories because of historical differences in industrial growth among those different areas and source categories. However, in general, these projection factors offer the most reliable indicators of future growth as are available.

In cases where commenters questioned the use of EPA's growth rates but provided no alternative of their own, EPA had little choice but to continue to use the BEA-derived growth rates. Some commenters provided alternative or supporting information for modification of source category or State

growth estimates. In those cases where a State or industry may have had more accurate information than the BEA forecast (e.g., planned expansion or population rates), data were verified and validated by the affected States and by EPA, and revisions were made to the factors used for that category.

3. Budget Calculation

Background: The EPA proposed nonroad mobile source budget components based on projected nonroad mobile source emissions in 2007 from a base year of 1990. These projections were developed by estimating the emissions expected in 2007 from all nonroad engines, assuming implementation of those measures incorporated in existing SIPs, measures already implemented federally, and those additional measures expected to be implemented federally. The additional Federal measures include: the Federal Small Engine Standards, Phase II; Federal Marine Engine Standards (for diesel engines of greater than 50 horsepower); Federal Locomotive Standards; and the Nonroad Diesel Engine Standards. In the NPR, EPA used the estimates developed by the OTAG for nonroad mobile source baseline emissions and growth rates.

Comments: The EPA received comments to use a State-specific set of growth rates for nonroad mobile source emissions.

Response: The EPA has used State estimates of 1990 nonroad activity levels and growth rates for 1990 through 2007 received during the comment period to revise its estimates of nonroad NO_X emissions in 2007, where those State estimates were appropriately explained and documented. For other States, the EPA has retained the baseline activity levels and growth rates used in the NPR, which in turn were based on the growth rates developed for OTAG.

F. Other Budget Issues

1. Uniform vs. Regional Controls

Background: In the NPR, EPA bases the State budgets upon assumed application of reasonable, highly cost-effective NO_X control measures. These measures were uniform across the 23 affected jurisdictions. They consisted of 0.15 lbs/MmBtu for the EGU sector; and 70 percent control for large, and RACT for medium-sized, non-EGU point sources.

Comments: A number of commenters opposed calculating budgets based on uniform emissions reductions and cited the fact that OTAG recommended a range of control levels. These commenters offered no specific alternatives, such as varying the assumed control levels by State or by groups of States, or alternative methods for determining different control levels. Numerous comments were received supporting the proposed uniform level of emissions reductions.

Response: The EPA has determined that each of the 23 jurisdictions has sources that emit NO_X in amounts that significantly contribute to downwind nonattainment problems. Moreover, EPA has determined that specified levels of control on certain sources in all of the jurisdictions would be highly cost-effective. This analysis applies with equal force to each of the 23 jurisdictions. It may be that emissions from some States have greater ambient impact on downwind nonattainment areas than emissions from more distant States. Even so, each of the States' NO_X emissions have a sufficient ambient impact downwind to conclude that those amounts are significant contributions and that NO_X emissions from all the upwind jurisdictions collectively contribute significantly to nonattainment downwind. Differentiating the contributions of individual upwind States on multiple downwind nonattainment areas is a highly complex task. The contributions of individual States are likely to vary from downwind area to downwind area, from episode to episode, and from NAAQS to NAAQS. Accordingly, it would be extremely complex to develop a budget for each State that would reflect the different impacts of its sources' emissions on different downwind States.

Among many factors that EPA considered in weighing whether to finalize a uniform control level or regional control levels in calculating States' emission budgets was the concern that different controls in one part of the SIP call area in combination with an interstate emissions trading program may lead to increases in pollution within areas having more restrictive controls. That is, if unrestricted interstate emissions trading were allowed on an one-for-one basis, emissions reductions might be expected to shift away from States assigned more restrictive controls to States which received less restrictive control requirements due to the lower control costs likely to exist in States with less restrictive controls. This may result in emissions above the budget level in areas with more restrictive controls.

There are two alternatives for addressing the problem of shifting emissions. The first is to allow trading only within uniform control regions, but not between regions with NO_X budgets reflecting different levels of control. The advantage to this approach is that it provides a straightforward way of preventing trades of excess emissions into regions with more stringent standards. However, a trading program that covers a smaller market area will provide less flexibility and reduce the possible savings for the affected sources as compared with larger trading programs. The second alternative is to establish a trading ratio for trades between regions, to reflect the differential impact of the emissions on nonattainment. The trading ratio should reflect the relative contribution of emissions to downwind non-attainment problems. The advantage to this approach is that it provides the flexibility for trades between regions when the benefits of such trades are large, while discouraging a shift of excess emissions into regions with more stringent standards. However, none of the comments on the proposal included a justification or description for trading ratios, which would reflect the differential environmental implications and discourage inappropriate shifting of excess emissions.

The ozone problem in the Eastern United States is the result of a large number of different types of sources which affect widely distributed nonattainment areas at different times under changing weather patterns such that a broadly-established control program is necessary. The EPA believes a reasonable strategy is to apply the most cost-effective control strategies uniformly in contributing States in order to eliminate the combined significant contribution from these multiple sources in multiple States.

The EPA analyzed costs and air quality benefits for two regional control level options that were based on a varying level of controls in different parts of the 23 jurisdictions. The analysis did not show that these two regional control alternatives would provide either a significant improvement in air quality or a substantial reduction in cost. An analysis of the costs and benefits of different control options can be found in the docket. On the basis of the analysis, EPA believes an alternative approach with differentiated NO_X budgets and regionally differentiated trading would not yield significant additional air quality benefits or cost savings vis a vis a regionwide trading program based on uniform NO_X budgets.

2. Seasonal vs. Annual Controls

Comments: One commenter suggested that controls should be required for the

entire year rather than just during the 5-month ozone season as proposed.

Response: The EPA recognizes that control of nitrogen oxide emissions would likely produce non-ozone benefits, as well as ozone benefits. For example, NO_X control would likely reduce surface water acidification or eutrophication of surface waters. Annual control of NO_X may have a greater impact on winter and spring NO_X emissions, and therefore on acidification and eutrophication, than ozone season (summer) NO_X control to the extent that acidification and eutrophication result from the release of nitrogen compounds from snowpack during snowmelt and rain in the spring. Control of NO_X emissions also reduces fine particulates and regional haze, so that annual control of NO_X emissions would result in greater non-ozone benefits. However, the commenter's suggestion that EPA analyze the costs of, and assume in calculating the budgets, annual NO_X control to address non-ozone problems is outside the scope of this rulemaking proceeding. Here, EPA has proposed a NO_X SIP call to address the failure of certain SIPs to prohibit sources from emitting NO_X in amounts that contribute significantly to nonattainment (or interfere with maintenance of attainment) of the ozone NAAQS during the ozone season.

In analyzing the benefits of ozone season NO_X control under the proposed NO_X SIP call for purposes of the RIA (though not as a basis for the decisions in today's rule), EPA considered both the ozone and non-ozone benefits. Non-ozone benefits include the impact of ozone season NO_X control on acidification and eutrophication. In particular, emission modeling performed by EPA indicates that the SIP Call would reduce wintertime NO_X emissions. This results in part because, once installed to comply with the NO_X SIP call, some NO_X control systems (e.g., low NO_X burners which alter the combustion process and cannot simply be turned off) would reduce emissions throughout the year, even though the NO_X limits would be seasonal. Also see Section IX.

3. Full vs. Partial States

Background: In the NPR, the Agency indicated it was proposing to include entire States rather than exempting portions of States in the development of emissions budgets. The Agency's decision to include full States was based upon three major points: (1) The division of individual States by OTAG was based, in part, on computational limitations in OTAG's modeling analyses; (2) the additional upwind emissions from full, as opposed to partial, States would provide additional benefit to downwind nonattainment areas; and, (3) Statewide emissions budgets create fewer administrative difficulties than a partial-State budget.

Comments: During the two comment periods, 43 comments were received which specifically addressed some or all of the major points outlined above. The underlying theme throughout the comments on this issue was that the States and EPA had undertaken a comprehensive, scientifically credible modeling/analysis study during the OTAG, and that the Agency should follow OTAG's recommendations on this issue (i.e., allow for partial-State emission budgets). Another common theme was that the administrative difficulties outlined by the Agency in the NPR were exaggerated, and that the affected States should be allowed to generate partial-State, as opposed to statewide, emissions budgets, if their State considered it feasible to do so. Comments were received that portions of Alabama, Georgia, Michigan, Missouri, North Carolina, and Wisconsin should be excluded from the SIP Call.

Response: The underlying concepts for responding to these comments are (a) that the atmosphere is constantly in motion and has no limitations at geo-political boundaries, and (b) that the larger the geographic area that is controlled, the greater the downwind benefits. For the States requesting partial-State emissions budgets, there are NO_X emissions throughout these entire States. The EPA did State-specific modeling for each of the affected States, and these additional modeling analyses support the concept of statewide emissions budgets for each of the affected States. Furthermore, it is a reasonable assumption, given the nature of ozone chemistry, that if emissions from part of a State contribute significantly to downwind nonattainment or maintenance problems, emissions from the entire State contribute significantly to downwind nonattainment or maintenance problems. In each of the affected States, there is no peculiar meteorological phenomenon that would indicate that emissions from some portion of that State would not impact downwind nonattainment or maintenance problems. Thus, based on additional EPA modeling analyses and their technical interpretation, EPA is not promulgating partial-State emissions budgets. Since each State has the flexibility to determine which sources to control in order to meet the budget, a State can structure its control strategy to require fewer reductions in certain portions of the State and greater controls in other areas, as long as the significant amounts of emissions are eliminated.

4. NO_X Waivers

Comments: The EPA received several comments supporting the approach outlined in the NPR in which EPA would treat areas that had previously received NO_X waivers under section 182(f) of the CAA in the same manner as other areas in the SIP call. The comments stated that (1) special treatment (i.e., higher budget) for the waiver areas would increase the burden on downwind States; (2) numerous modeling efforts, including OTAG's, have shown that such disbenefits are generally minor and occur on days with low ozone concentrations; (3) disbenefits are small when upwind NO_X reductions are modeled; (4) disbenefits are better addressed at the local level; and (5) States already have the flexibility to deal with NO_X disbenefits, if any, through the budget and trading by meeting the budget through NO_X emission decreases in other areas of the State or acquiring allowances through trading. In addition, some commenters requested EPA to revoke waivers previously granted. Commenters also noted that the localized disbenefits are no less of a problem in the Northeast than in the Midwest.

Numerous comments were also submitted which oppose the approach outlined in the NPR. The comments generally stated that in States with NO_X waiver areas, the NO_X budget should be increased where NO_X decreases lead to ozone increases; otherwise States might seek reductions disproportionately outside the sensitive areas, resulting in cost-effectiveness levels greater than the $2000 per ton framework described in the SIP call proposals. Comments referred to disbenefits in Cincinnati, Louisville and the Chicago/Gary areas. Many commenters suggested that EPA wait for further modeling analyses to be completed and that the zero-out runs are inappropriate for evaluating the NO_X disbenefit issue. Some stated that the NO_X budget might interfere with local attainment and harm local public health. Other comments recommended that EPA consider the impact of additional VOC costs that might be needed to offset local ozone increases.

Response: In today's final rulemaking, EPA is setting NO_X emissions budgets for each of the jurisdictions affected by this action. These budgets are set in the same manner for areas without NO_X waivers as areas with NO_X waivers, except in the case of NO_X waivers granted for I/M programs. Although

adverse comments were submitted, none of them provided any modeling analysis or support documentation showing how a State or States with NO_X waiver areas should be assigned a larger budget or proposing a specific alternative approach for assigning those budgets. In contrast, modeling described by EPA in the NPR and SNPR as well as additional modeling conducted by the Agency and some commenters continues to show that the benefits of NO_X emissions decreases greatly outweigh any disbenefits. These findings are discussed in Section IV, and summarized below.

The EPA considered the strengths and limitations in the commenters' modeling analyses in evaluating whether the technical evidence presented in the comments supports the arguments made by the commenters. The EPA's review of the commenters' modeling indicates that in general (a) downwind ozone benefits increase as greater NO_X controls are applied to sources in upwind States, (b) the net benefits of NO_X control at the level of the SIP Call outweigh any local disbenefits, and (c) upwind NO_X reductions tend to mitigate local disbenefits in downwind areas.

One commenter, the Lake Michigan Air Director's Consortium (LADCO), submitted air quality modeling directed toward investigating the disbenefits in nonattainment areas around Lake Michigan due to the NO_X controls in the SIP Call proposal. The commenter's general finding was that the greatest ozone decreases with these NO_X controls occur on high ozone days, while the greatest disbenefits occur on low ozone days. The EPA concurs with this finding, based on a review of the technical information provided by the commenter. Specifically, there were no predicted increases in ozone (i.e., disbenefits) in peak 1-hour ozone on any of the 4 days modeled by LADCO that had daily maximum 1-hour concentrations >=125 ppb in the Base Case. Also, on the 3 low ozone days which had predicted disbenefits, the increases were not large enough to result in a peak value >=125 ppb. Concerning 8-hour concentrations, only 1 of the 9 days with a predicted 8-hour daily maximum concentration >=85 ppb had an increase in peak ozone due to the SIP Call NO_X controls. Also, there was a small disbenefit on the one day modeled which had an 8-hour daily maximum concentration <85 ppb, but the magnitude of the disbenefit on this day was relatively small and did not cause the 8-hour peak value to exceed 85 ppb. Thus, based on this evaluation, EPA generally found that the submitted modeling did not refute the overall conclusions EPA has drawn concerning the impacts of NO_X emissions in the relevant geographic areas.

As described in the NPR, the OTAG process included lengthy discussions on the potential increase in local ozone concentrations in some urban areas that might be associated with a decrease in local NO_X emissions. The OTAG modeling results indicate that urban NO_X emissions decreases produce increases in ozone concentrations locally, but the magnitude, time, and location of these increases generally do not cause or contribute to high ozone concentrations. That is, NO_X reductions can produce localized, transient increases in ozone (mostly due to low-level, urban NO_X reductions) in some areas on some days, but most increases occur on days and in areas where ozone is low. In the SNPR, EPA documented the estimated ozone benefits of the proposed Statewide NO_X budgets based on an air quality modeling analysis. The major findings of that analysis include: Any disbenefits due to the NO_X reductions associated with the budgets are expected to be very limited compared to the extent of the air quality benefits expected from these budgets.

The results of EPA's assessment of the comments and available modeling corroborate and extend the findings presented in the SNPR. Thus, with respect to regional ozone transport and today's final action, EPA believes it is not appropriate to give special treatment to areas with NO_X waivers.

Several nonattainment areas in the 23 jurisdictions were granted waivers from certain NO_X requirements in past rulemaking actions. In the **Federal Register** notices granting the waivers, EPA stated that the continued approval of these waivers is contingent on the results of the final ozone attainment demonstrations and plans (See 61 FR 2428 January 26, 1996, LADCO). The attainment plans will supersede the initial modeling information which was the basis for waivers EPA granted (e.g., the LADCO waiver). The attainment plans were due in April 1998 and were to incorporate the results of the OTAG process. The EPA's rulemaking action to reconsider the initial NO_X waiver may occur simultaneously with rulemaking action on the attainment plans. Therefore, as these new modeling analyses are submitted to EPA, they will be reviewed to determine if the NO_X waiver should be continued, altered, or removed.

As discussed above, EPA has accounted for the continued presence of NO_X waivers for I/M programs in modeling States' NO_X budgets. Historically, EPA gives States considerable latitude in designing their I/M programs. This latitude is granted in recognition of the unique economic and air quality circumstances faced by each State. States have used this latitude to develop a range of I/M program designs. Some States have adopted EPA-recommended enhanced I/M programs; other States have adopted different I/M program designs.

The EPA acknowledges that some of the States granted NO_X waivers may be able to modify their programs to obtain NO_X reductions at minimal cost. However, some of the States which have been granted an I/M NO_X waiver have developed unique I/M program designs in terms of the model years covered, the emission testing equipment used, and possibly the number, location, and design of the testing and repair stations. The cost for these States to modify their I/M programs to obtain NO_X reductions are likely to exceed the level that EPA has determined to be highly cost-effective for the purpose of reducing ozone transport. As a result, the EPA has chosen to not include additional emissions reductions due to I/M NO_X programs when calculating NO_X budgets.

5. Recalculation of Budgets

In the NPR, the EPA made proposals concerning what would happen if additional information becomes available after EPA's final rulemaking action. Examples of such information might include: (a) Source-specific information useful in determining RACT, (b) revised growth or other assumptions, (c) revised models and inventory estimates, (d) unexpectedly low implementation rates for NLEV, and (e) other new federal measures, i.e. Tier 2 controls. In the Recalculation of Budgets Section of the NPR, EPA proposed that if additional data become available after EPA's final rulemaking action, such data could be considered prior to State submittal of revised SIPs. The EPA asked for comments on this approach.

Most of the comments received were in favor of allowing States to adjust their emission budgets based on the most recent available data on emissions and RACT levels. There were several comments that any new calculation methodologies should be applied across all States and be approved at EPA Headquarters, and that all States should use the same methodology.

A few commenters did not agree, however. One said that EPA should not recalculate the budgets upward. Another said there should be no downward ratcheting of budgets. One

commenter said that it would be premature to assume that as new information becomes available the budget should be adjusted to reflect this. According to this commenter, it would be more appropriate to perform a complete air quality modeling analysis to determine if an adjustment in States' NO_X budgets is in order.

The divergent views reflected in these comments has convinced EPA that it should clarify the role of the budgets in this rule. In light of that role, as explained below, EPA has decided to allow only a limited opportunity to revise the budgets in the very near term. However, under the approach the Agency is following, the rule would not penalize States for not ultimately achieving the budgets, if the State initially projected compliance using the data set forth in this rule, and the State has fully implemented all of the measures reflected in those initial projections, and the measures are as effective in reducing NO_X emissions as they were projected to be in the State plan.

As explained in the NPR, SNPR, and above, EPA based the budgets on its choice of measures that are highly cost-effective and therefore are the easiest for upwind States to implement to reduce transport. However, EPA sought to structure the rule to give the upwind States a choice of which mix of measures to adopt to achieve the aggregate amount of required NO_X emissions reduction.

To offer the States this choice, EPA employed a multi-step approach leading to a numerical budget for each State. In the first step, EPA projected the mass emissions for EGUs and industrial boilers out to 2007, taking into account measures required under the CAA and projected growth. The result was a base case 2007 subinventory for each of those two categories. Next, EPA projected the 2007 mass emissions for other sectors of the emission inventory (e.g., mobile sources), again taking into account projected growth and measures required under the CAA and existing SIPs, thereby creating a base case 2007 subinventory for each of them as well. The aggregation of all of the base case 2007 subinventories is the complete base case 2007 inventory. The EPA then applied cost-effective control measures to the EGU, industrial boiler and other non-EGU source categories as explained in section III., to determine the amount of the reductions from these categories. The EPA applied control measures to the base case inventory to develop the final budget. Thus, the final budget is the sum of (1) the emissions remaining after application of the cost-effective control measures to the subinventories for the categories for which controls are assumed for purposes of budget calculation and (2) the emissions in the base case 2007 subinventories for the categories for which EPA assumed no controls.

The rule then requires each upwind State to use the same base case 2007 inventory in its 1999 SIP submittal as EPA used in developing the State's budget. In that SIP submittal, the State must show that the measures it has adopted will achieve the same aggregate emissions reductions as the control strategies assumed by EPA in developing the State's budget. More specifically, to demonstrate compliance with the SIP call, a State must adopt and implement control measures that are projected to achieve the aggregate emissions reductions determined by EPA based on the application of highly cost-effective controls to EGUs, industrial boilers and other affected non-EGUs. While a State may choose to achieve those reductions through application of measures other than those used by EPA in calculating required reductions, any measures it adopts must achieve the reductions assumed by EPA in the development of its budgets.

