

NCPA

National Center for Policy Analysis

POLICY BACKGROUNDER No. 107

*For people with limited time
and a need to know.*

For Immediate Release

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Environment Issue:

RETHINKING THE CLEAN AIR ACT AMENDMENTS

Background. The Clean Air Act was passed in 1970 and has been amended on several occasions. Recent amendments proposed by President Bush have been so altered in the Senate and the House of Representatives that they now risk a presidential veto. These altered proposals would create costly burdens for consumers, workers and industry in an effort to reduce acid rain, and ozone pollution, emissions from automobiles, and toxic chemicals.

From the intensity of the debate it might appear that America faces imminent ecological disaster. Fortunately, this is not the case. Air quality in America continued to improve during the 1980s, even though the gross national product doubled during the period. Environmental Protection Agency (EPA) statistics during the ten-year period from 1978 to 1987 indicate that emissions of sulphur dioxide were reduced by 17 percent, suspended particulates by 23 percent, carbon monoxide by 25 percent and volatile organic compounds (which can react to form ozone) by 17 percent. [See graphic.]

Arguments For the Clean Air Amendments. Proponents of the Clean Air Act amendments argue that (1) there is still too much air pollution in America, (2) their opponents have exaggerated the costs and (3) even if the cost estimates are correct, clean air is worth the price.

"As the nation enters a recession, can we afford new environmental regulations?"

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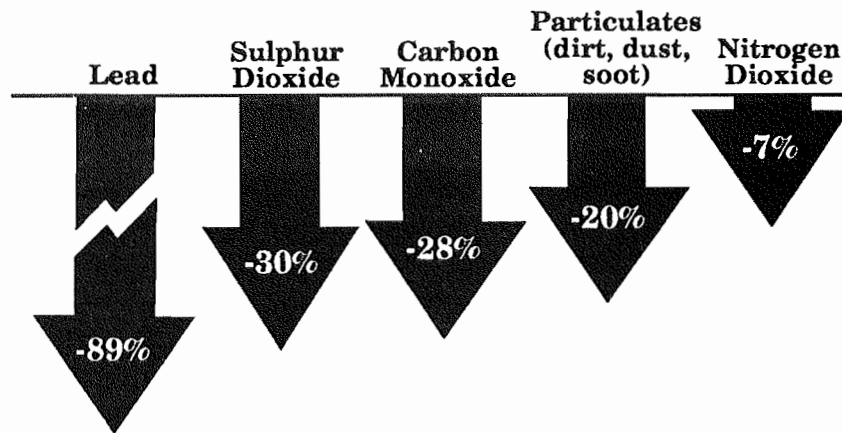
"Opponents say the new amendments would be costly and would do little to help the environment."

"The nation's air quality has improved substantially."

"We already spend \$33 billion per year on air pollution control."

Arguments Against the Clean Air Amendments. Opponents argue that (1) the EPA already has the authority to require any needed air quality improvements, (2) the costs of the amendments will lead to job losses, reduced international competitiveness and a deeper recession and (3) the environmental benefits of the amendments are very small.

THE AIR IS GETTING CLEANER URBAN AIR QUALITY (1979-1988)



Source: Environmental Protection Agency

COSTS OF THE CLEAN AIR ACT AMENDMENTS

The nation already spends approximately \$33 billion each year for air pollution control. The proposed amendments to the Clean Air Act could easily double that amount. These complex amendments, comprising hundreds of pages of legislation, would have to be implemented by additional EPA regulations. No one is sure what the final cost would be.

When President Bush introduced his Clean Air Act amendments, the administration estimated the cost at around \$20 billion per year and threatened to veto any bill that increased the cost by more than 10 percent. Most estimates of the current legislation place the cost well above that limit:

"Cost estimates range as high as \$91 billion per year."

