

April 28, 1998

FACT SHEET
PROPOSED SUPPLEMENTAL RULE FOR REDUCING REGIONAL
TRANSPORT
OF GROUND-LEVEL OZONE (SMOG)

TODAY'S ACTION:

The Environmental Protection Agency (EPA) is today signing a supplemental notice to augment the Agency's November 7, 1997 proposal requiring 22 states and the District of Columbia to submit State implementation plans addressing the regional transport of ozone, the main component of smog.

When implemented, these State plans will decrease the transport of ozone across State boundaries in the eastern half of the United States by reducing emissions of nitrogen oxides (a precursor to ozone formation known as NO_x).

Today's action supplements the EPA's Notice of Proposed Rulemaking published in the Federal Register on November 7, 1997 (62 FR-60317). [The November proposal is commonly known as the NO_x SIP call.] This Supplemental proposal includes:

- ◆ **Model cap-and-trade program** -- a program jointly administered by participating states and the EPA to cost effectively reduce nitrogen oxide (NO_x) emissions from certain stationary sources,
- ◆ **Revised statewide NO_x emission budgets and cost analysis**-- updates to the original budgets and underlying costs of controls,
- ◆ **Air quality analyses of the proposed statewide emission budgets** -- computer modeling that forecasts how the proposed NO_x budgets will improve air quality,
- ◆ **State reporting requirements** -- the frequency and methods that States would use to report their compliance with the NO_x SIP call,
- ◆ **Proposed revision to the acid rain NO_x program** -- the relationship of the EPA's acid rain requirements of the Clean Air Act to NO_x cap-and-trade programs generally
- ◆ **Approvability criteria** -- what an affected State would need to include in a State implementation plan (SIP) for EPA approval. A SIP is a set of state rules, required under the Clean Air Act, to control air pollution.

The EPA intends to finalize the November proposal and this supplement as one action in the September 1998.

Neither the November 1997 proposal nor today's supplemental proposal mandates which sources must reduce air pollution. The Agency, however, has calculated that reducing NO_x from utilities and large non-utility point sources is one cost-effective strategy available to States.

The States that will be subject to this action are:

Alabama, Connecticut, District of Columbia, Delaware, Georgia, Illinois, Indiana, Kentucky, Massachusetts, Maryland, Michigan, Missouri, North Carolina, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, Wisconsin, and West Virginia.

HIGHLIGHTS OF THE SUPPLEMENTAL NOTICE

Cap and Trade Program

In this Supplemental proposal, the EPA has developed a model market-based "cap-and-trade" program that the EPA proposes to implement jointly with participating States. The program is designed to achieve and maintain a NO_x emissions budget consistent with the NO_x SIP call for certain combustion sources.

States can voluntarily choose to participate in the trading program by adopting the model rule presented in this Supplemental proposal. Adoption of the model rule is a fully approvable control strategy for achieving emissions reductions required under the proposed NO_x SIP call. The trading program builds upon the Ozone Transport Commission's NO_x Budget Program and recommendations from OTAG, as well as two public workshops held by the EPA in November and December of 1997. The trading program employs a cap on total emissions to ensure achievement of the required reductions, while the market-based system provides flexibility and cost effectiveness.

Facilities in States choosing to adopt this proposed cap-and-trade program, and which reduce NO_x emissions in greater amounts than required, would be able to sell their excess NO_x emission allowances to those facilities in the program that cannot reduce emissions as quickly or cost-effectively. In administration of the trading program, the EPA would be responsible for managing the emissions data and market functions, as well as reconciling monitored emissions with emission allowances at the end of each ozone season. States choosing to join the trading program would be responsible for promulgating the supporting State regulations,

submitting allocations of NOx emission allowances to the EPA, and enforcing the program's requirements.

Air Quality Analyses

In the November 1997 proposed NOx SIP call, the EPA proposed statewide budgets for nitrogen oxide air pollutants. These proposed budgets incorporate cost effectiveness, growth, and flexibility for States to choose the best control strategy for their area. Today's Supplemental notice provides a modeling analysis which shows how these NOx budgets will improve air quality in the eastern United States.

Revised NOx Budgets

This Supplemental proposal revises and updates the NOx budgets proposed in November based on comments from States and the public. Specifically, the Agency corrected the budgets for electric generation by adding some sources that were omitted in the November proposal. In addition, the EPA adjusted electric generation growth factors based on updated information; this adjustment resulted in a moderately increased growth rate in all of the affected States except for District of Columbia which remained the same.