The control measures that the State chooses to require will become the enforceable mechanism under the NO_X SIP call. If a State elects to regulate boilers, turbines or combined cycle units that are greater than 250 mmBtu/hr— regardless of whether they are connected to an electrical generator of any size—or to regulate boilers, turbines and combined cycle units that serve electrical generators greater than 25 Mwe, regardless of the heat input capacity of the unit, the State must provide mass emissions limits or their equivalent (see section VI.A.2) for these sources or source categories. The mass emissions limits may be set on a source-by-source basis or may be set for an entire group of sources allowing trading between the sources. These mass emission limits must assume growth no greater than EPA's calculations. Any growth that occurs in that category would have to be accommodated within the mass emission allocations provided by the State for that category, even if the growth in that category should prove to exceed EPA's projections. This is appropriate because as discussed in the SNPR and Section VI.A.2. of today's preamble, EPA believes that the control approaches, growth assumptions, and monitoring for this group of sources have advanced to the point that complying with, tracking, and enforcing a maximum mass emissions limit is reasonable. Furthermore, based on the analyses in the RIA, EPA believes that mass emission limits remain highly cost-effective for these categories when growth is accommodated within the limits. The EPA modeled the expected growth in capacity and capacity utilization of the source categories listed above based on growth assumptions in the IPM that have been subject to extensive public comment and refinement over a several-year period. On the basis of their growth, assumptions and assumed emissions rates, EPA determined that mass emission limits would remain highly cost-effective when new sources are covered within the limits. EPA projects that even if actual growth for this group of sources exceeds the projected growth by over one-third, mass emission limits would remain highly cost-effective according to the criteria used for this rule.

For other categories, EPA will not require a State to remain within a mass emission allocation. Today's rule does require a State to use the base case 2007 inventory in its budget demonstration. However, the rule does not require States to obtain additional reductions in cases where a State's 2007 emissions exceeds its budget due to higher than expected emissions from source categories other than the categories listed above (certain boilers, turbines, and combined cycle units). These exceedances may be the result of growth that exceeds projections for those source categories. However, if a State elects to control these other source categories to achieve the required reductions in whole or part, the adopted measures must be as effective in reducing NO_X emissions as they were projected to be in the State plan. Any failure by a State to adopt measures adequate to achieve reductions equal to the required amount would be treated as noncompliance with this rule. Any failure by the State to implement these measures by the appropriate date would be considered a failure to implement those measures.

In contrast, the overall budget number itself is not enforceable against the State. The budget serves as a tool for projecting in advance whether a State has adopted measures that would produce the required amount of emissions reductions, as indicated by the initial demonstration submitted in September 1999. The budgets are also a means for determining from 2003 to 2007 whether States are fully implementing those measures. Thus, the budgets are an accounting mechanism for ensuring that the upwind States have adopted and implemented control measures that prohibit the significant

amounts of NO_X emissions targeted by section 110(a)(2)(D)(i)(I).

Given that States will not be subject to enforcement actions if emissions in 2007 from uncontrolled sectors exceed the base case 2007 inventory projections, EPA does not intend to revise those projections merely because such new information becomes available over time. Rather, EPA intends to allow commenters an additional opportunity to request revisions to the source-specific data used to establish each State's budget in this SIP call. This opportunity will be made available during the first sixty days of the 12-month period between signature of today's rule and the deadline for submission of the required SIP revisions (i.e., November 23, 1998). Commenters would need to submit any proposed changes in their inventories to the EPA Air and Radiation docket (A–96–56) within that sixty day period. Individuals interested in modifications requested by commenters may review the materials as they are submitted and available in the docket. At the end of this period, EPA will, within sixty days, evaluate the data submitted by commenters and, if it is determined to be technically justified, revise this rule to incorporate it into the State budget determinations. For a comment to be considered, the request for modification must be submitted in electronic format containing, at a minimum, the data elements listed below for each source category. Additionally, no comment will be considered unless information is provided to corroborate and justify the need for the requested modification. For example, corroborating information in the case of the EGUs can be the inclusion of copies of each source's official same year EIA 860 or 861 form submissions that support the requested change. For non-EGUs, corroborating information can include 1995 operational and emissions information officially submitted (during that time period) by the source to a federal, State, or local government regulating entity.

Each request for modification of data for EGU sources must include the following information:

- Federal Information Placement System State Code.
- Federal Information Placement System (FIPS) County Code.
- Plant name.
- Plant ID numbers (ORIS code preferred, State agency tracking number also or otherwise).
- Unit ID numbers (a unit is a boiler or other combustion device).
- Unit type (also known as prime mover; e.g., wall-fired boiler, stoker boiler, combined cycle, combustion turbine, etc.).
- Primary fuel on a heat input basis.
- Maximum rated heat input capacity of unit.
- For electrical generating units, nameplate capacity of the largest generator the unit serves.
- For 1995 and 1996 ozone season heat inputs.
- 1996 (or most recent) average NO_X rate for the ozone season.
- Latitude and longitude coordinates.
- Stack parameter information (height, diameter, flow, etc.).
- Operating parameters (hours per day, seasonal throughput, etc.).
- Identification of specific change to the inventory, and
- The reason for the change.

Each request for modification of data for non-EGU point sources must include the following information:

- Federal Information Placement System State Code.
- Federal Information Placement System (FIPS) County Code.
- Plant name.
- Facility primary standard industrial classification code (SIC).
- Plant ID numbers (NEDS, AIRS/AFS, and State agency tracking number also or otherwise).
- Unit ID numbers (a unit is a boiler or other combustion device).
- Primary source classification code (SCC).
- Maximum rated heat input capacity of unit.
- 1995 ozone season or typical ozone season daily NO_X emissions.
- 1995 existing NO_X control efficiency.
- Latitude and longitude coordinates.
- Stack parameter information (height, diameter, flow, etc.).
- Operating parameters (hours per day, seasonal throughput, etc.).
- Identification of specific change to the inventory, and
- The reason for the change.

Each request for modification of data for stationary area and nonroad mobile sources must include the following information:

- Federal Information Placement System State Code.
- Federal Information Placement System (FIPS) County Code.
- Primary source classification code (SCC).
- 1995 ozone season or typical ozone season daily NO_X emissions.
- 1995 existing NO_X control efficiency.
- Identification of specific change to the inventory, and
- The reason for the change.

Each request for modification of data for highway mobile sources must include the following information:

- Federal Information Placement System State Code.
- Federal Information Placement System (FIPS) County Code.
- Primary source classification code (SCC) or vehicle type.
- 1995 ozone season or typical ozone season daily vehicle miles traveled (VMT).
- 1995 existing NO_X control programs.
- Identification of specific change to the inventory, and
- The reason for the change.

After this initial ''shake out'' period before submission of the SIP revisions, EPA will not adjust inventories or the resulting State budgets merely because some new information on a segment of EPA's projections comes to its attention. However, when EPA reviews each State's reports, it will pay special attention to the causes for any exceedance of the portions of the inventory that the State is controlling as a means to meet today's rule. If a State exceeds its budget because of greater-than-expected growth in areas not having additional controls, EPA would not penalize the State by requiring the State to offset those increased emissions. Rather, EPA would use the base case projections for all sectors (as revised after the initial period described above) and focus on whether the State had implemented the measures that its 1999 demonstration had shown would, based on those base case inventories, achieve the budget levels. Similarly, the rule would not penalize the State if components in the budget prove inaccurate because of changes in models (e.g., the release of an updated MOBILE model) or because of technical errors (e.g., the size of a unit was incorrectly identified in the inventory, a unit was double-counted, or the RACT level assumed in the base is different from what the State ultimately selected as RACT with EPA approval).

In the NPR, EPA also raised the question of what would happen if EPA adopts national measures beyond what EPA already assumed in the base case 2007 inventory. The EPA indicated that it could use either of two approaches in response: (1) States could receive credits for the real emission reductions that result from the new Federal measures and, therefore, implement a smaller portion of its planned emission reductions, or (2) States would be required to continue to implement the measures in their revised SIPs because affected States are required to continue to achieve emissions reductions equivalent to those which can be achieved through application of highly cost-effective control measures.

One commenter supported the emission reduction credit for State SIPs resulting from new Federal national measures adopted after the State emission budgets are defined but before 2007. According to this commenter, in such a case the State could implement a smaller portion of its planned emission reductions because of the reduction brought about by the Federal national rule. Another commenter said the EPA should allow full credit for all Federal measures and encouraged the EPA to timely implement and adopt all Federal measures. A State said States should be allowed to take full SIP credit for Federal measures which are implemented in these States. According to one commenter, not allowing States to take credit for new Federal measures would have the effect of downward ratcheting of NO_X budgets. Other States said new Federal measures not accounted for in the SIP call should not be used to offset State measures required to achieve the mandated NO_X emissions reductions.

The EPA has decided to adopt the second approach described above. Thus, EPA's adoption of a national measure not reflected in the base case 2007 inventory would not allow the State to avoid a measure that would otherwise be needed to demonstrate that the State will achieve the required reductions. As stated above, the SIP must prohibit all emissions that contribute significantly to downwind nonattainment and maintenance problems. The State therefore is required to eliminate an amount of emissions corresponding to what is achievable with the highly cost-effective measures identified in this notice. The comments received have not provided an adequate basis for concluding that EPA's adoption of an additional national measure justifies scaling back on that requirement. For that reason, EPA will not allow States to adjust the base case 2007 inventory inventories to reflect any such additional national measures. Rather, for these reports the States should continue to use the base case 2007 inventory set forth in this rule.

In the SNPR, EPA also discussed establishing a process for reassessing the State budgets for the post-2007 timeframe. Today's final rule is based on analyses using the most complete, scientifically-credible tools and data available for the assessment of transport. The EPA expects that there will be a number of updates and refinements in air quality methodologies and emissions estimation techniques over the next 10 years. Therefore, EPA intends to reassess ozone transport using the latest emissions and air quality monitoring data and the next generation of air quality modeling tools. The reassessment will include an evaluation of the effectiveness of the regional NO_X measures States have implemented in response to today's final rule. Modeling analyses will be used to evaluate whether additional local or regional controls are needed to address residual nonattainment in the post-2007 timeframe. The assessment will also examine differences in actual growth versus projected growth in the years up to 2007 as well as expected future growth throughout the entire OTAG region. The reassessment will also review advances in control technologies to determine what reasonable and cost-effective measures are available for purposes of controlling local and regional ozone problems. In addition, EPA will continue to look at the issues that surround the use of output-based State budget allocations. Based on this reassessment, EPA may establish new budget levels and allocation mechanisms for the post-2007 timeframe. The current budget levels and the measures used to comply with today's final rule will remain in effect until EPA takes action on establishing new State budgets.

6. Compliance Supplement Pool

The EPA has received comments expressing concern that some sources may encounter unexpected problems installing controls by the compliance deadline that, in turn, could cause unacceptable risks for a source and its associated industry. More specifically, commenters have expressed concerns related to the electricity industry. If unexpected problems arise for specific sources that are used to generate electricity, some commenters believe that compliance with the May 1, 2003 deadline could adversely impact the reliability of the electricity supply. Commenters that raised concerns regarding the compliance deadline generally supported additional compliance flexibility for the SIP call.

In both the NPR and SNPR, EPA solicited comment on a number of provisions that would provide additional flexibility to both States and sources for the requirements of the NO_X SIP call. In the NPR, EPA proposed that the NO_X SIP call would require full implementation of controls by no later than September 2002, but solicited comment on the range of implementation dates from between September 2002 and September 2004. In addition to the compliance deadline, EPA also solicited comment on the role of banking as a separate compliance flexibility for the NO_X SIP call. Banking may generally be defined as allowing sources that make emissions reductions beyond current requirements to save and use these excess reductions to exceed requirements in a later time period. Depending upon the design of a trading program, banking provisions can provide companies greater latitude for when controls are installed at particular sources. In the SNPR, EPA presented a range of options for incorporating banking in the NO_X Budget Trading Program including early reduction provisions and phasing in controls. The EPA received many comments supporting banking in the NO_X Budget Trading Program and also as a general flexibility mechanism that should be permissible for any State program used to comply with the NO_X SIP call.

In response to comments supporting an extended compliance deadline, EPA has moved the deadline from the proposed date of September 2002 in the NPR to May 1, 2003. As discussed further in Section V, this change provides sources 7–8 additional months for implementing control requirements while ensuring that controls are fully implemented by the 2003 ozone season. The EPA believes that the compliance date of May 1, 2003 for NO_X controls to be installed to comply with the NO_X SIP call is a feasible and reasonable deadline. See Section V.A.1. and the technical support document ''Feasibility of Installing NO_X Control Technologies By May 2003'' for further discussion.

To provide additional flexibility to States and sources for complying with the NO_X SIP call beyond the extension of the compliance deadline, EPA is establishing banking provisions and a compliance supplement pool in today's final rule. The banking provisions are outlined in Section III.F.7. The compliance supplement pool is a voluntary provision that provides flexibility to States in addressing concerns associated with full compliance by May 1, 2003. Each State will be able to use the pool to cover excess emissions of sources that are unable to meet the compliance deadline during the 2003 and 2004 ozone seasons. The pool may be used to credit sources that make early reductions and to directly delay the compliance deadline for specific sources. Credits issued from the compliance supplement pool will not be valid for compliance past the 2004 ozone season. The EPA established the compliance supplement pool by calculating one pool for the entire NO_X SIP call region. The pool was then allocated to the States in proportion to the size of the emissions reduction they are required to achieve under the NO_X SIP call so that each

State has its own compliance supplement pool. The size of each State's compliance supplement pool and the procedures that will apply to the use of the pool are described below.

a. Size of the Compliance Supplement Pool. The EPA believes it is important for the size of the pool to be capped. Capping the pool makes it possible to estimate the potential impact that the compliance supplement pool may have on NO_X emissions during the 2003 and 2004 ozone seasons. Furthermore, EPA does not anticipate problems for sources in meeting the May 1, 2003 deadline. If there are such cases, they should be relatively few in number. Therefore, the size of the pool only needs to be large enough to cover the limited potential for unexpected compliance delays.

Today's final rule sets the size of the regional compliance supplement pool at 200,000 tons. The EPA believes this is a reasonable size for the pool given the analyses that were used in establishing the State NO_X budgets for today's final rule. As discussed in Section V.A.1., EPA believes the most cost-effective control strategies available to comply with the proposed budgets include post-combustion controls (Selective Catalytic Reduction [SCR] and Selective Non-catalytic Reduction [SNCR]) and combustion controls (e.g., low NO_X burners, overfire air, etc.) on large electric generating units and large non-electric generating units. For the reasons cited in Section V.A.1., EPA estimates that the implementation of SCR controls is potentially more complicated and requires more time than SNCR or combustion controls and, therefore, would determine what the longest schedule would be for full implementation of the assumed NO_X controls. Since EPA estimates that a single SCR installation will take about 23 months, EPA expects the first SCR installations to be completed in 2001. Since compliance is required by 2003, one can assume 33 percent of SCR capacity will be installed each year from 2001 to 2003. The 200,000 ton number is sufficient to cover the excess emissions that must be offset if one year's worth of SCR installations were delayed by a year. Table III–3 shows each State's compliance supplement pool. The 200,000 tons were allocated to States in proportion to the size of the emissions reduction they are required to achieve under the NO_X SIP call. The EPA used this allocation methodology based on the assumption that the need for the pool would be directly related to the magnitude of the emissions reductions required in each State to comply with the NO_X SIP call.

TABLE III–3.—STATE COMPLIANCE SUPPLEMENT POOLS

[Tons]

State	Base	Budget	Tonnage reduction	Compliance supplement pool
Alabama	218,610	158,677	59,933	10,361
Connecticut	43,807	40,573	3,234	559
Delaware	20,936	18,523	2,413	417
District of Columbia	6,603	6,792	(189)	0
Georgia	240,540	177,381	63,159	10,919
Illinois	311,174	210,210	100,964	17,455
Indiana	316,753	202,584	114,169	19,738
Kentucky	230,997	155,698	75,298	13,018
Maryland	92,570	71,388	21,182	3,662
Massachusetts	79,815	78,168	1,648	285
Michigan	301,042	212,199	88,842	15,359
Missouri	175,089	114,532	60,557	10,469
New Jersey	106,995	97,034	9,960	1,722
New York	190,358	179,769	10,590	1,831
North Carolina	213,296	151,847	61,450	10,624
Ohio	372,626	239,898	132,728	22,947
Pennsylvania	331,785	252,447	79,338	13,716
Rhode Island	8,295	8,313	(18)	0
South Carolina	138,706	109,425	29,281	5,062
Tennessee	252,426	182,476	69,950	12,093
Virginia	191,050	155,718	35,332	6,108
West Virginia	190,887	92,920	97,967	16,937
Wisconsin	145,391	106,540	38,851	6,717
Total	4,179,751	3,023,113	.....	200,000

b. State Distribution of the Compliance Supplement Pool. States have two options for making the pool available to sources. One option is to distribute some or all of the pool to sources that generate early reductions during ozone seasons prior to May 1, 2003. The second option is to run a public process to provide tons to sources that demonstrate a need for a compliance extension. A State wishing to use the compliance supplement pool may divide the State pool and make some of it available to sources through both options, or may use only one of the options for distributing the pool to sources prior to May 1, 2003 according to the procedures discussed below. Tons that are not distributed by a State prior to May 1, 2003 will be retired by EPA.

(1) Early Reduction Credits. The EPA encourages States to consider making the compliance supplement pool available to sources through an early reduction credit program. States may use early reduction credits as an incentive for sources to make NO_X emissions reductions prior to the 2003 ozone season that would otherwise not occur. By generating early credits or acquiring them from other sources, companies will be able to use the early reduction credits to extend the timeframe for achieving actual emissions reductions at specific sources that may require additional time. To establish an early credit program, States that participate in the NO_X Budget Trading Program may use the provisions

set forth in that trading program (See Section VII.F). States not participating in the NO_X Budget Trading Program are also free to develop their own rules for granting early reduction credits and recognizing the credits for compliance during the 2003 and 2004 ozone seasons. The procedures for establishing an early credit program are presented below in Section III.F.7.c.

(2) Direct Distribution to Sources. States may also distribute the compliance supplement pool directly to sources that demonstrate a need for the compliance supplement. Under this approach, sources would be responsible for demonstrating to the State and public that achieving compliance by May 1, 2003 would create undue risk either to its own operation or its associated industry. Before granting a direct distribution to a source, the State must provide the public an opportunity to comment on the validity of the need for direct distribution of the compliance supplement. The direct distribution process must be initiated and completed between September 30, 2002 and May 1, 2003. States which choose to grant early reduction credits cannot conduct the direct distribution until all early reduction credits have been issued by the State. By postponing the direct distribution until after September 2002, sources will have the maximum opportunity to achieve compliance, either through installation of controls or with early reduction credits, before using this option. States and the public will also be better positioned to determine legitimate requests after September 2002.

To ensure that direct distribution of the compliance supplement is only provided to sources that truly need a compliance extension, States are only permitted to give credits to an owner or operator of a source that demonstrates the following:

- The process of achieving compliance by May 1, 2003 would create undue risk for the source or its associated industry. For electric generating units, the demonstration should show that installing controls would create unacceptable risks for the reliability of the electricity supply during the time of installation. This demonstration would include a showing that it was not feasible to import electricity from other systems during the time of installation. Non-electric generating sources may also be eligible for the compliance supplement based on a demonstration of risk comparable to that described for the electricity industry.
- For a source subject to an early reduction credit program, it was not possible to compensate for delayed compliance by generating early reduction credits at the source or by acquiring credits generated by other sources.
- For a source subject to an emissions trading program, it was not possible to acquire allowances or credits for the 2003 ozone season from sources that will make reductions beyond required levels during the 2003 ozone season.