- Michael J. Boskin (chairman of the President's Council of Economic Advisors) estimates that the least costly House and Senate versions would cost about \$25 billion by the year 2005 and could run as high as \$35 billion annually.¹
- The Clean Air Working Group (an industry coalition) estimates that compliance with either the House or Senate provisions would cost at least \$51 billion annually and, if the most stringent options are put into law, as much as \$91 billion per year.²
- The Business Roundtable estimates that tens of thousands of Americans would be thrown out of work because of the costs of the Clean Air amendments, including more than 60,000 workers in Texas alone.³

"As many as 60,000 jobs could be lost in Texas alone."

ACID RAIN

One controversial provision of the Clean Air Act amendments provides new regulations to reduce the amount of acid rain in order to reduce the acidity of our lakes.

- This proposal will cost taxpayers between \$4 and \$9 billion per year.
- It will raise Midwest electricity rates by 20 to 30 percent and cut Appalachian coal mine employment by 40 to 60 percent.
- Yet it may not reduce the acidity of a single U.S. lake.

"Acid rain regulations could cost as much as \$9 billion per year — and may not reduce the acidity of any lakes."

What Causes Acid Lakes? The new proposal is based on the assumption of a lengthy causal chain: Midwestern utility companies burn coal, which releases sulphur dioxide, which is carried across the continent by wind. The sulphur dioxide accumulates in clouds and is deposited in lakes and streams in places as distant as the Northeast and Canada by "acid rain."

Fortunately, the theory is wrong. Beginning in 1980, the federal government funded a ten-year, \$500 million study of acid rain, the National Acid Precipitation Assessment Program (NAPAP).⁴ It was the most comprehensive study ever conducted on a single environmental issue. Its principal finding: acid rain does not cause acid lakes.

"A \$500 million government study concludes: acid rain does not cause acid lakes."

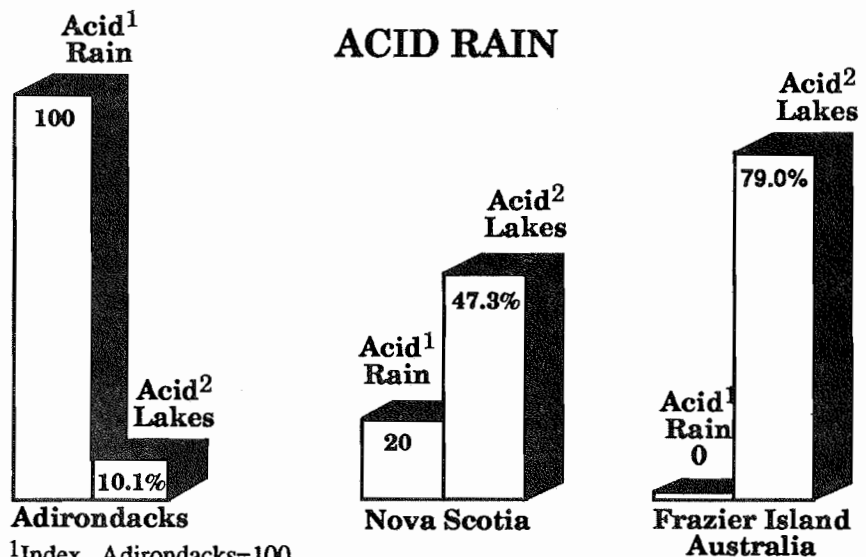
"Cutting sulphur emissions by 50 percent would cost \$100 billion and improve only 80 lakes."

"There is no correlation between acid rain and acid lakes."

- Although all rainfall is naturally acidic, some man-made emissions, primarily oxides of sulphur, can increase the acidity of rain, fog or snow.⁵
- Yet there is almost no correlation between acid rain and acid lakes.
- Instead, almost 80 percent of the acidity in lakes is caused by the acidity of nearby topsoil.

Lakes and streams get more than 90 percent of their water not from rain but from surface runoff, which is filtered through topsoil around the lake. The topsoil can become acidic because of a natural buildup of decayed and decaying vegetation. The myth that acid rain is the chief culprit is disproved by evidence collected in this country and around the world. [See graphic.]

