

## Clean Air bill mixes new limits with R&D

In the waning hours of the 101st Congress, lawmakers finished writing an 868-page blueprint for overhauling the U.S. attack on air pollution. The bill, having passed both houses, now awaits the President's expected signature.

The new legislation, some 10 years in the making, promises not only to strengthen existing federal controls on air pollutants, but also to dramatically increase the breadth of pollutants and polluters subject to regulation. Its congressional architects also included provisions to revive a major program for acid rain research and to launch a host of new antipollution research initiatives.

In broad outline, the new amendments to the Clean Air Act of 1970 resemble measures proposed by President Bush last year (SN: 6/17/89, p.375). The primary acid rain initiative, for example, requires a reduction of at least 10 million tons in sulfur dioxide emissions from fossil-fuel burning — roughly a halving of the levels emitted in 1980. The new rules also require emissions of nitrogen oxides to drop by roughly 2 million tons per year, an annual reduction of about 10 percent from the 1980 baseline of 20.4 million tons.

A number of new controls, including stricter tailpipe-emissions standards, take aim at smog. Depending on the severity of regional smog problems, locales exceeding the federal smog standard may also have to conduct more vehicle-emissions monitoring, require installation of vapor-recovery nozzles at gas pumps and force the sale of cleaner-burning fuels.

Congress translated the President's call for a major reduction in the carcinogenicity of urban air into a complex series of new regulatory responsibilities for EPA. Under the existing Clean Air Act, EPA regulates the releases of only seven toxic materials (asbestos, beryllium, mercury, vinyl chloride, arsenic, radionuclides and benzene). The new amendments add 182 "toxics" to the list of chemicals requiring EPA regulation.

**CFCs:** The new legislation seeks to accelerate and strengthen controls on chemicals that destroy ozone in the stratosphere, going beyond measures now required under the revised Montreal Protocol (SN: 7/7/90, p.6). While the year 2000 deadline for phasing out the five most destructive chlorofluorocarbons (CFCs), three halons and carbon tetrachloride remains unchanged, the revised Clean Air Act speeds a phaseout of methyl chloroform production by three years, to 2002. And though the Montreal Protocol encourages a phaseout of hydrochlorofluorocarbons (HCFCs) — expected to serve as initial substitutes for CFCs in many refrigerant applications — the pending law would require freezing

HCFC production levels by 2015 and *ban* HCFC production 15 years later.

The revised act also exceeds the Montreal Protocol by regulating the management of existing ozone-depleting chemicals. For instance, EPA must issue regulations for recycling and disposing of CFCs in appliances and industrial refrigerators by 1992, and in all other uses within four years of the law's enactment. Other new provisions would outlaw the venting of ozone-depleting chemicals during appliance repair, service and disposal, beginning in 1992.

**NAPAP:** Many researchers thought the administration acted prematurely in ending the 10-year National Acid Precipitation Assessment Program (NAPAP) this past Oct. 1 after the program had conducted research for only about eight years (SN: 9/15/90, p.165). Congress apparently shared that view, because it ordered that NAPAP "shall be continued," with some modifications.

In particular, the new amendments require that NAPAP continue, and perhaps expand, its monitoring of key pollutants and sensitive ecosystems "to ensure the availability and quality of data and methodologies" needed for evaluating the effectiveness of the pending law's acid rain controls. For example, the amendments call for NAPAP to maintain a National Acid Lakes Registry for tracking conditions within a representative sample of acid-prone lakes.

**Chemical accidents:** The new legislation directs EPA to identify at least 100 "hazardous" substances needing regulation and then to write accident-prevention regulations, which may call for such measures as monitoring pollutants, training workers or installing vapor-recovery systems.

It also establishes a Chemical Safety and Hazard Investigation Board, modeled after the National Transportation Safety Board, to investigate chemical accidents, including any releases causing major fires, explosions or substantial property damage.

To anticipate the risks posed by accidental releases of many of these newly regulated chemical hazards, the legislation sets up a research program at the Liquefied Gaseous Fuels Spill Test Facility in Nevada. At least two chemicals per year — selected on the basis of their potential threat to human health — must undergo field tests to determine how they disperse in buildings and outdoors.

Other new research initiatives in the pending law include:

- A \$6 million, university-conducted field study to evaluate acid rain's effects on waters in New York's Adirondack Mountains, where acidification from fossil-fuel pollutants has been most acute.
- An 18-month joint study by the Fed-

eral Energy Regulatory Commission and EPA to calculate "environmental benefits of renewable energy" and methods for ensuring that new regulations "reward renewable energy technologies for their environmental benefits."

- Monitoring and reporting of carbon dioxide emissions from each facility subject to the revised Clean Air Act's "Title V," or permitting, section. Past U.S. data on carbon dioxide, the leading "greenhouse" gas, have been based on tests of a few "typical" power plants under several different conditions. Within 18 months of the new law's enactment, every power plant operating under a Clean Air permit must report to EPA the actual amounts of carbon dioxide emitted.

- An \$8 million, five-year investigation of air pollution's contribution to atmospheric haze — acid rain's most visible symptom. NAPAP based most of the haze analysis it prepared earlier this year (SN: 3/3/90, p.143) on pre-NAPAP data. Congress now requires the development of a new haze-monitoring network to help assess its new acid rain controls.

- An EPA program to begin evaluating the short- and long-term health impacts of "toxic" air pollutants, including wood smoke.

- A two-year quantitative inventory of methane sources in the United States and abroad. Congress also instructs EPA to identify options for reducing U.S. releases of methane, an ozone-destroying chemical and one of the four major greenhouse gases.

- Establishment of a Risk Assessment and Management Commission to investigate the policy implications and best use of risk assessment and risk management in rules to prevent cancer and other chronic health effects caused by air pollutants.

- A program to identify, characterize and predict air pollutants emitted in the production, distribution and use of the cleaner-burning fuels called for in the act's smog-control section.

- A study, to be completed within two years, comparing international technologies for air pollution control.

- A program to study short- and long-term effects of air pollutants on whole ecosystems, especially waterways, wetlands, forests and soils.

No one knows for sure what the new law will ultimately cost. The Clean Air Working Group, a coalition of nearly 2,000 industries, has estimated that the revised Clean Air Act, when fully implemented, could cost taxpayers \$50 billion to \$104 billion annually. The Clean Air Coalition, a group of environmental organizations, pegs the likely price of the fully implemented program at closer to \$20 billion a year.

Recognizing the fiscal uncertainty, the new bill gives EPA two years to begin assessing the likely costs and benefits of compliance.

— J. Raloff