7. Banking

As noted in the NPR and SNPR, States have the flexibility to choose their own set of control measures to meet their Statewide NO_X budget established under the NO_X SIP call. States and sources have supported the use of emissions trading programs as a control measure for complying with the NO_X SIP call requirements. EPA has provided a model cap-and-trade program (NO_X Budget Trading Program) for large stationary sources that States can adopt as one option for establishing an emissions trading program. A number of commenters (both States and sources) have also expressed interest in pursuing alternative trading programs in addition to or as a substitute for the NO_X Budget Trading Program. One possible flexibility mechanism available to sources subject to an emissions trading program is the ability to bank emissions reductions. Banking may generally be defined as allowing sources that make emissions reductions beyond required levels to save and use these excess reductions to compensate for emitting emissions above required levels in a later time period. In the SNPR, EPA requested comment on whether and how banking should be incorporated into the design of the NO_X Budget Trading Program. In the proposal, four banking options were presented: (1) Banking would not be a feature; (2) banking would begin when the trading program begins (May 2003); (3) sources would be allowed to generate early reductions credits for use after the start of the program and banking would continue after the program begins; (4) banking would begin with the first phase of a two-phase trading program and continue thereafter (i.e., phased-in control requirements). The EPA also requested comment on options for managing the use of banked allowances in order to limit the potential for emissions to be significantly higher than budgeted levels because of banking. The EPA specifically proposed using a ''flow control'' mechanism in the latter two banking options where the potential exists for a large amount of banked allowances to be available for use at the start of the program.

a. Banking Starting in 2003. Comments for the NO_X Budget Trading Program were generally supportive of including banking in the trading program. Commenters noted that allowing sources to make excess reductions in one year and use these reductions to emit above required levels in a later year encourages early and cost-saving emission reductions, helps avoid end-of-season emissions spikes (because unused allowances retain their value for compliance in future years), and encourages more expedient development and implementation of NO_X control technology. Commenters pointed out that banking also provides sources flexibility in achieving emission reduction goals, allowing them to save allowances in years when the cost of achieving a given emission level is relatively low for use in years when the cost is relatively higher (for example, a year characterized by low availability of nuclear and hydro generation capacity would be a higher cost year). Thus, banking was seen by many commenters as a critical tool for sources to respond to uncertainty. Some commenters, however, expressed caveats along with their support for banking. They cited the need for some form of bank management to ensure that the use of banked allowances does not detract from the environmental goal of the NO_X SIP call. At least one commenter recommended that EPA identify banking as an area to be reviewed for problems during audits of the program to ensure it did not have a detrimental impact.

The EPA also received comments supporting banking that were not specific to the NO_X Budget Trading Program. Many commenters addressed the concept of banking when proposing alternative strategies for establishing and implementing the State budgets that were proposed in the NO_X SIP call. These comments regarded banking as a fundamental factor in establishing the timing and control level for the State budgets. With all other factors being equal, a NO_X SIP call that allows banking provides additional flexibility and cost savings to affected sources than a NO_X SIP call without banking. For this reason, many commenters included banking in their alternative proposals.

In order to provide additional flexibility to States and sources under the NO_X SIP call as discussed in section III.F.6., and recognizing that States may pursue alternative trading programs other than the NO_X Budget Trading Program, the Agency believes it is important to establish criteria for banking that would apply to all programs that States may use to comply with requirements of the NO_X SIP call.

Therefore, EPA is setting forth provisions in today's final rule that will allow banking in the NO_X Budget Trading Program and other State trading programs. Trading programs used to comply with the NO_X SIP call may allow banking to start in the first control period of the program, May 1 through September 30, 2003. Beginning in that control period, States may allow sources included in these programs to bank NO_X emissions reductions not otherwise required by the State's SIP, for compliance in future control periods. As outlined below, the banking provisions also require the use of a flow control mechanism beginning in 2004 and allow States to credit early reductions generated by sources prior to 2003 that may be used for compliance only in the 2003 and 2004 ozone seasons. The final rule for the NO_X Budget Trading Program conforms with these banking provisions. Additionally, alternative emissions trading programs used to comply with the SIP call will be subject to these banking criteria as well other applicable criteria in § 51.121 and any other applicable EPA guidance such as the Economic Incentive Program rules and guidance.

b. Management of Banked Allowances. Many utility and industry commenters generally opposed the use of discounts or constraints on banked allowances, arguing that such measures would reduce the incentives to control emissions beyond required levels. In addition, commenters felt the measures were overly complex and restrictive, as well as unnecessary, since the stringent control level proposed would serve as a barrier to overcontrol, precluding the establishment of a sizeable bank. Several commenters remarked that any decision regarding whether and to what extent a trading program should impose restrictions on the use of banked allowances should proceed from an analysis of the air quality effects of that use; in the absence of such an analysis, there would be little basis for imposing restrictions or for deciding what restrictions would properly address air quality effects. However, these commenters did not provide analyses demonstrating that the use of banked allowances in any given season would not be a problem in the context of the NO_X SIP call. One commenter pointed out specifically that the sheer magnitude of the SIP call region should preclude EPA from implementing a flow control management scheme similar to that used under the Ozone Transport Commission's (OTC) trading program, since protection of problem areas would not be feasible on such a large scale.

Several commenters who were opposed to the management of banked allowances, however, stated that if restrictions were to be imposed, they would favor flow control as the most cost-effective, least rigid means of management. A few commenters added that, if implemented, flow control should be applied on a source-by-source basis so as to avoid penalizing all of the participants in the trading program for the excess banking of individual participants. One commenter stated that if EPA concludes that there is an adequate basis for imposing some type of restriction, it should avoid placing any absolute limit on the amount of banked allowances that can be used in a given season. Another commenter suggested that if EPA chooses to propose managed banking, it should consider establishing an initial period without managed banking upon which a managed banking program can later be based if it turns out that ''trading contributes to nonattainment.'' Several additional commenters, most notably northeastern States and a few environmental groups, supported the use of a flow control management system to discourage excess use of banked allowances in any one ozone season. One such commenter suggested that EPA conduct an analysis similar to that used by the OTC in determining the appropriate level of flow control for the SIP call region.

Based on the stated goal of the NO_X SIP call, to achieve specified limits on NO_X emissions for the purpose of reducing NO_X and ozone transport across State boundaries in the eastern half of the United States, EPA believes it is appropriate to place some limitation on the amount of emissions variability that may occur with banking, and therefore, occur with the transport of NO_X. At the same time, any limitations on banking should still fit within the market-based structure of trading programs, rather than imposing overly stringent limits that would potentially eliminate the advantages of having banking in the first place. For these reasons, EPA is including a provision in today's final rule requiring any State program used to comply with the requirements of the NO_X SIP call that allows banking to limit the potential effects of banking through a flow control mechanism as described below. The flow control mechanism will be applicable starting in the 2004 ozone season. In this year, unused credits from the compliance supplement pool as well as unused credits or allowances from the 2003 ozone season would be considered banked.

The EPA believes that the flow control mechanism serves as an important insurance policy against emissions variability in emissions trading programs used to comply with the NO_X SIP call. The mechanism as described below would only restrict the use of banked allowances or credits when a significant amount are used for compliance in a specific ozone season. Based on the analyses in the RIA, EPA believes that the flow control mechanism is set at a level that will allow sources to use banking without restriction. However, the flow control mechanism provides the extra security to downwind areas that banking will not result in significant increases of emissions above budgeted levels. The EPA also recognizes that a wide variety of emissions trading programs may be used by States. Therefore, the requirements for the flow control mechanism described below are intended to be general, thus allowing States the flexibility to adjust the flow control mechanism to fit the specific needs of each program. Section VII.F. also provides further discussion of the flow control mechanism and describes how it is incorporated into the NO_X Budget Trading Program.

The flow control mechanism allows the unlimited banking of emissions reductions by sources during and after 2003, but discourages the ''excessive use'' of banked allowances or credits by establishing either an absolute limit on the number of banked allowances or credits that can be used each season or a rate discounting the use of banked allowances or credits over a given level. The key issue with flow control is to establish the level at which flow control is triggered. In the SNPR, EPA solicited comment on establishing the level at 10 percent of the ozone season budget for the sources included in the trading program. This level was proposed because 10 percent seems to be a reasonable number that would allow a significant amount of banked allowances or credits to be used, but not so many as to jeopardize the intended effects of the NO_X SIP call in a given season. The EPA also proposed the 10 percent number because it is the level used for flow control in the OTC's trading program. Although some commenters questioned whether this number is appropriate for the NO_X SIP call region, commenters did not provide explicit analyses or recommendations for a different number. Thus, EPA continues to believe that 10 percent is a reasonable number and is including this in today's final rule. Based on the analyses in the RIA, EPA does not

anticipate sources to bank above the 10 percent level. Therefore, this level should prevent significant emissions increases resulting from banking without restricting sources normal operations. The effect of flow control set at 10 percent of the trading program budget is that for a given season, sources may use banked allowances or credits for compliance without restrictions in an amount up to 10 percent of the NO_X budget for those sources in the trading program. Banked allowances or credits that are used in an amount greater than 10 percent of the NO_X budget for those sources will have restrictions that are described below.

The EPA believes it is necessary to provide flexibility to States for determining how to apply the 10 percent flow control in individual trading programs and for determining the appropriate restrictions for banked allowances or credits that are used in an amount greater than the 10 percent number. States have the flexibility to apply the flow control mechanism to specifically control the use of banked allowances or credits at each source or to apply the mechanism more broadly across the entire trading program. For example, by applying flow control at the source level, a State would allow each source participating in the trading program to use banked allowances without restrictions in an amount not greater than 10 percent of its allowable NO_X emissions for the ozone season. Conversely, flow control could be applied so that individual sources may use banked allowances or credits in an amount more than 10 percent without restrictions, but the total number used throughout the entire trading program (i.e., total number of banked credits or allowances used for compliance throughout all States participating in the trading program) could not exceed 10 percent of the allowable NO_X emissions for all sources in the trading program without restrictions. The net effect is the same under either approach—banked allowances or credits may be used each year without restrictions in an amount that does not exceed 10 percent of the allowable NO_X emissions for all sources covered by the trading program. The NO_X Budget Trading Program uses the latter approach. See Section VII.F. for more details.

The second issue for the flow control mechanism is to determine what restrictions should be placed on banked allowances or credits that are used in an amount greater than 10 percent of the allowable NO_X emissions for all sources covered by the trading program. Again, EPA is providing flexibility for the restrictions that States may use. States may use a discount that is no less than two-for-one, requiring sources to retire one additional banked allowance or credit for each banked allowance or credit used for compliance in an amount greater than the 10 percent level. Or States may set the 10 percent level as a hard cap and not allow any banked allowances or credits to be used in an amount greater than the 10 percent level. Although the discount option provides more flexibility to sources and more uncertainty regarding NO_X emissions in a given year, EPA believes both options serve as an acceptable restriction for limiting the variability of emissions associated with banking. As described in Section VII.F, the NO_X Budget Trading Program uses the 2-for-1 discount as the applicable restriction.

c. Early Reduction Credits. The majority of commenters for the NO_X Budget Trading Program generally supported the option of awarding early reduction credits. Commenters noted that the issuance of credits will provide cost savings and environmental benefits by encouraging early reductions, facilitate compliance with the budget by allowing sources to earn allowances that may be used to delay more stringent emission reductions, and stimulate the market by ensuring allowances are available for trading at the program start. Several commenters advocated making early reduction credits available for any reductions that exceed baseline controls, whereas other commenters supported early reduction credits only if they exceed the controls required under the SIP call, as was proposed by EPA. A few other commenters suggested levels between these two options. A few OTC States suggested that OTC allowances banked in Phase II (between 1999–2003 for reductions beyond an approximate 0.20 lb/mmBtu rate) could be used as early reduction credits in the NO_X Budget Trading Program, either one-for-one or at a discount ratio, depending on the level beyond which credits were awarded in the latter program. A few remaining commenters, concerned about the potential for creating or exacerbating ozone violations, supported early reduction credits and banking only if coupled with flow control.

Regarding the appropriate length of the period in which early reductions could be earned, some commenters supported EPA's proposed option in the SNPR of a two-year early reduction period, while others favored a three or four-year period. At least one commenter specifically recommended that the early reduction period start in January 1995, while another suggested September 1998. Several commenters rejected EPA's suggestion that early reduction credits be calculated as a set-aside from the first five years of allowances, arguing that treating the credits as set-asides would be inconsistent with the nature of early reduction credits. Conversely, a few other commenters felt the credits should be awarded from within State budgets to avoid budget inflation. Additional commenters criticized EPA's suggestion that if early reduction credits were awarded, they be awarded at the company level, arguing instead for individual source awards. One commenter stated that awards on a company basis would not address the load shifting concerns EPA cited, while another thought EPA could address the load shifting concern by basing credits on activity levels in a historic period rather than by shifting to a company-level award. Finally, at least one commenter felt that States should be able to independently establish parameters for awarding voluntary early reductions.

For the reasons set forth in Section III.F.7, Compliance Supplement Pool, EPA is allowing, but not requiring, States to grant early reduction credit to sources that reduce their ozone season NO_X emissions below levels specified by the State prior to the 2003 control period. The early reduction credits may be used by sources for compliance during the 2003 and 2004 ozone seasons. EPA believes that an early credit program can be helpful to encourage emissions reductions prior to the 2003 ozone season that would not be made without an economic incentive for the sources to act. Furthermore, the early credit program will provide additional allowances or credits for use during the 2003 and 2004 ozone seasons. By generating early credits or acquiring early credits from other sources that generated credits, companies would have greater latitude in determining when actual emissions reductions are achieved at specific sources. As discussed in Section III.F.7, this may be beneficial to some companies that are concerned about the time and effort required to install all necessary emissions controls prior to May 2003. States will be limited in the amount of early reduction credits that they may grant by the amounts set forth in Section III.F.7 Compliance Supplement Pool. The potential pool of credits that is available to each State is intended to be large enough to provide a real incentive for early reductions and enough flexibility to allow the installation of some control equipment, if necessary, past May 2003.

Section VII.F. of today's preamble outlines how the early credit program is being incorporated into the NO_X Budget Trading Program and how banked allowances from the OTC program may be integrated with this provision. States that develop alternative trading programs may craft their early reduction program to meet the needs of their specific trading program. The following outlines the general requirements that any early reduction program used to comply with the NO_X SIP call should meet. For an emission reduction to be eligible as an early reduction credit, it must meet the following criteria:

- Surplus—The reduction is not contained in the State's SIP or otherwise required by the CAA.
- Verifiable—The reduction can be verified as actually having occured.
- Quantifiable—The reduction is quantified according to procedures set forth by the State and approved by EPA. Early reduction credits generated by sources serving electric generators with a nameplate capacity greater than 25 MWe or greater or boilers, combustion turbines and combined cycle units with a maximum design heat input greater than 250 mmBtu/hr, should be quantified according to the monitoring provisions of part 75, subpart H as required in § 51.121(h)(1)(iv).

Beyond the above requirements, States are free to develop an early credit program that meets the needs of their specific trading program provided the State does not issue credits in an amount greater the size of the credit pool presented in Section III.F.7. A State's early credit program may be established for any ozone season occurring after a State's early credit rule is approved by EPA into the State's SIP revision and before May 1, 2003.

To ensure that a State does not issue an amount of early credits beyond the amount specified in each State's compliance supplement pool, EPA recommends that a State develop procedures to be used in case there is an over-subscription of the early credit pool. Possible options include granting early credits on a first-come, first-served basis or waiting until all applications are submitted and then discounting the early credits on a pro-rata basis so that the amount of early credits issued equals the size of the State's pool. States may also influence the amount of early credits that sources generate by considering what level of emissions reductions the State will recognize as early reductions. For example, a State may choose to issue early reduction credits for any reductions below applicable requirements. However, the State may choose to make the demonstration more stringent by requiring early reduction credits to be generated by reductions that are below a limit that is tighter than applicable requirements (e.g., grant early reductions that are 30 percent below applicable requirements or below a fixed level such as 0.20 lb/mmBtu).

In the SNPR, EPA also solicited comment on a phased-in NO_X Budget Trading Program that would begin in 2001, two years prior to the compliance date for the NO_X SIP call. In response to the proposal, most commenters that discussed the phase-in program option were generally opposed to it. Their primary argument was that such a program would effectively accelerate the compliance date for NO_X controls under the SIP call. A few commenters, however, still supported the phase-in approach as a means of mitigating the uncertainties inherent in the allowance market that would develop for the 2003 control period, allowing sources to gain experience prior to 2003. Some commenters specifically favored a phase-in approach only if it does not interfere with the 2003 ozone season compliance schedule, whereas others supported a phase-in approach as a means of reducing the burdens of the 2003 ozone season compliance schedule.

Today's final rule requires States to achieve the necessary emissions reductions by May 2003 and does not require States to phase-in controls prior to 2003. States that wish to phase-in controls prior to 2003 as a part of a State trading program may do this, but they are not required to do so to comply with the NO_X SIP call. States that establish a phased-in trading program in order to allow sources to generate early reduction credits will be subject to the requirements for early reductions as described above, including the requirement that a State may not grant an amount of early reductions in excess of the State's compliance supplement pool. For a discussion of how the Ozone Transport Commission's trading program may be integrated with the compliance supplement pool and the early reduction provisions, see Section VII.F, which describes the banking provisions of the NO_X Budget Trading Program.

G. Final Statewide Budgets

1. EGU

a. Description of Selected Approach. As described in Section III.B.3. of this notice, the EGU budget component is calculated based on applying a 0.15 lb/mmBtu emission limit to sources greater than 25 MWe. This limit is applied uniformly across all States that are covered by this SIP call. The higher of 1995 or 1996 heat input, grown to 2007 is used to calculate the budget component.

b. Summary of Budget Component. Both the 2007 electricity generating Base Case and the electricity generating Budget component were revised from the levels in the SNPR based on the changes described in Section III.B.3. of this notice. These revisions are shown in Tables III–4 and III–5. The difference between the revised 2007 Base Case and Budget emissions from the SNPR and the final Base Case and Budget emissions is shown in Table III–4. Negative changes indicate decreases. The final percent reduction from the 2007 Base Case to the Budget is shown in Table III–5.

TABLE III–4.—CHANGES TO REVISED SNPR BASE CASE AND BUDGET COMPONENTS FOR ELECTRICITY GENERATING UNITS

[Tons NO_X/season]

State	Revised base	Final base	Percent change	Revised budget	Final budget	Percent change
Alabama	85,201	76,900	–10	30,644	29,051	–5
Connecticut	7,048	5,600	–21	5,245	2,583	–51
Delaware	10,727	5,800	–46	4,994	3,523	–29
District of Columbia	236	*0	–100	152	207	36
Georgia	84,890	86,500	2	32,433	30,255	–7
Illinois	119,756	119,300	0	36,570	32,045	–12
Indiana	159,917	136,800	–14	51,818	49,020	–5
Kentucky	130,919	107,800	–18	38,775	36,753	–5

TABLE III–4.—CHANGES TO REVISED SNPR BASE CASE AND BUDGET COMPONENTS FOR ELECTRICITY GENERATING UNITS—Continued

[Tons NO_X/season]

State	Revised base	Final base	Percent change	Revised budget	Final budget	Percent change
Maryland	37,575	32,600	–13	12,971	14,807	14
Massachusetts	24,998	16,500	–34	14,651	15,033	3
Michigan	73,585	86,600	18	29,458	28,165	–4
Missouri	81,799	82,100	0	26,450	23,923	–10
New Jersey	17,484	18,400	5	8,191	10,863	33
New York	43,705	39,200	–10	31,222	30,273	–3
North Carolina	86,872	84,800	–2	32,691	31,394	–4
Ohio	167,601	163,100	–3	51,493	48,468	–6
Pennsylvania	120,979	123,100	2	45,971	52,000	13
Rhode Island	1,351	1,100	–19	1,609	1,118	–31
South Carolina	57,146	36,300	–36	19,842	16,290	–18
Tennessee	83,844	70,900	–15	26,225	25,386	–3
Virginia	51,113	40,900	–20	20,990	18,258	–13
West Virginia	76,374	115,500	51	24,045	26,439	10
Wisconsin	45,538	52,000	14	17,345	17,972	4
Total	1,568,655	1,501,800	–4	563,784	543,825	–4

*The base case for DC is actually projected to be 3 tons per season. The base case values in this table are rounded to the nearest 100 tons.