- Rain in Florida is only one-sixth as acid as rain in the Adirondacks, yet the concentration of acid in Central Florida lakes is six times higher than in Adirondack lakes.
- Frazier Island in Australia receives no man-made emissions, yet 78 percent of its lakes and 98 percent of its surface water are highly acidic.



¹Index. Adirondacks=100.

²Percent of all lakes in the region.

What Can Be Done About Acid Lakes? A major conclusion of the NAPAP study is that the approach taken under the Clean Air Act and its amendment is an expensive way to accomplish very little:

"A better way: Acid lakes can be directly neutralized for only \$500,000 per year."

- If the proposals cut sulphur emissions by 50 percent, we would have to wait decades for any observable effect, and the cost would be in excess of \$100 billion.
- Even then, NAPAP estimates that only about 80 lakes would improve.

By contrast, scientists can reduce the acidity of lakes directly by using crushed limestone. We can neutralize all the acid lakes in the Northeast, whether the acidity is natural or caused by man, by liming at a cost of only \$500,000 per year.⁶

AIR TOXICS

Air toxics is the term for chemical emissions which, in sufficient quantities, can pose a health risk to humans. Lead emissions, for example, can adversely impact human health, so leaded gasoline is being phased out of use in America. Atmospheric concentrations of lead have been reduced by 94 percent since 1978. Other recent improvements also are noteworthy:

"EPA: Cancer incidence from pollutants has been reduced by 50 percent."

- The EPA recently concluded an agreement with nine major U.S. corporations to reduce air emissions from 40 of the largest chemical plants in the nation by 83 percent over the next 27 months.⁷
- In its 1985 Air Toxics Report, the EPA concluded that from 1970 to 1980 the incidence of cancer attributable to these 16 hazardous pollutants was reduced by 50 percent.⁸
- In addition, the EPA estimates that car and truck toxic emissions will be reduced by another 40 percent between 1986 and 1996 without additional regulations.⁹

If there were truly a public health emergency, almost everyone would support strong federal action. The problem is that the risks from current levels of air pollution are so small and so hard to measure that much of the information used in debate is unverifiable.

"One-half of all chemicals tested in rodents cause cancer if the dosage is high enough."

"Scientists are becoming increasingly skeptical about cancer experiments on rats and mice."

"In jumping from rats to humans, the EPA greatly exaggerates the environmental risks."

How the EPA Calculates Risks. The typical EPA methods for evaluating the public health risks from air pollution greatly overstate those risks. For example, the EPA calculates potential risks from exposure to an air pollutant by testing the chemical for toxicity in laboratory animals:

- The chemical is administered to rats and mice in massive daily doses just below the amount that would kill them immediately.
- At these high levels of exposure, one out of every two chemicals ever tested (both natural and man-made) eventually causes cancer in rodents.
- The EPA then extrapolates from rodents to humans and estimates the human risk of cancer from exposure to the same chemical.

Scientists are increasingly skeptical about the value of extrapolating from these rodent experiments the risk to humans from ordinary exposure. Many are also skeptical about what the EPA does next:

- To calculate the "risk" to human populations, the EPA postulates an imaginary "Most Exposed Individual" (MEI) who lives on the property line of the emissions source and breathes the highest level of emissions from that source for 70 years, 24 hours each day.
- The EPA then assumes that everyone is an MEI.¹⁰
- Even with these pessimistic assumptions, the EPA estimates that only 1,700 to 2,700 cancers are caused each year by exposure to approximately 90 potentially hazardous air pollutants.
- While that hypothetical number may seem large, it is a small fraction of the almost one million cancer cases occurring each year in America.¹¹

Even if the EPA's risk assessments were correct, the cost of preventing cancer through the proposed regulations would be extremely high:

- Since the Clean Air Act amendments target only the largest polluters, the maximum reduction in cancer cases is 350 to 500 per year.
- That represents a cost of between \$40 million and \$86 million per cancer avoided.