In calculating the NOx budgets for the region, the EPA selected the proposed levels primarily by considering the cost-effectiveness of controls at the source (i.e., the control cost per ton of NOx reduced for each type of source). The proposed budgets were calculated based on what the EPA considers to be cost-effective emissions reductions and were developed to provide room for growth. The EPA continues to be interested in receiving comments on alternative approaches to developing emission budgets.

Today's Supplemental notice also proposes an alternative approach for calculating each State's NOx budget. Under this approach, the electricity generation component (i.e., 563,784 tons of NOx) of the regionwide budget would be apportioned among the States based on total electricity generation, not only fossil-fuel generation.

Reporting Requirements

For those sources that States select to meet the statewide NOx budgets, States will be required to submit emissions information to the EPA annually. For certain sources, States will also have the option of using NOx emissions data submitted

directly to the EPA. Tracking emissions is the principal mechanism to ensure compliance with the NOx budgets. As such, reporting assures affected downwind States and the EPA that the ozone transport problem is being mitigated.

The EPA is also proposing that States develop and submit comprehensive State-wide ozone season NOx inventories, including all NOx sources, controlled and uncontrolled, every 3 years starting with data for the year 2003. A special comprehensive inventory of all NOx sources is also being proposed for the year 2007.

Approvability Criteria

The EPA intends to make the “completeness” determinations on ozone transport SIP submittals expeditiously, and propose and promulgate FIPs as necessary.

The Agency is proposing additional SIP approvability criteria for States to use in demonstrating how they will comply with their NOx budgets by 2007. For example, States can choose one of three ways for requiring large combustion sources to meet their budgets:

- Set mass emission limits for each source the aggregate being equal to or less than the budget ;
- Set emissions rate for each source that when multiplied by the maximum capacity for each source, will in aggregate be equal to or less than the budget; or
- Use an alternative method providing equivalent assurance that the emissions budget will be met.

The EPA will perform streamlined approval for ozone transport SIPs that adopt the model rule for the NOx Budget Trading Program being proposed in this Supplemental notice.

The EPA is considering allowing States to use an optional alternative offset pool approach for meeting NOx budgets to account for growth of new sources in the future.

WHAT ARE THE HEALTH AND ENVIRONMENTAL BENEFITS OF REDUCING EMISSIONS OF NO_x ?

The proposal would reduce total emissions of nitrogen oxides by 35 percent in the affected 22 states and the District of Columbia. These reductions would reduce the regional transport of nitrogen oxides which, in turn, would reduce the regional transport of ozone. These reductions would also reduce the deposition of nitrogen oxides.

Reducing NO_x will significantly reduce ground-level ozone across the eastern U.S. Ozone is not emitted directly into the atmosphere. It is formed when emissions of nitrogen oxides and volatile organic compounds react in the presence of sunlight. While beneficial in the upper atmosphere, ozone in the lower atmosphere can cause a variety of health problems because it damages lung tissue, reduces lung function, and adversely sensitizes the lungs to other irritants.

Children, and especially asthmatic children, are at special risk for adverse health effects from the dangers of ozone pollution. Children playing and exercising outside in the summertime, the season when concentrations of ground-level ozone are the greatest, may suffer from coughing, decreased lung function, and have trouble catching their breath.

Asthmatic children and adults are much more likely to have asthma attacks - or have more severe attacks - when ozone levels in the air are high. Medical studies have shown that ozone can aggravate asthma, causing more asthma attacks, increased use of medication, more medical treatment and more visits to hospital emergency rooms.

Ground-level ozone also interferes with the ability of plants to produce and store food making them more susceptible to disease, insect attack, and other pollutants. Ground-level ozone has been shown to reduce agricultural yields for many economically important crops (e.g., soybeans, kidney beans, wheat, cotton).

Air pollution accounts for up to one third of total nitrogen loadings into the Chesapeake Bay. These loadings accelerate "eutrophication" -- an over-enrichment of the eco-system which results in significant oxygen depletion, die-back of underwater plants, and reduced populations of fish and shellfish. Eutrophication is a significant and widespread problem in the

nation's Atlantic and Gulf of Mexico coastal waters, in estuaries and in some freshwater lakes.

Excessive nitrogen from air pollution can result in the acidification of lakes, streams and soils. Nitrates can leach into surface waters, accelerating the process of long-term chronic acidification.

Nitrogen oxides also contribute to airborne particulate matter, regional haze problems and global warming.