TABLE III–5.—FINAL NO_X BUDGET COMPONENTS AND PERCENT REDUCTION FOR ELECTRICITY GENERATING UNITS

[tons/season]

State	Final base	Final budget	Percent reduction
Alabama	76,900	29,051	62
Connecticut	5,600	2,583	54
Delaware	5,800	3,523	39
District of Columbia	*0	207	NA
Georgia	86,500	30,255	65
Illinois	119,300	32,045	73
Indiana	136,800	49,020	64
Kentucky	107,800	36,753	66
Maryland	32,600	14,807	55
Massachusetts	16,500	15,033	9
Michigan	86,600	28,165	67
Missouri	82,100	23,923	71
New Jersey	18,400	10,863	41
New York	39,200	30,273	23
North Carolina	84,800	31,394	63
Ohio	163,100	48,468	70
Pennsylvania	123,100	52,000	58
Rhode Island	1,100	1,118	–2
South Carolina	36,300	16,290	55
Tennessee	70,900	25,386	64
Virginia	40,900	18,258	55
West Virginia	115,500	26,439	77
Wisconsin	52,000	17,972	65
Total	1,501,800	543,825	64

*The base case for DC is actually projected to be 3 tons per season. The base case values in this table are rounded to the nearest 100 tons.

2. Non-EGU Point Sources

As indicated in the proposal and discussed earlier in this notice, EPA continues to believe that technically feasible control measures costing between an average of $1,000 to $2,000 per ozone season ton (1990 dollars) are highly cost-effective and therefore should be the basis for determining the significant amounts that must be eliminated by each covered jurisdiction. In the SNPR, EPA committed to examining alternatives that would limit the number of affected non-EGU sources for the purpose of establishing emissions budgets, yet still achieve the environmental objective of mitigating broad-scale ozone transport. The EPA examined alternatives that target reductions from the largest non-EGU source category groupings, and within each of the largest groupings applied the cost-effectiveness criteria. The resulting emissions budget covers the majority of emissions from large non-utility sources, and does not include reductions from small sources and sources that, as a group, are not efficient to control, or are already covered by other Federal measures (e.g., CAA § 112 MACT). The description below summarizes the budget approach for non-EGU point sources.

a. Description of Selected Approach.

(1) NO_X Budget Sources. The following approach is used to determine if a unit's emissions would be decreased as part of the budget calculation.

Industrial boilers, turbines, stationary internal combustion engines and cement manufacturing are the only non-EGU sources for which reductions are assumed in the budget calculation.

1. Use heat input capacity data for each source if the data are in the updated inventory.

2. If heat input capacity data are not available, use the default identification of small and large sources developed by EPA/Pechan for OTAG and also used to develop the NPR and SNPR budgets for source categories with heat input capacity fields (''default data'').

3. Emission reductions would be assumed if specific source heat input capacity data or default data indicate that a source is greater than 250 mmBtu/hr in the updated inventory.

4. If specific or default heat input capacity data are not available in the updated inventory (or not appropriate for a particular source category), emission reductions would be assumed if the unit's average summer day emissions are greater than one ton per day based on the updated inventory.

5. All others are ''small'' and no emission reductions are assumed.

It should be noted (as described earlier in this section) that no emissions reductions are assumed for point sources with capacities less than or equal to 250 mmBtu/hr but with emissions greater than 1 ton/day for purposes of calculating the budget. This is a change from the NPR which assumed RACT controls on units with capacities less than or equal to 250 mmBtu/hr and emissions greater than 1 ton/day.

(2) Control Levels. For purposes of calculating the State NO_X budgets for the relevant sources (described above), the following emissions decreases from uncontrolled levels were assumed:

1. Non-EGU boilers and turbines—60% decrease.

2. Stationary internal combustion engines—90% decrease.

3. Cement manufacturing plants—30% decrease.

These controls result in an overall reduction in emissions from all affected large non-EGU point sources of almost 40 percent (187,800 tons per season decrease).

Each State's budget is based on application of these controls beginning on May 1, 2003. The EPA recognizes that if States include these source categories in a regionwide trading program, as EPA encourages States to do, each State will comply with its budget through compliance of its sources with the requirements of the regionwide trading program. Of course, under the trading program, sources in a State may acquire or sell allowances that will, in turn, allow for higher or lower emissions levels for that State than assumed in this action. Because EPA has determined that the ambient effect of such a trading program across the region is consistent with the basis for including States in the SIP call (see discussion below at Section IV), EPA has structured its rule to allow a State to meet its budget by including the amount of emissions for which sources in the State hold allowances from out-of-State sources. Overall, total NO_X emissions in the region will be within the budget.

b. Summary of Budget Component. Both the 2007 Base Case and Budget component for non-electricity generating point sources were revised based on the changes described above. Changes to the 2007 base reflect changes in the base year (1995) emissions and changes in growth factors. Changes to the budget components reflect these changes as well as the change in level of control. These resulting budget components are shown in Tables III–5 and III–6. The difference between the 2007 Base Case and Budget emissions as revised in the SNPR and the final Base Case and Budget emissions for non-electricity generating point sources is shown in Table III–6. Negative changes indicate decreases. The final percent reduction from the 2007 Base Case to the Budget is shown in Table III–7.

TABLE III–6.—CHANGES TO REVISED BASE CASE AND BUDGET COMPONENTS FOR NON-ELECTRICITY GENERATING POINT SOURCES

[Tons NO_X/season]

	Revised base	Final base	Percent change	Revised budget	Final budget	Percent change
Alabama	48,187	49,781	3	24,416	37,696	54
Connecticut	5,254	5,273	0	3,103	5,056	3
Delaware	5,276	1,781	−66	2,271	1,645	−28
District of Columbia	311	310	0	259	292	13
Georgia	33,939	33,939	0	14,305	27,026	89
Illinois	65,351	55,721	−15	40,719	42,011	3
Indiana	51,839	71,270	37	29,187	44,881	54
Kentucky	19,019	18,956	0	11,996	14,705	23
Maryland	10,710	10,982	3	5,852	7,593	30
Massachusetts	9,978	9,943	0	6,207	9,763	57
Michigan	61,656	79,034	28	35,957	48,627	35
Missouri	12,320	13,433	9	9,012	11,054	23
New Jersey	22,228	22,228	0	12,786	19,804	55
New York	20,853	25,791	24	14,644	24,128	65
North Carolina	34,412	34,027	−1	19,267	25,984	35
Ohio	53,329	53,241	0	30,923	35,145	14
Pennsylvania	74,839	73,748	−1	41,824	65,510	57
Rhode Island	327	327	0	327	327	0
South Carolina	34,994	34,740	−1	18,671	25,469	36
Tennessee	67,774	60,004	−11	34,308	35,568	4
Virginia	25,509	39,765	56	10,919	27,076	148
West Virginia	42,733	40,192	−6	21,066	31,286	49
Wisconsin	21,263	22,796	7	11,401	17,973	58
Total	722,101	757,281	5	399,416	558,618	40

TABLE III–7.—FINAL NO_X BUDGET COMPONENTS AND PERCENT REDUCTION FOR NON-ELECTRICITY GENERATING POINT SOURCES

[Tons/season]

	Final base	Final budget	Percent reduction
Alabama	49,781	37,696	24
Connecticut	5,273	5,056	4
Delaware	1,781	1,645	8
District of Columbia	310	292	6
Georgia	33,939	27,026	20
Illinois	55,721	42,011	25
Indiana	71,270	44,881	37
Kentucky	18,956	14,705	22
Maryland	10,982	7,593	31
Massachusetts	9,943	9,763	2
Michigan	79,034	48,627	38
Missouri	13,433	11,054	18
New Jersey	22,228	19,804	11
New York	25,791	24,128	6
North Carolina	34,027	25,984	24
Ohio	53,241	35,145	34
Pennsylvania	73,748	65,510	11
Rhode Island	327	327	0
South Carolina	34,740	25,469	27
Tennessee	60,004	35,568	41
Virginia	39,765	27,076	32
West Virginia	40,192	31,286	22
Wisconsin	22,796	17,973	21
Total	757,281	558,618	26

3. Mobile and Area Sources

a. Description of Selected Budget Approach. As discussed in Section III.D.3 of the notice, EPA proposed highway budget components based on projected highway vehicle emissions in 2007 from a base year of 1990, assuming implementation of those measures incorporated in existing SIPs, such as inspection and maintenance programs and reformulated fuels, measures already implemented federally, and those additional measures expected to be implemented federally by 2007. As discussed in Section III.E of this notice, EPA proposed nonroad mobile source budget components based on projected nonroad mobile source emissions in 2007 from a base year of 1990. These projections were developed by estimating the emissions expected in 2007 from all nonroad engines, assuming implementation of those measures incorporated in existing SIPs, measures already implemented federally, and those additional measures expected to be implemented federally. For area sources, no cost-effective control measures were identified in the NPR. Because no comments were received that demonstrate that additional controls for highway, nonroad, or area sources are both feasible and highly cost-effective, the final budgets are based on the same levels of controls that were proposed.

b. Summary of Budget Component. Changes were made to the baseline stationary area, nonroad and highway mobile source budget data as discussed in Sections III.D. and III.E. of this notice. Budget components were calculated using the updated baseline and the controls discussed above. The resulting final budget components for these sectors are contained in Tables III–7, III–8, and III–9 below, along with the difference between the proposed Budget emissions and the final Budget emissions. The budget components are not compared to the 2007 base because no reductions were calculated beyond the base case. In the NPR and SNPR, EPA used a 2007 CAA baseline for these source sectors. Because the measures that are assumed in the budgets for these sectors are measures that would occur in the absence of the SIP call, EPA believes that it is more appropriate to use the budget level for these source sectors as the baseline and compare the total budgets to this revised baseline.

TABLE III–8.—FINAL NO_X BUDGET COMPONENTS FOR STATIONARY AREA SOURCES

[Tons/season]

	Proposed budget	Final budget	Percent change
Alabama	25,229	25,225	0
Connecticut	4,587	4,588	0
Delaware	1,035	963	−7
District of Columbia	741	741	0
Georgia	11,901	11,902	0
Illinois	7,270	7,822	8
Indiana	25,545	25,544	0
Kentucky	38,801	38,773	0
Maryland	8,123	4,105	−49
Massachusetts	10,297	10,090	−2

TABLE III–8.—FINAL NO_X BUDGET COMPONENTS FOR STATIONARY AREA SOURCES—Continued

[Tons/season]

	Proposed budget	Final budget	Percent change
Michigan	28,126	28,128	0
Missouri	6,626	6,603	0
New Jersey	11,388	11,098	−3
New York	15,585	15,587	0
North Carolina	9,193	10,651	16
Ohio	19,446	19,425	0
Pennsylvania	17,103	17,103	0
Rhode Island	420	420	0
South Carolina	8,420	8,359	−1
Tennessee	11,991	11,990	0
Virginia	25,261	18,622	−26
West Virginia	4,901	4,790	−2
Wisconsin	10,361	8,160	−21
Total	302,350	290,689	−4

TABLE III–9.—FINAL NO_X BUDGET COMPONENTS AND PERCENT REDUCTION FOR NONROAD SOURCES

[Tons/season]

	Proposed budget	Final budget	Percent change
Alabama	18,727	16,594	−11
Connecticut	9,581	9,584	0
Delaware	4,262	4,261	0
District of Columbia	3,582	3,470	−3
Georgia	22,714	21,588	−5
Illinois	56,429	47,035	−17
Indiana	27,112	22,445	−17
Kentucky	22,530	19,627	−13
Maryland	18,062	17,249	−4
Massachusetts	19,305	18,911	−2
Michigan	24,245	23,495	−3
Missouri	19,102	17,723	−7
New Jersey	21,723	21,163	−3
New York	30,018	29,260	−3
North Carolina	18,898	17,799	−6
Ohio	42,032	37,781	−10
Pennsylvania	29,176	25,554	−12
Rhode Island	2,074	2,073	0
South Carolina	12,831	11,903	−7
Tennessee	47,065	44,567	−5
Virginia	25,357	21,551	−15
West Virginia	10,048	10,220	2
Wisconsin	15,145	12,965	−14
Total	500,018	456,818	−9

TABLE III–10. FINAL NO_X BUDGET COMPONENTS AND PERCENT REDUCTION FOR HIGHWAY VEHICLES

[Tons/season]

	Proposed budget	Final budget	Percent change
Alabama	56,601	50,111	−11
Connecticut	17,392	18,762	8
Delaware	8,449	8,131	−4
District of Columbia	2,267	2,082	−8
Georgia	77,660	86,611	12
Illinois	77,690	81,297	5
Indiana	66,684	60,694	−9
Kentucky	46,258	45,841	−1
Maryland	28,620	27,634	−3
Massachusetts	23,116	24,371	5
Michigan	81,453	83,784	3
Missouri	55,056	55,230	0
New Jersey	39,376	34,106	−13
New York	94,068	80,521	−14

TABLE III–10. FINAL NO_X BUDGET COMPONENTS AND PERCENT REDUCTION FOR HIGHWAY VEHICLES—Continued

[Tons/season]

	Proposed budget	Final budget	Percent change
North Carolina	73,056	66,019	−10
Ohio	92,549	99,079	7
Pennsylvania	73,176	92,280	26
Rhode Island	5,701	4,375	−23
South Carolina	49,503	47,404	−4
Tennessee	67,662	64,965	−4
Virginia	79,848	70,212	−12
West Virginia	21,641	20,185	−7
Wisconsin	41,651	49,470	19
Total	1,179,477	1,173,163	−1

4. Potential Alternatives to Meeting the Budget

The EPA believes that there are additional control measures and alternative mixes of controls that a State could choose to implement by May 1, 2003. Examples of such measures are described below and illustrate that options are potentially available in several source categories.

The EPA believes that, with respect to EGUs, there is a large potential for energy efficiency and renewables in the NO_X SIP call region that reduce demand and provide for more environmentally-friendly energy resources. For example, if a company replaces a turbine with a more efficient one, the unit supplying the turbine would reduce the amount of fuel (heat input) the unit combusts and would reduce NO_X emissions proportionately, while the associated generator would produce the same amount of electricity. Renewable energy source generation includes hydroelectric, solar, wind, and geothermal generation. EPA recognizes that promotion of energy efficiency and renewables can contribute to a cost-effective NO_X reduction strategy. As such, EPA encourages States in the NO_X SIP call region to consider including energy efficiency and renewables as a strategy in meeting their NO_X budgets. One way to achieve this goal is by including a provision within a State's NO_X Budget Trading Rule that allocates a portion of a State's trading program budget to implementers of energy efficiency and renewables projects that reduce energy-related NO_X emissions during the ozone season. Another is to include energy efficiency and renewables projects as part of a State's implementation plan.

The EPA is working to develop guidance on how States can integrate energy efficiency into their SIPs by both of these mechanisms. The guidance will present EPA's current thinking on the important elements to include in a functional system that allocates a portion of a State's trading program budget to implementers of energy efficiency and renewables projects within the context of the NO_X Budget Trading Program. In addition, EPA will issue guidance outlining procedures for including energy efficiency and renewables projects in a State's SIP as control strategies for achieving the State's NO_X budget, separate from the NO_X Budget Trading Program. EPA plans to issue these guidance documents in the Fall of 1998 so that they will be available to States early in their SIP planning process.

With respect to non-EGUs, individual States could choose to require emissions decreases from sources or source categories that EPA exempted from the budget calculations. For example, there are many large sources for which EPA lacked enough information to determine potential controls and emissions reductions; States may have access to such information and could choose to apply cost-effective controls. In addition, States could choose to regulate one or more of the non-EGU stationary sources or source categories which EPA had exempted because emissions were relatively low considering other source categories in the 23 jurisdictions. In individual States, emissions from such sources could be a high percentage of uncontrolled emissions and, thus, be subject to efficient, cost-effective control for that particular State. Further, States may take other approaches to developing their budgets, such as cutoffs based on horsepower rather than tons per day, since they might have access to data that EPA did not have for all 23 jurisdictions.

With respect to mobile sources, States could implement other NO_X control measures in lieu of the controls described earlier in this section. For example, vehicle inspection and maintenance programs can provide significant NO_X reductions from highway vehicles. Additional NO_X reductions can be obtained by opting into the reformulated gasoline program, by implementing measures to reduce the growth in VMT, and by implementing programs to accelerate retirement of older, higher-emitting highway vehicles and nonroad equipment.

5. Statewide Budgets

The revised Statewide budgets that reflect the changes to the base year inventory and growth factors for all sectors and the revised control levels for the non-EGU point source sector described above are shown in Table III–11. For the 23 jurisdictions combined, the budgets result in a 28 percent reduction from the base case. In the NPR and SNPR the percent reduction was 35 percent. The difference in the percent reduction is due to several factors. First, in the NPR and SNPR reductions from certain highway and nonroad controls were assumed to occur as a result of measures implemented between promulgation of this rule and 2007. These measures include National Low Emission Vehicle Standards, the 2004 Heavy-Duty Engine Standards, the Federal Small Engine Standards, Phase II, Federal Marine Engine Standards (for diesel engines of greater than 50 horsepower), Federal Locomotive Standards, and the Nonroad Diesel Engine Standards. These controls were reflected in the budget but were not included in the base case. For the final rule, EPA determined that these measures should be included in the base case, rather than the budgets, because the measures would be implemented even in the absence of this rulemaking. Based on the emission levels that were used in the SNPR, the effect of using this approach to setting the base case is to decrease the percent reduction from 35 percent to approximately 31 percent.

The additional change in the percent reduction (from 31 percent to 28 percent) is primarily due to EPA's decision not to assume controls for several non-EGU source categories and to change the level of control for those non-EGU categories for which controls are assumed. Although the overall percent reduction went from 35 percent to 28 percent, the difference between the budget proposed in the SNPR and the final budgets in today's notice is less than 3 percent.

TABLE III–11.—REVISED STATEWIDE NO_X Budgets

[Tons/season]

State	Base	Budget	Percent reduction
Alabama	218,610	158,677	27
Connecticut	43,807	40,57	37
Delaware	20,936	18,523	12
District of Columbia	6,603	6,792	−3
Georgia	240,540	177,381	26
Illinois	311,174	210,210	32
Indiana	316,753	202,584	36
Kentucky	230,997	155,698	33
Maryland	92,570	71,388	23
Massachusetts	79,815	78,168	2
Michigan	301,042	212,199	30
Missouri	75,089	114,532	35
New Jersey	106,995	97,034	9
New York	190,358	179,769	6
North Carolina	213,296	151,847	29
Ohio	372,626	239,898	36
Pennsylvania	331,785	252,447	24
Rhode Island	8,295	8,31	30
South Carolina	138,706	109,425	21
Tennessee	252,426	182,476	28
Virginia	191,050	155,718	18
West Virginia	190,887	92,920	51
Wisconsin	145,391	106,540	27
Total	4,179,751	3,023,113	28

IV. Air Quality Assessment

A. Assessment of Proposed Statewide Budgets

In the SNPR, EPA documented the estimated ozone benefits of the proposed Statewide NO_X budgets based on an air quality modeling analysis. The major findings of that analysis are as follows:

(1) The emissions reductions associated with the proposed Statewide budgets are predicted to produce large reductions in both 1-hour and 8-hour concentrations in areas which currently violate the NAAQS and which would likely continue to have violations in the future without the SIP call budget reductions.

(2) Looking at individual ozone ''problem areas'' considered by OTAG shows similar results, based on the available metrics.

(3) Any ''disbenefits'' due to the NO_X reductions associated with the budgets are expected to be very limited compared to the extent of the benefits expected from these budgets.

(4) Even though the budgets are expected to reduce 1-hour and 8-hour ozone concentrations across all 23 jurisdictions, nonattainment problems requiring additional local control measures will likely continue in some areas currently violating the NAAQS. (63 FR 25903)

B. Comments and Responses

The EPA received numerous comments on the air quality modeling of the proposed NO_X budgets. The following is a summary of the main comments and EPA's responses.

Comment: Commenters stated that the emissions inventories used for modeling were flawed because EPA's projection of the base year emissions to 2007 improperly treated growth for certain electric generation units by growing these units beyond their design capacity.