"Based on the EPA's risk calculations, we would spend from \$40 million to \$86 million for each cancer prevented."

How Other Scientists Calculate Risks. The EPA's extreme risk models are notoriously faulty. A new study of the largest concentration of industrial coke ovens in the country (Allegheny County, PA) concludes that the EPA's estimate of cancer caused by coke emissions is exaggerated by a multiple of 100:¹²

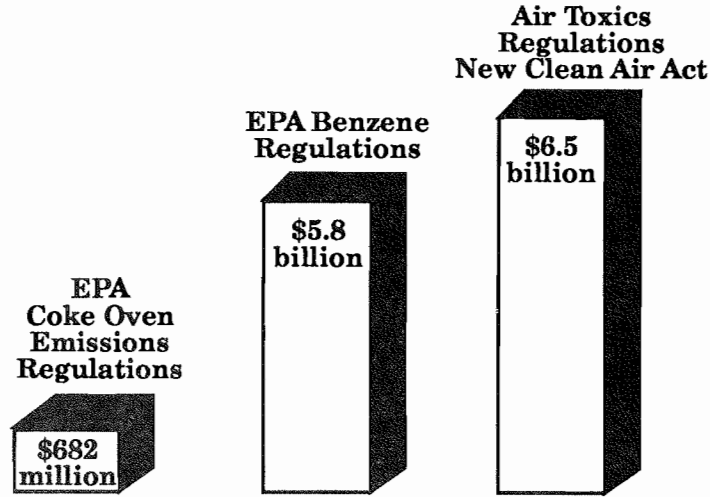
- By the EPA's own calculations, its regulations on coke emissions cost \$6.8 million per cancer prevented.
- Based on more realistic calculations, the cost is \$682 million to prevent a single instance of cancer.

"Other scientists say the proposed regulations would cost between \$4 and \$9 billion to prevent a single cancer."

The EPA's cost-is-no-object approach is also reflected in its new benzene regulations, which impose a cost of \$200 million a year to prevent an EPA-estimated 3.4 cases of cancer:¹³

- By the EPA's own calculations, its new benzene regulations will cost \$59 million to prevent a single instance of cancer.
- By more realistic calculations, the cost of each cancer prevented will be \$5.8 billion.

THE COST OF PREVENTING A SINGLE CANCER



"The air toxics budget would be 10 to 15 times the budget of the National Cancer Institute — and do very little to prevent cancer."

"Outside of Southern California, almost no community has 'unhealthy' air."

"The proposals would impose Southern California's costly standards on every car in America."

Applying this more realistic method to all air toxics, it appears that the Clean Air Act amendments' air toxic regulations may prevent three to five cancers per year rather than 350 to 500. The cost per cancer prevented will be between \$4 and \$9 billion per year.

Better Solutions. The National Cancer Institute's goal is to reduce the nation's 470,000 annual cancer deaths by one-half by the year 2000. Yet the institute does not even mention reducing carcinogenic chemicals in the environment as one of its objectives. Maximizing resources is not necessarily a goal of the U.S. Congress, however. Industry groups estimate that the air toxics section of the amended Clean Air Act would cost \$20 to \$30 billion — about 10 to 15 times the entire budget of the National Cancer Institute — to address a minor potential source of cancer.

OZONE

Ozone is the primary cause of urban air pollution known as "smog." Because of its reactive nature, high doses of ozone can stress human lungs and irritate the eyes. Vehicles, and to a lesser extent stationary sources, emit chemicals such as nitrogen oxides and hydrocarbons, which are necessary for the formation of ozone. In addition, water vapor and sunlight are instrumental in the complex chemical reaction. Thus, ozone is primarily a summertime phenomenon. For this reason, the government monitors ozone levels only during the warmer months.

How Ozone is Measured. Many in politics and the media continue to assert that "over 100 million Americans live in communities with unhealthy air." This assertion is largely an artifact of ozone measuring techniques.