***Timeline for the Proposed Regional Ozone Transport Rulemaking
(pending final decision)***

- ◆ May 1995 -- June 1997 37 eastern states form Ozone Transport Assessment Group (OTAG) and analyze regional ozone pollution in the East
- ◆ June 1997 OTAG recommends that the EPA take actions to reduce regional ozone transport
- ◆ October 1997 EPA acts on OTAG recommendations and proposes regional reductions and rulemaking through Section 110 of the Clean Air Act (Notice published on November 7, 1997)
- ◆ April 1998 EPA publishes supplemental notice of proposed rulemaking
- ◆ September 1998 EPA issues final rule on regional reductions after taking public comment
- ◆ September 1999 States submit plans to the EPA in response to EPA's ozone transport SIP call
- ◆ September 2002 States implement controls to achieve their NO_x budgets
- ◆ September 2007 States demonstrate compliance with their NO_x budgets

NEXT STEPS

The EPA is seeking public comment on this Supplemental proposal prior to issuing a final rule.

A public hearing is scheduled for May 29 to discuss the issues raised by the Supplemental proposal. The location will be announced in the Federal Register.

The Agency is also reopening the public comment period for subregional modeling and other technical analysis for which the EPA requested comment. The EPA expects to issue the final rule in September 1998.

BACKGROUND

Ground-level ozone tends to be a problem over broad regional areas, particularly in the eastern United States, where it is transported by the wind. When emitted, NO_x reacts in the atmosphere to form compounds that contribute to the formation of ozone. These compounds, as well as ozone itself, can travel hundreds of miles across state boundaries to affect public health in areas far from the source of the pollution. Thus, cities or areas with "clean" air, those that meet or attain the national air quality standards for ozone, may be contributing to a downwind city's ozone problem because of transport.

The Clean Air Act requires that a SIP contain provisions to prevent a State's facilities or sources from contributing significantly to air pollution problems "downwind," specifically in those areas that fail to meet the national air quality standards for ozone (known as "nonattainment areas").

On November 7, 1997, the EPA proposed to require 22 states and the District of Columbia to submit State implementation plans that address the regional transport of ground-level ozone, the main component of smog. By improving air quality and reducing emissions of NO_x, the actions directed by these plans will decrease the transport of ozone across State boundaries in the eastern half of the United States.

Ground-level ozone, or smog, is formed when NO_x (emitted from automobiles, power plants, and other sources) and volatile organic compounds (emitted from automobiles, factories, as well as smaller sources like paints and coatings) "bake" in the summer heat resulting in health problems at ground level. Exposure to smog can cause serious respiratory illness, damage lung tissue, and cause significant declines in agricultural crop yield.

Through a 2-year effort known as the Ozone Transport Assessment Group (OTAG), the EPA worked in partnership with the 37 easternmost States and

the District of Columbia, industry representatives, and environmental groups to address ozone transport. From May 1995 to June 1997, the OTAG held meetings to identify and evaluate flexible and cost-effective strategies for reducing long-range transport of ozone and ozone precursors. This multi-year collaboration resulted in the most comprehensive analysis of ozone transport ever conducted.

In June 1997, the OTAG states voted 32-5 in favor of a strategy to reduce NO_x emissions from utilities and other major sources. Reductions ranged from those currently required by the Clean Air Act, up to an 85% reduction in emissions rate (or .15/mmBTU, whichever is less stringent) from 1990 utility levels in a number of states in the OTAG region.

The OTAG also voted to continue development of market-based programs for NO_x emissions that could be used as the basis for multi-state emission trading programs. The EPA believes emission trading will ensure that reductions are made in a common sense, cost effective, and flexible manner.

States that participated in OTAG but are not subject to the requirements of the EPA's November 7, 1997 proposed NO_x SIP call rule are:

Arkansas, Florida, Iowa, Kansas, Louisiana, Maine, Minnesota, Mississippi, North Dakota, Nebraska, New Hampshire, Oklahoma, South Dakota, Texas, Vermont

FOR MORE INFORMATION

Interested parties can download this proposal from the EPA's web site on the Internet at the following address: (<http://www.epa.gov/airlinks>). Information about the OTAG process can also be found on the Internet at: (<http://www.epa.gov/ttn/otag>). For further information about the proposal, contact Kimber Scavo of the EPA's Office of Air Quality Planning and Standards at (919) 541-3354.

The EPA's Office of Air and Radiation's homepage on the Internet contains a wide range of information many air pollution programs and issues. The Office of Air and Radiation's home page address is: (<http://www.epa.gov/oar/>).