Response: The EPA agrees with this comment and has revised the 2007 emissions projections for modeling to take this factor into account. For the modeling described in the SNPR, EPA applied State-level growth factors uniformly to existing sources in each State. This did not account for maximum capacity and could have resulted in sources being modeled with emissions that were higher than their actual capacity would allow. For the modeling described in this notice, EPA has revised the projection procedures to use IPM to allocate growth to existing units considering their design capacity. As described below, EPA has remodeled the 2007 Base Case and the Statewide budgets using this revised inventory and found that the conclusions from the revised runs do not differ from those based on the SNPR model runs of these budgets.

Comment: Commenters stated that EPA's modeling in the SNPR examined the impacts of the budgets applied regionwide (i.e., for each State for which a budget is required), rather than the impacts on downwind nonattainment of the budgets applied only in upwind States. Therefore, according to the commenters, this modeling is not useful for indicating the impact of the State budgets on downwind nonattainment or maintenance problems.

Response: The EPA is well aware that many States in the SIP Call region are both upwind and downwind States, that is, they are upwind of certain nonattainment areas and downwind from other States. For example, Pennsylvania is upwind of New York City, and emissions from Pennsylvania sources significantly contribute to this nonattainment problem; and

Pennsylvania is downwind of several States, emissions from which significantly contribute to Philadelphia's nonattainment problem.

The EPA is further aware that modeling analyses that evaluate emissions reductions in each State affected by today's rulemaking do not isolate the precise impact of emissions reductions from each upwind State on nonattainment in a State that is itself both an upwind and downwind State. That is, the emissions reductions in that upwind/downwind area impact its own nonattainment problems. To return to the example noted above, because emissions reductions in Pennsylvania affect Philadelphia's air quality, modeling Pennsylvania's emissions reductions along with emissions reductions in all other affected States does not isolate the impact of emissions reductions from States upwind of Pennsylvania on Philadelphia's air quality. As a result, EPA is aware that the regionwide modeling of different budget levels does not indicate the differential impact on downwind areas of higher budget levels as compared to lower budget levels in upwind areas.

Nevertheless, EPA believes that regionwide modeling of the State budgets is a useful indication of the overall impacts of various budget levels. Today's rulemaking requires regionwide emissions reductions, which will carry certain costs and will have certain impacts viewed on a State-by-State basis and on a regionwide basis. The multi-State budgets promulgated today mean that in a State that is both upwind and downwind of other States, such as Pennsylvania, the air quality will, in fact, be improved by the emissions reductions in upwind States and by the reductions within the States that are required to improve air quality further downwind. Thus, it is necessary to consider the upwind emissions reductions together with the downwind emissions reductions in order to fully evaluate the air quality impacts of the Statewide budgets. Regionwide modeling is the only available approach to indicate these ''real world'' impacts in individual States, as well as allow an assessment of those impacts in light of their costs. Accordingly, this modeling is useful in evaluating the overall impacts of the alternative budget levels considered in the course of the rulemaking. The EPA believes that a comparison of the overall impacts of alternative budget levels, in turn, serves as a means to confirm whether the budget levels promulgated in today's rulemaking yield meaningful air quality benefits. Moreover, EPA has conducted other modeling which indicates the impact of budget-level emissions on air quality downwind, as discussed below.

Comment: Commenters stated that EPA should have modeled the proposed budgets on a State-by-State basis in order to assess the downwind benefits of applying the budgets in each State.

Response: The EPA performed a multi-factor analysis to determine the amount of a State's emissions that significantly contribute to downwind nonattainment and what the resulting State budget should be. This is discussed in detail in Section II.C., Weight of Evidence Determination of Covered States. Specifically, EPA determined that emissions from all sources in certain States contribute to downwind problems, but that only a portion of those emissions—in some cases, a relatively small portion—may be reduced through highly cost-effective controls. The EPA established a budget for each State based on the elimination of these emissions. After EPA established the budgets, EPA performed air quality modeling to quantify the overall ozone benefits of the budgets applied in all upwind States on selected downwind areas. This modeling is described below. The EPA considered the results of this modeling as an additional piece of evidence in the analysis to confirm that the amount of emissions reductions from upwind States collectively provide meaningful reductions in nonattainment downwind.

For the purposes of this modeling it is sufficient to model the budgets collectively, and not State-by-State, to demonstrate that the intended benefits of the budgets are achieved. Commenters who recommended State-by-State modeling generally argued that it would indicate that the reductions from a particular State would have a relatively small impact downwind, particularly compared to the impact of local reductions or reductions from other upwind States. In general, such a modeling result could stem from the relatively small amount of emissions reductions required of a particular upwind State under the SIP Call, due to EPA's decision to base the budgets on cost-effective controls rather than, more expensive controls. However, EPA's air quality modeling of the ambient impact of the required budgets in the upwind States on downwind nonattainment (discussed below) shows that even if the downwind ambient impact of the required reductions from a particular upwind State were small, that impact, when combined with the impact from the reductions required from other upwind States, provides meaningful downwind benefits. Ozone air quality problems are caused by the collective contribution from numerous sources over a large geographic area, so that it is appropriate to assess the impact of reductions from a particular upwind State in combination with reductions from other upwind States. The downwind air quality benefits from these upwind reductions confirm the appropriateness of the promulgated budgets.

Comment: Commenters stated that EPA should have modeled alternative control options to determine if less stringent controls, either applied uniformly or on a subregional basis (i.e., multi-State subregional variations in control levels), would provide air quality benefits essentially equivalent to EPA's proposal. In addition, commenters submitted a considerable number of new modeling analyses intended to show that (a) sufficient downwind ozone benefits can be achieved with control levels less stringent than those associated with EPA's proposal; (b) controls applied in certain upwind States, when examined on a State-by-State basis, do not provide ''significant'' benefits in any downwind nonattainment area; and/or (c) NO_X controls increase ozone locally in some areas and these increases are greater than the predicted decreases. In addition to new control strategy modeling, commenters submitted modeling that pertains to the finding of significant contribution. The EPA's responses to this modeling are discussed in Section II.C., Weight of Evidence Determination of Covered States and in the Response to Comment document.

Response: In response to the comments on the need to model alternative controls, EPA has modeled alternative budgets based on several EGU and non-EGU control options. For the most part, these alternative budgets were modeled regionwide in order to assess, as discussed above, the benefits considering both downwind and upwind emissions reductions, collectively. Further, as discussed below, EPA modeled several other types of scenarios including runs to assess the impacts of the proposal applied in upwind States on several downwind areas. The EPA's modeling analyses are summarized below and described in detail in the Air Quality Modeling TSD.

Regarding the new control strategy modeling submitted by commenters, EPA has reviewed this information in the same way it reviewed the new modeling on ''significant contribution'', as described in Section II.C., Weight of Evidence Determination of Covered States. Specifically, EPA reviewed the commenters' modeling to determine and

assess (a) the technical aspects of the models that were applied; (b) the treatment of emissions inventories; (c) the types of episodes modeled; (d) the methods for aggregating, analyzing, and presenting the results; (e) the completeness and applicability of the information provided; and (f) whether the technical evidence supports the arguments made by the commenters. A summary of this review is discussed next. For the most part, the commenters used either the UAM–V model and/or the CAM_X model to assess the relative impacts of various NO_X control strategies. As discussed in Section II.C. Weight of Evidence Determination of Covered States, modeling results from both models are viewed by EPA as technically acceptable. Concerning the emissions used for modeling, most commenters stated that they used the EPA SNPR or IPM-derived 2007 Base Case emissions as a starting point for developing emissions for the control scenarios. However, the commenters did not provide emissions data summaries in order for EPA to confirm which inventories were used in the modeling. Also, the commenters did not document in detail how they applied the controls to the emissions inventory.

Most of the control strategy modeling submitted by commenters was performed for the July 1995 episode although a few commenters performed modeling for all four OTAG episodes and one commenter provided modeling for a non-OTAG episode in June of 1991. As discussed in Section II.C., and in the Response to Comment document, EPA's ability to fully evaluate and utilize the modeling submitted by commenters was hampered in some cases because only limited information on the results was provided.

The EPA considered the strengths and limitations in the commenters' modeling analyses in evaluating whether the technical evidence presented in the comments supports the arguments made by the commenters. A detailed review of the commenters' modeling is contained in the Response to Comment document. In general, this review indicates that (a) downwind ozone benefits increase as greater NO_X controls are applied to sources in upwind States, (b) emissions reductions at the level of the SIP Call, even when evaluated on an individual State-by-State basis, reduce ozone in downwind nonattainment areas, (c) the net benefits of NO_X control at the level of the SIP Call outweigh any local disbenefits, and (d) upwind NO_X reductions tend to mitigate local disbenefits in downwind areas. Thus, based on this evaluation, EPA generally found that the submitted modeling did not refute the overall conclusions EPA has drawn concerning the impacts of NO_X emissions in the relevant geographic areas. However, because the extent and level of detail in the information presented by the commenters was, in many cases, limited and/or qualitative, the EPA decided to model a number of alternative control scenarios for all four OTAG episodes. The results of EPA's modeling of the impacts of alternative NO_X controls are described next.

C. Assessment of Alternative Control Levels

As indicated above, EPA has remodeled the Base Case and Statewide budgets using updated EGU emissions which do not exceed the capacity of individual units. In addition, EPA has performed modeling of various alternative EGU and non-EGU control options. Further, EPA has modeled the benefits in selected downwind areas of the budgets applied in upwind States. The results of EPA's modeling analyses are summarized below and described in more detail in the Air Quality Modeling TSD.

1. Scenarios Modeled

As part of EPA's assessment, a 2007 SIP Call Base Case (hereafter referred to as the ''Base Case'') and eight emissions scenarios were modeled, as listed in Table IV–1. The first four scenarios (i.e. ''0.25'', ''0.20'', ''0.15t'', and ''0.12'') were designed to evaluate alternative EGU and non-EGU controls applied uniformly in all 23 jurisdictions. For each of these four scenarios, EGU emissions were determined assuming a cap-and-trade program across all 23 jurisdictions. The 0.15t scenario reflects the SIP Call proposal for both non-EGU and EGU sources. Note that non-EGU controls were modeled at the level of the proposal for all scenarios except for the 0.25 scenario for which less stringent controls were assumed.

TABLE IV–1.—EMISSIONS SCENARIOS MODELED

Base Case:
2007 SIP Call Base Case [1]
Point Sources: CAA Controls.
Area Sources: OTAG ''Level 1'' Controls.
Highway Vehicles: OTAG ''Level 0'' Controls.

Control scenarios	Electricity generation units—EGUs	Non-EGU point sources [2]
0.25	0.25 lb/mmBtu, interstate trading	60% reduction for large sources.
0.20	0.20 lb/mmBtu, interstate trading	70% reduction for large sources, RACT for medium sources[2].
0.15t	0.15 lb/mmBtu, interstate trading	70% reduction for large sources, RACT for medium sources.
0.12	0.12 lb/mmBtu, interstate trading	70% reduction for large sources, RACT for medium sources.
0.15nt	0.15 lb/mmBtu, intrastate trading	70% reduction for large sources, RACT for medium sources.

Downwind Scenarios for Analysis of ''Transport'':
(1) 0.15nt EGU and non-EGU controls in the Northeast [3]; 2007 Base Case emissions elsewhere.
(2) 0.15nt EGU and non-EGU controls in Georgia; 2007 Base Case emissions elsewhere.
(3) 0.15nt EGU and non-EGU controls in Illinois, Indiana, and Wisconsin; 2007 Base Case emissions elsewhere.

[1] See Table IV–2 for a listing of Base Case control measures.

[2] Reductions are from 2007 ''uncontrolled'' emissions. Non-EGU sources >250mmBtu/hr are considered as ''large''; sources <250mmBtu/hr, but >1tpd are considered as ''medium''. The non-EGU point source controls assumed for purposes of this modeling do not match the levels assumed for the purpose of calculating the final budgets.

[3] Northeast includes Connecticut, Delaware, District of Columbia, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, and Rhode Island.

The EPA also modeled a 0.15 intrastate trading scenario, ''0.15nt'', which was constructed with EGU emissions that meet each State's budget without interstate trading. In developing the EGU emissions for this scenario, intrastate trading among sources in a State was allowed to occur. The benefits of the 0.15nt scenario compared to those from the 0.15t scenario were examined to determine whether an interstate trading program would affect the overall benefits of the proposal.

The last three scenarios in Table IV–1 were designed to evaluate the downwind benefits resulting from reductions in transport due to the budgets in upwind States. Each of these scenarios constitutes a separate modeling run that applies the 0.15nt scenario in a different downwind area. For example, in the ''nt15NE'' scenario, the 0.15nt emissions budgets were applied only in those Northeast States subject to the SIP Call. The predictions from each of these three modeling runs for specific downwind areas were compared to the Base Case to estimate the impacts of the budgets applied only within the downwind area. The predictions from these three runs were then compared to the 0.15nt scenario across all 23 jurisdictions to estimate the additional benefits in each downwind area due to reductions in transport resulting from the budgets applied in both upwind and downwind States.

2. Emissions for Model Runs

As indicated in Table IV–1, Base Case emissions for area sources (including nonroad), highway vehicles, and non-EGU sources represent a combination of OTAG emissions data for various control levels. This includes CAA controls on non-EGU point sources, OTAG ''level 1'' controls on area sources, and ''level 0'' controls on highway vehicles. The control measures included in the Base Case for each source category are listed in Table IV–2. These modeling runs were performed before changes were made to the inventory in response to comments. For the 23 jurisdictions as a whole, the Base Case NO_X emissions that were modeled are 2 percent higher than the final Base Case emissions that reflect changes made in response to comments.

TABLE IV–2.—2007 SIP CALL BASE CASE CONTROLS

EGUs:
- Title IV Controls [phase 1 and 2].
- —250 Ton PSD and NSPS.
- —RACT & NSR in non-waived NAAs.

Non-EGU Point:
- —NO_X RACT on major sources in non-waived NAAs.
- —250 Ton PSD and NSPS.
- —NSR in non-waived NAAs.
- —CTG and Non-CTG VOC RACT at major sources in NAAs and OTR.
- —New Source LAER.

Stationary Area:
- —Two Phases of VOC Consumer and Commercial Products and One Phase of Architectural Coatings controls.
- —VOC Stage 1 and 2 Petroleum Distribution Controls in NAAs.
- —VOC Autobody, Degreasing and Dry Cleaning controls in NAAs.

Nonroad Mobile:
- Fed Phase II Small Eng. Stds.
- —Fed Marine Eng. Stds.
- —Fed Nonroad Heavy-Duty (≤=50 hp) Engine Stds—Phase 1.
- —Fed RFG II (statutory and opt-in areas).
- —9.0 RVP maximum elsewhere in OTAG domain.
- —Fed Locomotive Stds (not including rebuilds).
- —Fed Nonroad Diesel Engine Stds—Phases 2 and 3.

Highway Vehicles:
- —National LEV.
- —Fed RFG II (statutory and opt-in areas).
- —9.0 RVP maximum elsewhere in OTAG domain.
- —High Enhanced I/M (serious and above NAAs).
- —Low Enhanced I/M for rest of OTR.
- —Basic I/M (mandated NAAs).
- —Clean Fuel Fleets (mandated NAAs).
- —On-board vapor recovery.
- —HDV 2 gm std.

Rate of Progress Requirements:
- —Effectively, ROP through 1999.

Note that area and mobile source emissions were held constant at Base Case levels in all scenarios. The Base Case emissions for EGUs were obtained from simulations of IPM which projected 1996 electric generation to 2007 based on economic assumptions, unit specific capacity, and the requirements in Title I and Title IV of the CAA. The Base Case emissions that were modeled for the EGU sector are 4 percent higher than the final Base Case emissions for this sector. The EGU emissions estimates for each of the control scenarios in Table IV–1 were also derived using the IPM. Table IV–3 summarizes the emissions reductions provided by the control scenarios compared to the Base Case. The development of emissions data for air quality modeling is further described in the Air Quality Modeling TSD.

TABLE IV–3.—SUMMARY OF NO_X EMISSIONS REDUCTIONS

Region [1]	0.25	0.20	0.15t	0.12	0.15nt
Percent Reduction in Point Source NO_X Emissions From 2007 SIP Call Base Case					
Northeast	29	39	49	52	46
Midwest	40	51	59	65	58
Southeast	35	49	54	61	56
SIP Call [2]	37	48	57	62	57
Percent Reduction in Total NO_X Emissions From 2007 SIP Call Base Case					
Northeast	13	18	22	24	21
Midwest	22	28	33	36	32
Southeast	19	26	29	32	30
SIP Call [2]	20	26	30	33	30

[1] The Northeast includes Connecticut, Delaware, District of Columbia, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, and Rhode Island; the Midwest includes Illinois, Indiana, Kentucky, Michigan, Missouri Ohio, West Virginia, and Wisconsin; the Southeast includes Alabama, Georgia, North Carolina South Carolina, Tennessee and Virginia.

[2] ''SIP Call'' includes the total percent reduction over all 23 jurisdictions subject to budgets as part of this notice.

3. Modeling Results

The EPA applied UAM–V for each of the four OTAG episodes to simulate ozone concentrations for the Base Case and each scenario. The results for the uniform regionwide scenarios are presented first. This is followed by the results comparing interstate and intrastate trading. The results for the assessment of overall downwind benefits of the budgets applied in upwind States is presented last.

The analysis of model predictions focused 1-hour daily maximum values and 8-hour daily maximum values predicted for all 4 episodes. The rationale for analyzing the model predictions in this way is discussed in Section II.C. Each of the control scenarios was evaluated using the four ''metrics'' listed in Table IV–4. Note that the model predictions used in calculating the metrics were restricted to those 1-hour values >=125 ppb and 8-hour values >=85. Model predictions less than these concentrations were not included in the analysis.

TABLE IV–4.—AIR QUALITY METRICS

Metric 1: Exceedances	The number of values above the concentration level of NAAQS.[1]
Metric 2: Ozone Reduced-ppb	The magnitude and frequency of the ''ppb'' reductions in ozone.
Metric 3: Total ppb Reduced	The total ''ppb'' reduced by a given scenario, not including that portion of the reduction that occurs below the level of the NAAQS.
Metric 4: Population-Weighted Total ppb Reduced.	The same as Metric 3, except that the ozone reductions are weighted by the population in the grid cell in which the reductions occur.

[1] 1-hour values >=125 ppb; 8-hour values >=85 ppb.

A full description of these metrics and the procedures for selecting ''nonattainment'' receptors for calculating the metrics can be found in the Air Quality Modeling TSD. In brief, ''nonattainment'' receptors for the 1-hour analysis include those grid cells that (a) are associated with counties designated as nonattainment for the 1-hour NAAQS and (b) have 1-hour Base Case model predictions >=125 ppb. These grid cells are referred to as ''designated plus modeled'' nonattainment receptors. Using these receptors, the metrics were calculated for each 1-hour nonattainment area as well as for each State. To calculate the metrics by State, the ''nonattainment'' receptors in that State were pooled together.

For the 8-hour analysis, ''nonattainment'' receptors include those grid cells that (a) are associated with counties currently violating the 8-hour NAAQS and (b) have 8-hour Base Case model predictions >=85 ppb. These grid cells are referred to as ''violating plus modeled'' nonattainment receptors. The metrics were calculated on a State-by-State basis for the 8-hour analyses.

In general, the four metrics lead to similar overall conclusions. The results for the full set of receptor areas (i.e., ''designated plus modeled'' for the 1-hour NAAQS and ''violating plus modeled'' for the 8-hour NAAQS) are provided in the Air Quality Modeling TSD for all four metrics. In this preamble, Metrics 1 and 3 are presented to illustrate the results.

a. Impacts of Alternative Controls. The impacts on ozone concentrations of the 0.15t scenario and each of the alternative scenarios are provided by region (i.e., Midwest, Southeast, and Northeast) in Tables IV–5 and IV–6 for Metrics 1 and 3, respectively. The complete set of data for individual States and 1-hour nonattainment areas is provided in the Air Quality Modeling TSD. Table IV–5 shows the percent reduction in the number of exceedances across all four episodes between each control scenario and the Base Case. Table IV–6 shows the percent reduction in total ozone above the NAAQS provided by each scenario, compared to the total ozone above the NAAQS in the Base Case.

TABLE IV–5.—RESULTS FOR METRIC 1: NUMBER OF EXCEEDANCES

	0.25	0.20	0.15t	0.12	0.15nt
Percent Reduction in the Number of Exceedances 1-Hour Daily Maximum >=125 ppb					
Midwest	25	32	38	43	38
Southeast	23	33	34	40	36
Northeast	24	31	36	39	36
SIP Call Total	24	31	36	40	37
Percent Reduction in the Number of Exceedances 8-Hour Daily Maximum >=85 ppb					
Midwest	35	44	50	54	49
Southeast	30	40	46	51	48
Northeast	26	34	41	44	41
SIP Call Total	30	39	45	49	45

TABLE IV–6.—RESULTS FOR METRIC 3: TOTAL ''PPB'' REDUCED

	0.25	0.20	0.15t	0.12	0.15nt
Total ''ppb'' Reduced Compared to the Total ''ppb'' Above NAAQS in Base Case[1] 1-Hour Daily Maximum >=125 ppb					
Midwest	31	39	45	49	44
Southeast	27	37	39	44	41
Northeast	25	32	37	40	37
SIP Call Total	27	35	40	43	40
Total ''ppb'' Reduced Compared to the Total ''ppb'' Above NAAQS in Base Case 8-Hour Daily Maximum >=85 ppb					
Midwest	35	42	48	52	47
Southeast	33	44	49	53	50
Northeast	28	37	43	46	43
SIP Call Total	31	40	46	50	46

[1] The values in this table were calculated by dividing the Total ''ppb'' Reduced in the control scenario by the Total ''ppb'' above the NAAQS in the Base Case. These values represent the percent of total ozone above the NAAQS in the Base Case that is reduced by the control scenario.

The results indicate that the 0.15t scenario provides substantial reductions in both 1-hour and 8-hour ozone concentrations in all three regions.

In the Midwest the 0.15t scenario provides a 38 percent reduction in 1-hour exceedances and a 45 percent reduction in ''total ozone'' >=125 ppb. The regionwide Midwest reductions in 8-hour exceedances and ''total ozone'' >=85 ppb are 45 percent and 50 percent, respectively. Considering individual 1-hour nonattainment areas in this region, the reduction in exceedances due to the 0.15t controls are 36 percent over Lake Michigan,[61] 73 percent in Southwest Michigan, and 54 percent in Louisville. The corresponding reductions in ''total ozone'' >=125 ppb are 44 percent over Lake Michigan, 81 percent in southwest Michigan, and 64 percent in Louisville. The results for other areas are contained in the Air Quality Modeling TSD.

In the Southeast, 1-hour exceedances are reduced by 39 percent and the ''total ozone'' >=125 ppb by 34 percent. Considering individual nonattainment areas in the Southeast, the 0.15t scenario provides a 36 percent reduction in 1-hour exceedances in Atlanta and a 39 percent reduction in exceedances in Birmingham. The reduction in ''total ozone'' >=125 ppb is 41 percent in Atlanta and 54 percent in Birmingham. The overall regionwide ozone benefits across the Southeast are also large for the 8-hour NAAQS. For example, the number of 8-hour exceedances in this region is reduced by 46 percent with the 0.15t scenario.

In the Northeast, 0.15t provides a 37 percent reduction in 1-hour exceedances and a 34 percent reduction in ''total ozone'' >=125 pp. For individual nonattainment areas in the Northeast, the reductions in both Metrics 1 and 3 range from approximately 25 percent in Washington, DC up to 100 percent in Pittsburgh. For the serious and severe 1-hour nonattainment areas along the Northeast Corridor from Washington, DC to Boston, the 1-hour reductions vary from city to city, but are generally in the range of 25 percent to 55 percent. The regionwide reductions in 8-hour exceedances and ''total ozone'' >=85 ppb in the Northeast are above 40 percent.

In general, results from the scenarios evaluated demonstrate that the larger the reduction in NO_X emissions, the greater the overall ozone benefit. As indicated in Table IV–5 and IV–6, the 0.25 and 0.20 scenarios generally do not provide the same level of reduction as the 0.15t scenario in any of the three regions, whereas the 0.12 scenario provides additional ozone benefits beyond 0.15t in all three regions. Also, the results indicate that even with the most stringent control option considered, nonattainment problems requiring additional local controls may continue in some areas currently violating the NAAQS.

The impact on ozone reductions of a trading program versus meeting the budgets in each State can be seen by comparing the results for the 0.15t and 0.15nt scenarios. The data in Tables IV–5 and IV–6 indicate that there is no overall loss of ozone benefits for either 1-hour or 8-hour concentrations across the 23 jurisdictions due to trading. On a regional basis, the benefits of interstate and intrastate trading at the 0.15 control level are essentially the same in the Northeast and Midwest and slightly less with interstate trading in the Southeast.

[61] The rationale for analyzing the impacts over Lake Michigan is discussed in Section II.C, Weight of Evidence Determination of Covered States.

As indicated in the summary of comments, several commenters stated that there would be local disbenefits due to the EPA proposal that would outweigh any benefits. The modeling runs discussed here shed light on the issue. Of the four metrics examined by EPA, Metrics 3 and 4 (i.e., ''Total ppb Reduced'' and ''Population-Weighted Total ppb Reduced'') are most appropriate for identifying any net disbenefits because the ozone decreases and any increases (disbenefits) are considered in calculating each of these metrics. The metrics will have negative values for situations in which the total disbenefits are greater than the total benefits. The EPA examined the 1-hour estimates for these metrics for each 1-hour nonattainment area and the 8-hour estimates by State to identify any areas in which the modeling indicated a net disbenefit. The results indicate that the only net disbenefit predicted in any of the scenarios was in Cincinnati for the 1-hour NAAQS. However, these disbenefits occurred only in the 0.25 and 0.20 scenarios. In the 0.15t scenario, there is a net 32 percent benefit in Cincinnati with Metric 3 and a net benefit of 23 percent with Metric 4. There were no net Statewide 8-hour disbenefits in any of the scenarios examined by EPA.

b. Impacts of Upwind Controls on Downwind Nonattainment. The impacts of the budgets applied in upwind States on downwind ozone in the (a) the Northeast, (b) Georgia, and (c) Illinois-Indiana-Wisconsin, were evaluated by comparing the 0.15nt scenario to the three downwind transport assessment scenarios listed in Table IV–1. In each of these three scenarios, EPA modeled the 0.15nt option in one of the downwind areas with the Base Case emissions applied in the rest of the OTAG region.[62] The results of each downwind control run were compared to the Base Case in order to assess the benefits of the controls applied within those areas (i.e., the downwind areas). Similarly, the predictions for the 0.15nt regionwide scenario were compared to the Base Case to estimate the benefits in each area of the downwind plus upwind controls. The benefits of the upwind controls were determined by calculating the difference between the benefits of the downwind controls compared to the benefits of the downwind plus upwind controls. The results are provided in Table IV–7. The following is an example of how the benefits of upwind controls were calculated for Metric 1 (i.e., number of exceedances). In the Northeast, there were 1052 grid-day exceedances of the 1-hour NAAQS predicted in the Base Case scenario. In the downwind control scenario (i.e., 0.15nt applied in the Northeast only), the number of exceedances declined to 827 grid-days which represents a 21 percent reduction in exceedances from the Base Case due to controls in the Northeast. In the downwind plus upwind scenario, the number of 1-hour exceedances declined even further to 670 grid-days which is a 36 percent reduction from the Base Case. Therefore, the upwind controls provide a 15 percent reduction in 1-hour exceedances in the Northeast (i.e., 36 percent versus 21 percent).

For Metric 3 (i.e., Total ''ppb'' Reduced), the impact of upwind controls on downwind ozone was determined using two approaches. The first approach is similar to the procedures followed described above for exceedances. For example, in the Northeast the total ppb >=125 ppb (across all grids and days) in the Base Case was 14,724 ppb. In the downwind control scenario the total ppb reduced by these controls was 3289 ppb which represents a 22 percent reduction (i.e., 3289 ppb divided by 14,724 ppb) in total ppb >=125 ppb. In the downwind plus upwind control scenario, the total ppb reduced was 5500 ppb which represents a 37 percent reduction in total ppb >=125 ppb in the Base Case. Therefore, the upwind controls provide a 15 percent reduction in total ppb >=125 ppb (i.e., 37 percent versus 22 percent). The results for Metric 3 calculated using this first approach are presented in Table IV–7.

A second approach to analyze the benefits of upwind controls using Metric 3 is to determine the fraction or percentage of the total reduction from downwind plus upwind controls that comes from just the upwind controls. This is determined by first subtracting the ppb reduced by downwind controls from the ppb reduced by downwind plus upwind controls. This difference provides an estimate of the portion of the reduction due to upwind controls. Then, the portion of the reduction due to upwind controls is divided by the reduction from downwind plus upwind controls to estimate the percent of reduction due to the upwind controls only. For example, in the Northeast the 1-hour total ppb reduced by the downwind plus upwind controls is 5500 ppb and the total ppb reduced by the downwind controls is 3289 ppb. The difference (2211 ppb) is the estimated amount of reduction due to upwind controls. Thus, in this example, the upwind controls provide 40 percent (i.e., 2211 ppb divided by 5500 ppb) of the total ppb reduction in the downwind plus upwind regionwide scenario. The results for Metric 3 using this second approach for estimating the impacts of upwind controls are provided in Table IV–8.

	1-hour daily max			8-hour daily max		
	DW [1]	DW + UW [1]	UW [1]	DW	DW + UW	UW
Percent Reduction in Exceedances						
Northeast	21	36	15	18	40	22
Lake MI	29	36	7	11	17	6
IL/IN/WI	35	50	15	27	57	30
Atlanta	30	39	9	[2] NA	NA	NA
Georgia [3]	30	39	9	15	27	12
Percent Reduction in Total ''ppb'' Above the NAAQS						
Northeast	22	37	15	23	43	20
Lake MI	39	44	5	20	28	8
IL/IN/WI	17	33	16	32	62	30
Atlanta	37	43	6	NA	NA	NA

[62] As described in the Air Quality Modeling TSD, emissions from the intrastate trading scenario rather than the interstate trading scenario were used for the analysis of upwind controls in order to avoid any potentially confounding effects of small changes in the downwind emissions between the downwind control scenario and the downwind plus upwind control scenario due to interstate trading.

	1-hour daily max			8-hour daily max		
	DW [1]	DW + UW [1]	UW [1]	DW	DW + UW	UW
Georgia	37	43	6	25	35	10

[1] ''DW'' denotes the reductions due to the downwind controls; ''DW + UW'' denotes the reductions due to controls applied regionwide in upwind plus downwind areas; and ''UW'' denotes the incremental additional reduction in exceedances.
[2] NA: The metrics for the 8-hour NAAQS were not calculated for individual 1-hour nonattainment areas.
[3] The 1-hour results for Georgia are the same as for Atlanta because Atlanta is the only 1-hour nonattainment area in that State.

TABLE IV–8.—PERCENT OF THE TOTAL PPB ABOVE THE NAAQS THAT IS REDUCED DUE TO UPWIND CONTROLS

	1-hour daily max (percent)	8-hour daily max (percent)
Northeast	40	48
Lake MI	12	27
IL/IN/WI	49	48
Atlanta	14	NA
Georgia	14	28

In the following discussion of the impacts of upwind controls on ozone in the three downwind areas, the results for Metric 3 focus on the second approach for calculating upwind impacts using this metric since the results based on the first approach are similar to those for Metric 1, as indicated in Table IV–7.

In the Northeast, the upwind controls provide a 15 percent reduction in 1-hour exceedances and a 22 percent reduction in 8-hour exceedances. The results in Table IV–8 indicate that upwind controls provide 40 percent or more of the total ppb reduction from the downwind plus upwind control scenario for both the 1-hour and 8-hour NAAQS. Considering the results for several 1-hour nonattainment areas in the Northeast, the upwind controls reduce the number of 1-hour exceedances by 21 percent in Baltimore, 12 percent in Philadelphia, 12 percent in New York City, 19 percent in Greater Connecticut, and 3 percent in Boston. The percent of the total ppb reduction from the downwind plus upwind controls that is due to the upwind controls alone is 48 percent in Baltimore, 29 percent in Philadelphia, 38 percent in New York City, 47 percent in Connecticut, and 25 percent in Boston. The results for all of the Northeast 1-hour nonattainment areas are provided in the Air Quality Modeling TSD.

The impacts of upwind controls on nonattainment in Georgia were examined using the 0.15nt scenario in Georgia versus the Base Case scenario and the scenario with 0.15nt applied regionwide. The results, as shown in Table IV–7, indicate that the upwind controls are predicted to reduce the number of 1-hour exceedances in Atlanta by 9 percent. Also, in Atlanta, 14 percent of the 1-hour total ppb above the NAAQS reduced by the downwind plus upwind regionwide scenario is due to the controls applied in upwind States. For the 8-hour NAAQS, the upwind controls provide a 12 percent reduction in 8-hour exceedances within the State of Georgia. The upwind controls provide 28 percent of the total ppb reduction in the downwind plus upwind regionwide control scenario.

To assess the benefits in Illinois-Indiana-Wisconsin due to upwind controls, EPA examined the data for the Lake Michigan receptor area and for the three States, combined. The discussion of results focuses on the Lake Michigan receptor area. The data for this area and the three States are provided in Table IV–7. For the Lake Michigan receptor area, there is a 7 percent reduction in 1-hour exceedances and a 6 percent reduction in 8-hour exceedances due to upwind controls. The upwind controls provide 12 percent of the total 1-hour reduction and 27 percent of the total 8-hour reduction that results from the downwind plus upwind regionwide controls. In Illinois, Indiana, and Wisconsin, the reduction in 1-hour and 8-hour exceedances due to upwind controls are larger than over Lake Michigan (i.e., 15 percent and 30 percent for 1-hour and 8-hour exceedances, respectively). The upwind controls provide nearly 50 percent of the total ppb reductions associated with the downwind plus upwind regionwide control scenario for both the 1-hour and 8-hour NAAQS.

Based on the results discussed above, EPA believes that the controls in today's rulemaking applied in upwind areas will reduce the number of 1-hour and 8-hour exceedances in downwind nonattainment areas. The analysis indicates that in downwind areas, a substantial portion of the 1-hour and 8-hour ozone reductions provided by the regionwide application of these controls are due to those controls in upwind areas.

c. Summary of Findings. The EPA has performed an air quality assessment to estimate the ozone benefits of the proposal and several alternative uniform regionwide control levels. In addition, EPA examined the overall benefits in several major downwind nonattainment areas of the application of the proposal in upwind States. The results of EPA's assessment corroborate and extend the findings presented in the SNPR. The major findings are as follows: (1) The NO_X emissions reductions associated with the proposed Statewide budgets are predicted to produce large reductions in (a) 1-hour concentrations >=125 ppb in areas which are currently nonattainment for the 1-hour NAAQS and which would likely continue to have a 1-hour nonattainment problem in the future without the SIP call budget reductions, and (b) 8-hour concentrations >=85 ppb in areas which currently violate the 8-hour NAAQS and which would likely continue to have an 8-hour ozone problem in the future without the SIP call budget reductions.

(2) The more NO_X emissions are reduced, the greater the benefits in reducing ozone concentrations. There does not appear to be any ''leveling off'' of benefits within the range of NO_X reductions associated with EPA's proposal. That is, NO_X reductions at control levels less than EPA's proposal provide fewer air quality benefits than the proposal and NO_X reduction greater than the proposal provide more air quality benefits.

(3) Any disbenefits due to the NO_X reductions associated with the budgets are expected to be very limited compared to the extent of the benefits expected from these budgets.

(4) There are likely to be benefits in major nonattainment areas due to the downwind application of controls in the proposed budgets. Reductions in ozone transport associated with the collective application of the budgets in upwind States are expected to provide substantial ozone benefits in downwind areas, beyond what is provided by the budgets applied in the downwind areas alone. Together, the downwind reductions and transport reductions from upwind controls will provide significant progress toward attainment in major nonattainment areas within the OTAG region. However, even with the most stringent control option considered, nonattainment problems requiring additional local control measures may continue in some areas currently violating the NAAQS.

V. NO_X Control Implementation and Budget Achievement Dates

A. NO_X Control Implementation Date

In the NPR, the EPA proposed to mandate NO_X emissions decreases in each affected State leading to a budget based on reductions to be achieved from both Federal and State measures. The EPA further proposed that the required SIP revisions for achieving the portion of the NO_X reduction from State measures be implemented by no later than September 2002. The EPA also requested comment on a range of compliance dates between September 2002 and September 2004.

The EPA stated that this range of compliance dates is consistent with the requirement for severe 1-hour nonattainment areas to attain the standard no later than 2005 (for severe-15 areas) or 2007 (for severe-17 areas). With respect to the 8-hour ozone standard, EPA stated that the CAA provides for attainment within 5 years of designation as nonattainment, which must occur no later than July 2000, with a possible extension of up to 10 years following designation as nonattainment. The EPA stated that the range of implementation dates—from September 2002 to September 2004—is consistent with the attainment time frames for the 8-hour standard (62 FR 60328–29). For the reasons described in Section III, below, the applicable attainment date for all affected downwind areas is ''as expeditiously as practicable,'' but no later than certain prescribed dates. In many cases, the date for achieving the upwind reductions will make the difference as to when downwind States will attain. Thus, it is appropriate for EPA to require the upwind reductions to be achieved as expeditiously as practicable. Subsection 1., below, analyzes the earliest date feasible for achieving the upwind reductions.

1. Practicability

After reviewing the comments and analyzing the feasibility of implementing the NO_X controls assumed for purposes of developing the State emissions budgets, as well as other measures which States may choose to rely on to meet the rule, the EPA is today determining that the required implementation date must be by no later than May 1, 2003. The Agency received many comments on the feasibility of installing appropriate control technology by 2003, and the succeeding paragraphs address many of the significant comments submitted on this topic.

Some commenters asserted that a compliance deadline of September 2002 is infeasible for completing the installation of the assumed NO_X controls. Some of these commenters argued that there are not enough trained workers, engineering services or materials and equipment to install NO_X controls by the September 2002 deadline. Other commenters expressed concern that utilities will not have sufficient time to install NO_X controls without causing electrical power outages; these commenters stated that such power outages would have adverse impacts on the reliability of the electricity supply. Commenters also expressed concern that retrofitting NO_X controls would require increasing the operation of less efficient units, which would increase compliance costs.

In response to these comments, the Agency has conducted a detailed examination of the feasibility of installing the NO_X controls that EPA assumed in constructing the emissions budgets for the affected States (hereinafter, the ''assumed control strategy''). See the technical support document ''Feasibility of Installing NO_X Control Technologies By May 2003,'' EPA, Office of Atmospheric Programs, September 1998. The Agency's findings are summarized below. Based on these findings, the EPA believes that the compliance date of May 1, 2003 for NO_X controls to be installed to comply with the NO_X SIP call is a feasible and reasonable deadline. The Agency is also providing some compliance flexibility to States for the 2003 and 2004 ozone seasons by establishing State compliance supplement pools as described above in Section III.F.6.

The EPA's projections for the assumed control strategy include post-combustion controls (Selective Catalytic Reduction [SCR] and Selective Noncatalytic Reduction [SNCR]) and combustion controls (e.g., low NO_X burners, overfire air, etc.)

a. Combustion Controls. In general, the implementation of combustion controls should be readily accomplished by May 1, 2003 for the following reasons. First, there is considerable experience with implementing combustion controls. Combustion control retrofits on over 230 utility boilers, accounting for over 75 GWe of capacity under the title IV NO_X program, took place within 4 years (i.e., from 1992 through 1995). Moreover, the combustion retrofits under Phase I of the Ozone Transport Commission's Memorandum of Understanding were completed in the same time frame. As a result of this experience, the sources and permitting agencies are familiar with the installation of combustion controls. This familiarity should result in relatively short time frames for completing technology installations and obtaining relevant permits.

Second, combustion controls are constructed of commonly available materials such as steel, piping, etc., and do not require reagent during operation. Therefore, the EPA does not expect delays due to material shortages to occur at sites implementing these controls.

Third, there are many vendors of combustion control technology. These vendors should have ample capacity to meet the NO_X SIP call needs because they were able to satisfy significant installation needs during the period 1992 through 1995, as mentioned above. Since then these vendors have had relatively few installation needs to fill.

Therefore, it is reasonable to expect that implementation of post-combustion controls, not combustion controls, would determine the schedule for implementing all of the projected NO_X controls.

b. Post-Combustion Controls. Tables V–1 and V–2 present the Agency projections of how many electricity generating units and industrial sources, respectively, would need to be retrofitted with post-combustion NO_X controls under the assumed control strategy.

TABLE. V–1.—ELECTRICITY GENERATING UNITS

NO_X Control	Projected No. of installations
Coal SCR	142
Coal SNCR	482
Oil/gas SNCR	15
Total	639

TABLE. V–2.—NON-ELECTRICITY GENERATING UNITS

NO_X Control	Projected No. of installations
SCR on coal-fired sources	55
SCR on oil/gas-fired sources	225
SCR on other sources	1
Total	281
SNCR on coal-fired sources	195
SNCR on oil/gas-fired sources	0
SNCR on other sources	40
Total	235

There are three basic considerations related to implementation of post-combustion controls (SCR and SNCR) by the compliance date: (1) Availability of materials and labor, (2) the time needed to implement controls at plants with single or multiple retrofit requirements, and (3) the potential for interruptions in power supply resulting from outages needed to complete installations.

The EPA examined each of these considerations. An adequate supply of off-the-shelf hardware (such as steel, piping, nozzles, pumps, soot blowers, fans, and related equipment), reagent (ammonia and urea), and labor would be available to complete implementation of post-combustion controls projected under the assumed control strategy.

However, the catalyst used in the SCR process is not an off-the-shelf item and, therefore, requires additional consideration. Based on the projections shown in the tables above, the EPA estimates that about 54,000 to 90,000 m^3 of catalyst may be needed in SCR installations. The EPA has found that currently the catalyst suppliers can supply about 43,000 to 67,000 m^3 of catalyst per year. However, of this supply about 5,000 to 8,000 m^3 of catalyst per year is needed to meet the requirements of the existing worldwide SCR installations. Based on these estimates, the EPA conservatively concludes that adequate catalyst supply should be available if SCR installations were to occur over a period of two years or more.

In addition, in comments to EPA's proposed NO_X reduction program, the Institute of Clean Air Companies (ICAC) stated that more than sufficient vendor capacity existed to supply retrofit SCR catalyst to the sources that would be controlled by SCR under the assumed control strategy.

Implementation of a NO_X control technology on a combustion unit involves conducting facility engineering review, developing control technology specifications, awarding a procurement contract, obtaining a construction permit, completing control technology design, installation, testing, and obtaining an operating permit. The EPA evaluated the amount of time potentially needed to complete these activities for a single unit retrofit and found that about 21 months would be needed to implement SCR while about 19 months would be needed to implement SNCR.

The EPA examined several particularly complicated implementation efforts to assure an accurate and realistic estimate of the time needed to install SCR and SNCR. The EPA examined the data and determined that the assumed control strategy might lead one plant to choose to install a maximum of 6 SCRs. In another instance, a different plant might choose to install a maximum of 10 SNCRs under the assumed control strategy. The estimated total time needed to complete these installations is 34 months for 6 SCR systems and 24 months for 10 SNCR systems.

Finally, the EPA examined the impact(s) that outages required for connecting NO_X post-combustion controls to EGUs could potentially have on the supply of electricity and on the cost of this rule. The EPA has found that, generally, connections between a NO_X control system and a boiler can be completed in 5 weeks or less. This connection period has been accounted for in both the single and multi-unit implementation times presented in the previous paragraph. On an EGU, the connection would have to be completed during an outage period in which the unit is not operational. The EPA's research reveals that currently, on average, about 5 weeks of planned outage hours are taken every year at an electricity generating unit. Therefore, the EPA expects that connection between a NO_X control system and such a unit would be completed during one of these planned outages.

Results of EPA's analyses reflect that, even if all of the post-combustion controls projected in Table V–1 for the EGUs were to be connected to these units in one single year, no disruption in the supply of electricity would occur. If each of these plants takes the five week outage in a single block of time, no cost increase is expected to occur. However, if a plant divides the five week outage into two or more periods, a cost increase of less than one-half of one percent may be expected. See the technical support document ''Feasibility of Installing NO_X Control technologies By May 2003,'' EPA, Office of Atmospheric Programs, September 1998.

Based on the estimated timelines for implementing NO_X controls at a plant and availability of materials and labor, the EPA estimates that the NO_X controls in the assumed control strategy (which is one available method for achieving the required NO_X reductions in each covered State) could be readily implemented by September 2002, without causing an adverse impact on the electricity supply or on the cost of compliance. The EPA bases this conclusion on its analysis that the most complex and time-consuming implementation effort—one involving 6 SCR systems—would take 34 months, and that all of the controls could be installed within this period without causing any disruptions in the supply of electricity.

Further, the EPA notes that the September 27, 1994 OTC NO_X Memorandum of Understanding (MOU) provides that large utility and nonutility NO_X sources should comply with the Phase III controls by the year 2003. The levels of control in the MOU are 75 percent or 0.15 lb/10^6 btu in the inner and outer zones of the Northeast OTR, levels comparable to the controls assumed in setting the budget for today's rulemaking. Moreover, several States in the Northeast OTR have submitted SIP revisions implementing this level of emissions reductions from NO_X sources in those States by May 1, 2003. This further supports the feasibility of the May 1, 2003 implementation date for these controls.

The EPA has determined that States would have sufficient time to implement other NO_X control measures in lieu of the boiler controls described above. For example, vehicle I/M programs have historically required no more than two years to implement, including the time needed to pass enabling State legislation and to construct the necessary emission testing facilities. The time required to implement measures to reduce VMT depends on the nature of the measure, but many VMT reduction measures require no more than one or two years to implement. State opt-ins to the RFG program have generally required less

than one year to implement. Even if the EPA were to determine that supply considerations warranted a delay in implementing the opt-in request, the delay cannot exceed two years.

States can also take advantage of the NO_X-reducing benefits that energy efficiency and renewables projects provide, many of which could be developed in less than three years and incorporated into a SIP. Examples of efficiency/renewables projects that have been accomplished within a 3-year time frame and have resulted in significant NO_X reductions include reducing boiler fuel use by utilizing waste heat, implementing short-term steam trap maintenance and inspection programs, and undertaking building upgrades using EPA's Energy Star Buildings approach.

2. Relationship to SIP Submittal Date

Under this rule, as explained in Section B. below, States are required to submit revised SIPs by September 30, 1999. Commenters have suggested that based on the requirements of this rulemaking, sources in these States would need to begin early planning of compliance strategies before the September 30, 1999 date. The EPA disagrees. The EPA's technical analysis described above indicates that if these sources begin planning and specification of controls by even as late as April 2000, then they would be able to complete control technology implementation by May 1, 2003.

3. Rationale

To assure adequate lead-time for implementation of controls, the EPA has moved the compliance deadline from the proposed date of September 2002 in the NPR to May 1, 2003. Since the ozone seasons in areas in the eastern U.S. end in the fall and begin in the spring, setting the implementation date for May 1, 2003 will provide sources 7–8 additional months for implementing control requirements while not undermining the ability of areas to attain. The additional implementation time will occur during the cooler months of the year, a time when ozone exceedances generally do not occur. Thus, with either the September 2002 implementation date or the May 1, 2003 implementation date, the 2003 ozone season would be the first to benefit from full implementation of the SIP call reductions.

Several commenters contend that EPA does not have the authority to establish the compliance date. Since section 110(a)(2)(D)(i) is silent as to the implementation schedule for measures to prevent significant contribution, the EPA disagrees that the statute prohibits the EPA from establishing an implementation date for control measures that will achieve the reductions established by the SIP call. Thus, the EPA must look to the other provisions in the CAA, the legislative history, and the specific facts of today's rule to determine whether it is reasonable for the Agency to set the implementation date for the control measures. Furthermore, for the reasons provided in this Section, the EPA believes it is necessary to use its general rulemaking authority under section 301(a) to establish the latest date for implementation through a rule in order to ensure that downwind areas attain the standard as expeditiously as practicable and that areas continue to make progress toward attaining the NAAQS. *See NRDC* v. *EPA*, 22 F.3d 1125, 1146–48 (D.C. Cir. 1994).

With respect to the facts of this particular situation, this SIP call entails a complex analysis of the interstate transport of NO_x and ozone and involves 23 jurisdictions. Although the States made significant progress through the OTAG process, they were unable to reach a final resolution on the emission reductions necessary or the schedule to achieve reductions to address upwind emissions. Thus, it would not be reasonable for EPA to leave open the issue of implementation in light of the need for downwind areas to rely on these reductions in order to demonstrate attainment by their attainment dates. See also the discussion in Section II.A.

Furthermore, EPA believes that requiring implementation of the SIP-required upwind controls, and thereby mandating those upwind reductions, by no later than May 1, 2003, is consistent with the purpose and structure of title I of the CAA. Under both section 172(a)(2), which establishes attainment dates for areas designated nonattainment for the 8-hour standard, and section 181(a), which establishes attainment dates for nonattainment areas for the 1-hour standard, areas are required to attain ''as expeditiously as practicable'' but no later than the statutorily-prescribed (for section 181(a)) or EPA-prescribed (for section 172(a)(2)) attainment dates. The implementation date of May 1, 2003 fits with both the more general requirement for areas to attain ''as expeditiously as practicable'' and the latest attainment dates that apply for purposes of the 1-hour standard and that EPA will establish for the 8-hour standard.

The overarching requirement for attainment is that areas attain ''as expeditiously as practicable.'' This requirement was established in the CAA in the 1970 Amendments and has been carried through in both the 1977 and 1990 Amendments. Thus, although Congress has provided outside attainment dates under the 1970, 1977, and 1990 Amendments, States have always been required to attain as expeditiously as practicable. Congress has furthered this concept of ensuring that emission reductions are achieved on an expeditious, yet practicable, schedule through its inclusion of other provisions in the CAA that rely on similar concepts. Most notably, under both subpart 1 and subpart 2 of part D of title I of the CAA, areas are required to make reasonable further progress toward attainment and thus are not allowed to delay implementation of all measures until the attainment year.[63] While the ROP requirements directly apply only to emission reductions that designated nonattainment areas need to achieve to address local violations of the standard, these provisions highlight congressional intent that—at a minimum—reasonably available or practicable measures should not be delayed if such measures are needed to attain the standard by the applicable attainment date. Thus, it is consistent for EPA to require upwind areas to adopt practicable control measures on a schedule that will help to ensure timely attainment of the standard in downwind areas.

In addition, the May 1, 2003 implementation date is consistent with the statutorily-prescribed ''outside'' 1-hour attainment dates for many of the areas that will benefit from the SIP call reductions.

Currently, areas designated nonattainment for the 1-hour standard have attainment dates ranging from 1996 to 2010. For those with attainment dates in the years 1996–1999, EPA is analyzing whether such areas should receive an attainment date extension due to transported emissions or whether such areas should be reclassified, or ''bumped up,'' under section 181(b)(2), to the next higher classification and therefore be subject to additional control requirements and a later attainment

[63] CAA sections 171(1) and 172(c)(2) (requiring that nonattainment area SIPs provide for reductions in emissions that may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date; 182(b)(1) and (c)(2)(B) (requiring, respectively, 15 percent reductions between 1990 and 1996 and additional 3 percent average reductions per year until the attainment date, unless, among other things, the plan includes ''all measures that can be feasibly implemented in the area, in light of technological achievability'').

date.[64] To the extent that an attainment date extension is appropriate, consistent with the general requirement of the CAA, it should be no later than the date by which the necessary reductions can practicably be achieved. Thus, it is appropriate for EPA to require upwind reductions by May 1, 2003—a date that EPA has determined can be practicably achieved—in order to allow these areas to attain as expeditiously as practicable. Additionally, there are areas with attainment dates of 2005[65] and 2007[66] that will benefit from the reductions upwind States will require in response to the SIP call. The May 1, 2003 compliance date is sensible in light of the requirement for these areas to make reasonable further progress toward attainment under section 182(c)(2)(B) and to attain as expeditiously as practicable but no later than 2005 or 2007.

The implementation date of May 1, 2003 is also consistent with the attainment date scheme for the 8-hour ozone NAAQS. The EPA is required to promulgate designations for areas under the 8-hour ozone NAAQS by July 2000. Pub. L. No. 105–178 section 6103 and CAA section 107(d)(1). In draft guidance EPA made available for comment in August 1998, the EPA indicated that most new areas that violate the 8-hour ozone NAAQS (but not the 1-hour ozone NAAQS) can achieve sufficient emissions reductions to produce one ozone season's clean air quality by the end of 2003 if EPA establishes May 1, 2003 as the compliance date for this rule.[67] The EPA suggested that these areas would also be eligible for an ozone transitional classification, provided they submit a SIP by 2000 (see the August 1998 proposed guidance). Therefore, in the proposed guidance, EPA has indicated that when the Agency reviews and approves ozone transitional area SIPs, the Agency anticipates establishing December 31, 2003 as the attainment date, for planning purposes, for almost all of the transitional areas. The EPA believes that establishing December 31, 2003 as the attainment date for these areas is consistent with the requirement of CAA section 172(a)(2)(A) that ''the attainment date for an area designated nonattainment with respect to a [NAAQS] shall be the date by which attainment can be achieved as expeditiously as practicable, but no later than 5 years from the date of designation.'' The EPA interprets this requirement to mandate that controls, either in the downwind nonattainment area or in upwind areas, should be implemented as expeditiously as practicable, when doing so would accelerate the date of attainment. For the reasons described elsewhere, the EPA believes it is practicable for States to implement the controls mandated under today's rulemaking by May 1, 2003, and that doing so would ensure that areas subject to the 8-hour NAAQS will attain the standard as expeditiously as practicable. Doing so will be consistent with the requirement that downwind nonattainment areas make reasonable further progress toward attainment.

B. Budget Achievement Date

In the NPR, the EPA stated that although it would mandate the full implementation of the required SIP controls by an earlier date, it would require the affected States to demonstrate that they will achieve their NO_X budgets as of the year 2007. The NPR explained that the 2007 date would allow EPA to make use of the substantial technical information collected by OTAG. The OTAG had selected the year 2007, had collected inventory data geared towards this date, and had generated air quality modeling information geared towards this date. The NPR further stated that the EPA had doubts that there would be significant differences in amounts of emissions and impact on ambient air quality between an earlier date and 2007, in light of the fact that during this period, emissions would generally increase somewhat as a result of growth in activities that generate emissions, but would also decrease due to continued application of federally mandated controls.

The EPA continues to believe that 2007 is an appropriate target date for the affected States to use in demonstrating whether their SIP will achieve the required emissions reductions, generally for the same reasons as expressed in the NPR. Based on the 2007 projections, States are expected to achieve their statewide emissions budgets (based on the required emissions reductions achieved by May 1, 2003) by September 30, 2007 which is the end of the ozone season.

Throughout this rulemaking process, the EPA has relied on technical data generated by OTAG geared towards the 2007 date, and it would be an ill-advised use of resources if EPA did not incorporate the emissions inventories and modeling results generated by the multi-stakeholder OTAG process, and instead developed comparable information for an earlier date. Such an effort would be time consuming and resource intensive. Furthermore, no State is disadvantaged by the requirement to demonstrate compliance with the budget later than the requirement to implement SIP controls because States may count both the growth in emissions and the reductions in emissions from Federal measures that would occur in the interim. Finally, the year 2007 is the latest attainment date under the 1-hour NAAQS for areas in States affected by today's rulemaking, i.e., the severe-17 areas of including Chicago, Milwaukee, and New York, so that this date is a sensible target date for affected States to use in projecting whether they will achieve the required emissions reductions.

VI. SIP Criteria and Emissions Reporting Requirements

A. SIP Criteria

The NPR and SNPR discussed SIP revision approval criteria and the schedule for States' submission plans for meeting statewide emission budgets in response to this SIP call under section 110(a)(2)(D). The EPA received a number of comments related to the proposed SIP approval criteria. This section summarizes these comments on key issues and presents EPA responses.

1. Schedule for SIP Revision

In the NPR, EPA proposed that each State must submit a demonstration that it will meet its assigned Statewide emission budget (including adopted rules needed to meet the emission budget) by September 30, 1999.[68] The EPA received numerous comments concerning this proposed timeframe.

Comments: The EPA received many comments on the practicality of allowing States 12 months to submit SIPs in response to this rulemaking. Some commenters articulated that some States anticipate administrative obstacles that could create problems in

[64] See Guidance on Extension of Attainment Dates for Downwind Transport Areas, Memorandum from Richard Wilson, dated July 17, 1998.

[65] Severe-15 areas, such as Baltimore and Philadelphia, as well as any Serious areas that do not receive an attainment date extension and are bumped up due to a failure to attain, will need to attain no later than 2005.

[66] Severe-17 areas, such as New York City, Philadelphia, Chicago and Milwaukee, need to attain the standard no later than 2007.

[67] ''Proposed Implementation Guidance for the Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS) and the Regional Haze Program,'' John S. Seitz, Director, Office of Air Quality Planning and Standards, to Regional Office Air Division Directors, August 18, 1998. The guidance has been made available for 30-days public comment through a Federal Register Notice of Availability (63 FR 45060, August 24, 1998). The date of the notice is the official start date for the comment period.

[68] In the NPR, EPA proposed the SIP submittal date to be within 12 months of the date of final promulgation of this rulemaking. Promulgation means signature so long as the rulemaking is made available to the public on the same day.

submitting their SIP revisions by 1999. On the other hand, many commenters expressed concern about extending the SIP submittal deadline to 18 months based on the additional adverse impact that NO_X emissions from upwind areas would have on downwind air quality if the schedule for reductions were extended. Arguing that the States would have ample time to formulate an approvable SIP, these commenters supported a 12-month SIP submission date.

Response: After considering these comments, EPA is requiring that SIP revisions be submitted within 12 months after the date of signature of this final rule. This date is appropriate in light of the fact that States which are subject to today's rulemaking will need to achieve reductions in NO_X emissions by May 1, 2003. Requiring States to submit SIP revisions within the 12-month timeframe will ensure that controls necessary to reduce these emissions will be in place on time.

The Agency believes the health risks associated with ozone pollution require the NO_X SIP call to proceed expeditiously. Delaying the SIP submission date by an additional 6 months would hinder downwind areas' efforts to improve air quality in a timely manner.

Twelve months is adequate time to submit a NO_X reduction SIP. States were involved in the OTAG for 2 years and, during that time, developed lists of feasible NO_X control strategies and compiled information about control strategy costs. This groundwork will assist States in making decisions about their NO_X reduction strategies and should expedite the SIP submittal process. Further, States developed NO_X emission inventories for modeling purposes during the OTAG process. The States, therefore, have the information for the source categories on which to focus. As a result, many elements needed for putting together a NO_X reduction strategy have already moved forward.

Since OTAG concluded in June 1997, the States have had time for internal review of data, and refinement of their emission inventories. This SIP call rulemaking provides EPA's view of a reasonable cost-effective strategy to reduce NO_X in the 23 jurisdictions. The EPA's action provides a good starting point for State NO_X reduction strategies; States can embrace the Agency's approach or use it as a basis for tailoring their own programs. If States elect to participate in EPA's model trading rule, the SIP process will be further simplified because States can adopt the entire package of recommended strategies.

Therefore, under section 110(k)(5) for the 1-hour NAAQS and section 110(a)(1) for the 8-hour NAAQS, a demonstration that each State will meet the assigned Statewide emission budget (including adopted rules needed to meet the emission budget) must be submitted to EPA in its SIP revision.

2. Approvability Criteria

In the NPR, EPA described the elements listed below that States must include in their ozone transport SIP revisions (62 FR 60365).

The EPA proposed that the approvability criteria for transport SIP submissions appear in 40 CFR 51.121. Most of the criteria are substantially identical to those that already apply to attainment SIPs, for example, a description of control measures that the State intends to use.

The SNPR proposed additional SIP approvability criteria for control strategies that will help States meet their NO_X budgets (63 FR 25912–25914). The legal authority for these additional approvability criteria was articulated in the SNPR (63 FR 25913, footnote 5). The EPA received numerous comments related to these additional criteria.

a. Source Categories Subject to Additional Approvability Criteria. In the SNPR, EPA proposed that, if a State should choose to meet this SIP call by regulating NO_X sources (boilers, turbines and combined cycle units) serving electric generators with a nameplate capacity greater than 25 MWe and boilers with a maximum design heat input greater than 250 mmBtu/hr, the State would need to frame these control measures and monitoring requirements as either: (1) Mass emissions limits, (2) emissions rates assuming maximum utilization, or (3) an alternative approach, as described more fully in the next subsection. The EPA solicited comment on the reasonableness of extending these approvability criteria to additional NO_X sources. The EPA explained that the ability to comply with a mass emissions limit using reasonably available technology and to accurately and consistently monitor mass emissions were key factors for coverage by the additional approval criteria.

In the SNPR (63 FR 25923), EPA also outlined criteria for sources to participate in the NO_X Budget Trading Program. The EPA explained that the ability to accurately and consistently monitor NO_X mass emissions was a key factor for participation in the trading program. The EPA proposed that the trading program include the same sources listed above as well as other large steam-producing units (units above 250 mmBtu/hr) which would include combustion turbines or combined cycle systems, as well as boilers that do not serve electrical generators.

The EPA now believes that the SIP approvability criteria should cover all NO_X sources serving electric generators with a nameplate capacity greater than 25 Mwe and all boilers, combustion turbines and combined cycle units with a maximum design heat input greater than 250 mmBtu/hr. The Agency believes this group is appropriate because of the considerations set forth in the SNPR. For example, all of these sources can comply with a mass emissions limit using reasonably available technology and can accurately and consistently monitor mass emissions. In addition, EPA believes that mass emissions limits remain highly cost-effective for these sources, even when future growth is accommodated within the limits. Based on the analyses in the RIA, EPA projects that even if actual growth for this group of sources exceeds EPA's projected growth by over one-third, mass emission limits would remain highly cost-effective according to the criteria used for this rule. Therefore, in this final rule, EPA is requiring that the additional SIP approvability criteria outlined below apply to States that select regulatory requirements covering boilers, turbines and combined cycle units that are greater than 250 mmBtu/hr—regardless of whether they are connected to an electrical generator of any size—or to boilers, turbines and combined cycle units that serve electrical generators greater than 25 Mwe, regardless of the heat input capacity of the unit.

b. Pollution Abatement Requirements. The EPA proposed requiring States that choose to meet their budget through control requirements for such large NO_X sources to express the requirements in one of three ways: (1) In terms of mass emissions, which would limit total emissions from a source or group of sources; (2) in terms of emissions rates that when multiplied by the affected source's maximum operating capacity would meet the tonnage component of the emissions budget for this source or for these sources; or (3) an alternative approach for expressing regulatory requirements, provided the State demonstrates to EPA that its alternative provides assurance equivalent to or greater than option (1) or (2) that seasonal emissions budgets will be attained and maintained.

Comments: Seven commenters generally support the approach of

expressing regulatory requirements as mass emissions limitations. One of these commenters does not object to a mass limit provided that the limit covers a time period no shorter than the ozone season, and that sources should be allowed to maintain flexibility within the ozone season. Several commenters generally support a rate-based limit, one of which noted that EPA's own rule-effectiveness studies show that rate-based limits can be very effective. Another commenter opposes the use of mass emission limits and urges EPA not to require monitoring procedures and data generation that are inconsistent with current requirements under the Acid Rain Program (namely the use of an emissions rate limit). Other commenters believe that States, not EPA, should decide the form of the limit. Finally, one commenter recommends both a cap on mass emissions and an emissions rate limitation.

Response: As explained in the SNPR (63 FR 25912), EPA believes that regulatory requirements in the form of a maximum level of mass emissions for a source or group of sources have the greatest likelihood of achieving and maintaining the Statewide NO_X emissions budget. As with the entire SIP call, the new approvability criteria are designed to apply to total emissions throughout the ozone season and are not intended to apply to shorter time periods within the ozone season. This, however, does not limit a State's ability to require emissions limitations for a shorter time period if deemed necessary in a specific ozone attainment plan.

Although several commenters supported using rate-based limits, they did not provide evidence to refute EPA's belief that the proposed criteria would provide superior environmental results over rate-based limits alone. The EPA maintains that the proposed criteria provide the greatest assurance to downwind States that the air emissions from upwind States will be effectively managed over time. Regarding EPA's rule effectiveness studies, they do confirm that rate-based limits can be effective in achieving a specific emissions rate. However, the studies do not address the emissions variations that may take place at the regulated sources due to changes in utilization under rate-based limits, including the potential for significant increases, particularly in light of utility restructuring. Under the proposed criteria, mass emissions from the regulated sources would stay within a fixed tonnage amount despite shifts in utilization of the sources. Finally, EPA does not believe that the rate-based NO_X emissions limits prescribed under title IV of the CAA are relevant to this rulemaking. Since the time of the 1990 CAA amendments, EPA, States, local governments, and the regulated community have all gained considerable experience with regulatory requirements expressed in terms of mass emissions limitations which demonstrates their feasibility and high degree of effectiveness. For these reasons and the reasons described in the SNPR, EPA is including these additional SIP approvability criteria in today's action.

c. Monitoring Requirements. The Agency proposed requiring these large combustion NO_X sources to use continuous emissions monitoring systems (CEMS), and requested comment on requiring the use of the NO_X mass monitoring provisions in 40 CFR part 75 to demonstrate compliance with applicable emissions control requirements.

Comments: Some commenters generally support the use of CEMS for large combustion sources. One commenter noted that while the preamble and the proposed revisions to part 51 would require CEMS on all sources, the requirements set forth in subpart H of part 75 allow for non-CEMS monitoring options for units that are infrequently operated or that have low mass emissions of NO_X.

Response: The EPA believes that programs like the Acid Rain Program and RECLAIM have shown that CEMS can be effectively used on boilers, turbines and combined cycle units to demonstrate compliance with a mass emissions limitation. The Agency also believes that, while CEMS provide more consistent and accurate data, allowing non-CEMS monitoring options for low-emitting or infrequently operated units greatly increases the cost effectiveness of these requirements without significantly jeopardizing the quality of the data used to ensure compliance with the requirements of the SIP call. Therefore, EPA agrees with the commenter that the part 75 provisions allowing non-CEMS monitoring options for low-emitting or infrequently operated units are reasonable. The EPA is requiring the use of the NO_X mass monitoring provisions in 40 CFR part 75 in the final SIP approval criteria.

d. Approvability of Trading Program. In the SNPR, EPA expressed its intent to approve the portion of any State's SIP submission that adopts the model rule, provided: (1) The State has the legal authority to adopt the model rule and implement its responsibilities under the model rule, and (2) the SIP submission accurately reflects the NO_X emissions reductions to be expected from the State's adoption of the model rule (63 FR 25913). The EPA also stated that a State could develop State regulations in accordance with the model rule. In Section VII.C.3 of this preamble, the Agency clarifies the extent to which a State's regulations may deviate from the model rule and still receive streamlined approval. Regulations providing for streamlined approval appear in paragraph (p) of 40 CFR 51.121.

3. Sanctions

In the preamble to the proposed rule, EPA explained the mandatory sanctions process that is established in section 179(a) and (b) of the CAA (62 FR 60368). This process is triggered upon a finding by EPA that a State failed to submit a SIP in response to a SIP call. One sanction—either increased offsets for new or modified major stationary sources or restrictions on highway funding—is imposed 18 months after the finding is made and the second sanction 6 months later. The EPA requested comment on the order in which these two sanctions should be imposed in response to the SIP call. The EPA further requested comment on whether EPA should use its discretion under section 110(m) to expand the geographic scope of the highway funding sanction.

Comment: One commenter specifically commented on the order in which the two sanctions should be imposed. The commenter recommended that the offset sanctions apply first—18 months after the finding—and the restrictions on highway funding apply second—6 months after the offset sanction.

Response: This is the approach that EPA took in its final rule addressing the sequence of mandatory sanctions for State failures to respond to submittals required under part D of title I of the CAA. For the reasons stated in the preamble to that final rule (59 FR 39832), EPA is providing in the final SIP call rule that the offset sanction will apply 18 months after EPA makes a finding and the restrictions on highway funding will apply 6 months after the offset sanction applies.

Comments: Several commenters generally commented that EPA should be fair and equitable in making findings and imposing sanctions. Other commenters suggested that to be fair and equitable—and because the sanctions are an important backstop to ensuring emission reduction are achieved—EPA should apply the same or similar sanctions to upwind attainment areas as to nonattainment areas that do not comply with the SIP call. Recognizing that the highway

sanction can apply to attainment areas only under section 110(m), one commenter encouraged EPA to develop a mandatory clock for the imposition of discretionary sanctions. Finally, one commenter stated that the nature and timing of sanctions should reflect a State's particular circumstances; however, this commenter also emphasized the need for parties to know the impact of sanctions ahead of time so that they can effectively react.

Response: The EPA agrees that sanctions are an important backstop and plans to make timely findings where States fail to submit or submit an incomplete or disapprovable SIP in response to the SIP call. The EPA agrees that areas should be treated fairly and plans to ensure that areas with similar circumstances are not treated differently in making findings of failure to submit and incompleteness. However, at this time, EPA is not prepared to determine whether and when it is appropriate to use the discretion provided under section 110(m) in imposing sanctions. The EPA believes it is not appropriate to make a general determination regarding the application of sanctions under section 110(m); rather if circumstances warrant the use of sanctions under section 110(m), EPA may take future rulemaking action to use that authority. Before EPA uses the section 110(m) authority, EPA must go through notice-and-comment rulemaking, which should provide States adequate certainty about EPA's intentions on the use of discretionary sanctions and time to respond to any action that EPA may take.

Comment: One commenter suggested that the timeframes for the imposition of sanctions are too short and will undermine States' efforts to comply with the SIP call. In addition, the commenter states that the imposition of sanctions serves no useful purpose in light of EPA's intent to promulgate a FIP.

Response: The EPA did not propose imposing sanctions more expeditiously than the timeframes mandated by the CAA. If EPA makes a finding of failure to submit or incompleteness shortly after the SIP is due, the State will have 18 months in which to make a submission that EPA determines is complete before the first sanction would be imposed. Thus, the statute provides sufficient additional time for the State to correct the problem before any sanction would apply. Under the statute, sanctions apply independently of EPA's obligation to promulgate a FIP. Congress recognized that the most efficient and effective programs are those operated by the State; thus, the CAA provides for the continued imposition of sanctions as a means to encourage States to adopt a program to replace the FIP.

Comment: One commenter opposes restrictions on highway funding imposed by any highway sanction in nonattainment areas and especially Statewide.

Response: Under section 179(a) and (b), the highway funding sanction is one of two sanctions that must be imposed due to a continuing failure of a State to adopt a SIP program, including a SIP in response to a SIP call. Under section 179(b), the highway funding sanction can only apply in a nonattainment area. However, under the discretionary sanctions provision in section 110(m), EPA may impose the highway funding Statewide. (See 59 FR 1476, 1479–80 for a more detailed discussion.) The EPA would undertake notice-and-comment rulemaking before imposing sanctions beyond the nonattainment area pursuant to section 110(m).

Comments: Finally, several commenters recommended that EPA not sanction serious areas for failing to demonstrate attainment by 1999 where those areas are affected by transported emissions that will not be controlled until after the 1999 attainment date.

Response: The EPA is not addressing in this rulemaking the process for imposing sanctions for areas that fail to submit or submit incomplete or unapprovable attainment demonstrations. The EPA recently issued a policy memorandum explaining how it anticipates addressing transport for serious areas through rulemaking actions on submitted attainment demonstrations. See memorandum from Richard D. Wilson, EPA Acting Assistant Administrator, to EPA Regional Administrators, dated July 16, 1998, ''Extension of Attainment Dates for Downwind Transport Areas.''

In the preamble to the proposed rule, EPA indicated that if an area fails to implement an approved SIP, the Agency can make a finding that triggers the sanctions clock but does not trigger an obligation to promulgate a FIP. Compare sections 179(a)(1) and 110(c)(1). One commenter noted that EPA should take a forceful role in assuring implementation. Implementation of control measures to achieve the reductions required under the NO_X SIP call is crucial in moving all areas to attainment of the ozone standards. The EPA intends to make findings of failure to implement where the circumstances warrant such a finding.

4. FIPs

Comment: The EPA received several comments supporting the approach outlined in the NPR in which EPA would propose a FIP at the same time as taking final action on the SIP call. The comments noted that the FIPs may be necessary to enforce the SIP call budgets and to assure fair treatment of complying States and industry as compared to States that are not responsive to the SIP call. In addition, many comments were submitted urging EPA to delay proposal of FIPs until (1) after the States have had time to respond to the SIP call, (2) the need for the FIP is established, or (3) up to 2 years after the final SIP call.

Response: Also signed today is a separate notice titled ''Federal Implementation Plans to Reduce the Regional Transport of Ozone,'' EPA is proposing FIPs for each of the jurisdictions affected by the final SIP call rulemaking. While EPA will have a non-discretionary duty to promulgate a FIP within 2 years of a finding that a State has failed to submit a complete SIP, EPA agrees with certain commenters that the timing of the FIP proposal should allow for promulgation in time to require NO_X emissions reductions by sources at about the same time in States that comply with the SIP call and States that do not. Under a delayed FIP proposal approach, sources in the non-complying States might experience an unfair competitive advantage over sources in States which elected to reduce their NO_X emissions and reduce interstate transport of ozone and ozone precursors in an earlier timeframe, consistent with the SIP call rulemaking. More importantly, delaying the FIP proposal would potentially delay reductions of ozone pollution and NO_X emissions in any non-complying State which would unnecessarily jeopardize attainment and public health and welfare. Therefore, proposing a FIP today will ensure that EPA can promulgate a FIP very shortly after the time the SIPs are due, in the event of any State's failure to comply with today's final rule.

B. Emissions Reporting Requirements for States

As stated in the November 7, 1997 NPR and the May 11, 1998 SNPR, the EPA believes it is essential that compliance with the regional control strategy be verified. Tracking emissions is the principal mechanism to ensure compliance with the SIP call and to assure the downwind affected States

and EPA that the ozone transport problem is being mitigated.[69]

1. Use of Inventory Data

If tracking and periodic reports indicate that a State is not implementing all of its NO_X control measures beginning on May 1, 2003 or is off track to meet its required reductions by September 30, 2007, EPA will work with the State to determine the reasons for noncompliance and what course of remedial action is needed. The EPA will expect the State to submit a plan showing what steps it will take to correct the problems. Noncompliance with the NO_X transport SIP call may lead EPA to make a finding of failure to implement the SIP and potentially to implement sanctions, if the State does not take corrective action within a specified time period.

The EPA will use 2007 data to assess how each State's SIP actually performed in meeting the statewide NO_X emissions budget.

2. Response to Comments

The EPA proposed reporting requirements in the May 11, 1998 SNPR. That proposal elicited several comments during the public comment period. Some of these comments resulted in changes to the final reporting requirements.

Comment: One commenter asked that the EPA review the need for triennial collection of annual (i.e for the full year) emissions data for uncontrolled sources, as compared to collection of only ozone season data for uncontrolled sources.

Response: The EPA has reviewed the need for reporting of full year emissions (as opposed to only ozone season emissions), and has revised the final rule to remove a requirement that full year emissions be reported. In the final rule, only ozone season emissions must be reported in the annual, triennial and 2007 reports. This NO_X SIP call is aimed at controlling transport of emissions during the ozone season and reporting of full year emission for the purposes of this SIP call is not necessary.

Comment: One commenter said that EPA should evaluate the reporting burden to entities other than the 22 States and the District of Columbia. These entities are likely to include owners/operators of facilities that will be required to report emissions data to States as part of this information collection. Another commenter said EPA should address the additional resource burden on States and facilities required to report.

Response: Since the emissions reporting rule does not place requirements directly on any sources but only on the 23 jurisdictions which receive the SIP call, the EPA is under no legal obligation to evaluate the indirect burdens on sources that may result from the promulgation of this rule. However, based on EPA's assumed control strategy, EPA has performed an analysis of costs which could be incurred by facilities if States require facilities analyzed in EPA's assumed control strategy to report information to aid States in complying with the rule. This cost information includes both capital costs for monitoring equipment, such as continuous emission monitors, and labor costs for testing. These costs are included in the RIA for this rule which is located in the docket for the rulemaking (docket no. A–96–56).

Comment: One commenter is concerned that the definition of point and area sources does not coincide with the definition of smaller point sources included in the inventory, nor with the definition of major sources in ozone nonattainment areas where the threshold is either 25 or 50 tons per year. Another commenter stated that the definition of ''point source'' should reach at least down to the 50 ton per year level, if not lower. This commenter also said that, for consistency, EPA should have a single definition of ''point source'' for the purpose of this rule.

Response: All sources with NO_X emissions equal to or greater than 100 tons per year will remain point sources. However, the EPA has revised its definition of point source for this final rule's reporting requirements to allow States the option of specifying a smaller threshold than 100 tons/year of NO_X for defining point source. When a State chooses this option, non-mobile sources smaller than the State-defined threshold would be area sources in that State. This allows States to tailor their definition of point source to maintain consistency with their own current requirements.

In the proposal, the EPA specifically solicited comments on whether the State reporting time for source emissions should be shortened to no later than 6 or 9 months after the end of the calendar year for which the data are collected. This would allow corrective actions, if needed, to be taken prior to the next ozone season. The EPA also solicited comments on whether different reporting schedules should be established for the different source categories, so that the data which can be obtained more readily would be submitted sooner. The EPA has received several comments on these topics, suggesting a variety of reporting times.

Comment: A State recommended that since the performance of electric generating facilities is known promptly, EPA should shorten the reporting time to no later than 4 to 6 months after the end of the ozone season for which the data are collected. The comment did not specify whether this reporting period , which is shorter than the proposed 12 months, would apply only to electric generating facilities or should apply to all NO_X emitting sources. Another State said the point source emissions reporting period can be shortened to 9 months. Other commenters favored a 12 month or more reporting period. Several commenters did not believe that 12 months after the end of the calendar year is a reasonable time to submit reports and suggested periods ranging from 18 to 24 months. Some commenters thought the reporting time for area and mobile sources must be longer than for point sources; one commenter thought the reporting time for all source types should be uniform.

Response: Many of the emissions from large electric generating facilities would be reported directly to EPA more rapidly than 12 months, if States elect to adopt the model trading program; however, the EPA continues to believe that 12 months from the end of the calendar year for which the data is collected is a reasonable time to require a State to report all emissions from all types of sources. This 12 month period is supported by the comments which say that 12 months, or even less in some situations, is a sufficient reporting time. The EPA believes that States can report emissions from area and mobile sources, as well as stationary sources, within the 12 month period. The uniform 12 month reporting period for all source types was chosen to simplify reporting requirements. However, a State has the option of collecting emissions from particular sectors more rapidly if it wishes. Therefore in the final rule, the EPA is requiring that States submit the required annual and triennial emissions inventory reports no later than 12 months after the end of the calendar year for which the data are collected. Because downwind nonattainment areas will be relying on the upwind NO_X reductions to assist them in reaching attainment by the required dates, EPA believes it is important that data be submitted as soon as practicable to verify that the necessary emissions reductions are being achieved. Early reports will allow States to more quickly respond to implementation problems detected by the reports. States should formally notify the appropriate EPA

[69] Legal authority for the reporting requirements was articulated in the supplemental notice of proposed rulemaking (63 FR 25915–6).