The federal standards for ozone levels are very stringent. Any municipal area which registers at least four one-hour measurements of ozone of more than 0.12 parts ozone per million parts air (ppm) over a three-year period is said to be in "nonattainment" under the Clean Air Act. Any single year with excessive measurements at a single monitor places the entire area in nonattainment status for the next two years as well.

The monitors are intentionally placed in locations expected to show high levels of ozone, generally near or downwind from major traffic areas. In spite of this, almost every municipality outside of Southern California is in "attainment" 99.5 percent of the time.

Proposed Regulations. Southern California has adopted incredibly stringent rules for fighting smog, including a limit on new-car hydrocarbon emissions of 0.25 grams per mile (gpm) driven. *The proposed new federal rule would impose the California standard on all new cars in America, raising automobile prices even in areas with no pollution problems.* This approach to cleaning the air relies on ever-diminishing returns and marginal improvements because new cars produce very few emissions already.

"Only 10 percent of the cars cause 50 percent of the pollution."

TAIL PIPE EMISSION STANDARDS

Perhaps the greatest "success story" under the old Clean Air Act is that automobile tail pipe emissions of carbon monoxide and hydrocarbons are down 96 percent, emissions of nitrogen oxides about 76 percent. This has cost consumers dearly. But the "easy" gains, as expensive as they were, have all been made. Future reductions in automobile emissions, which would be even more expensive, might not produce any benefits.

- All new cars and about 75 percent of the oldest cars on the road meet the EPA's tail pipe emission standards.
- Only 10 percent of the cars on the road produce about 50 percent of the pollution.
- Yet the new regulation would force all car owners to pay for the sins of the few, even though reducing the emissions from new cars would have no impact on air pollution.

Clean Fuels. More stringent new car standards would not reduce the pollution from this dirtiest segment of the U.S. car fleet. Thus, the proponents of the Clean Air Act amendments call for a mandatory switch to "clean" fuels in nonattainment areas. Clean fuels including methanol, ethanol and natural gas are so called because they produce fewer major pollutants when burned than does gasoline. However, each fuel has drawbacks of its own such as limited supply, import dependence, difficult refueling processes or extreme toxicity to humans. For example, the most highly favored gasoline substitute, methanol, is both dangerous and expensive:¹⁴

- Methanol emits 10 times more formaldehyde (a potential carcinogen) than gasoline and is 25 times as toxic to humans.
- By one estimate, the widespread use of methanol would increase annual health care expenditures by \$50 to \$100 million.

"So-called 'clean fuels' are more dangerous and more expensive than gasoline."

"Requiring all cars to burn clean fuels is like requiring everyone to take AZT because some have AIDS."

"A better way: Don't punish 90 percent of the people for the sins of 10 percent."

- The cost of methanol would increase the price of motor fuel from \$1.30 to \$2.07 per gallon at the pump.

Incidentally, methanol is the cheapest alternative to gasoline overall, and no large sources of *any* alternative fuel are available to satisfy transportation needs.

A Better Way. A team of researchers led by Donald Stedman, a chemistry professor at the University of Denver, has developed a device that can measure the carbon monoxide emissions of an automobile as it drives past a sensor. Using the device would enable municipalities to detect precisely which cars are polluting and require corrective action.

PERMITS

Currently, 35 states require pollution emission permits for at least some industrial activities. The Clean Air Act amendments would create a federal permit program granting the EPA power over the same firms. Without a federal permit, thousands of firms would not be allowed to operate. Applications would be reviewed by the EPA even if a company fully complied with an already-EPA-approved state permit plan.

"A new permit system could be a bureaucratic nightmare for the productive private sector."

The amendments would not only add at least 50,000 permit applications to the EPA work load but would duplicate existing state efforts. There is no evidence that this expensive, time-consuming duplication would produce any environmental benefits. In addition, even if the EPA and the state agreed that a plant was in compliance with its operating permit, their agreement could be challenged in the courts. Radical environmental groups and corporate competitors could entangle plant operations in endless court challenges on a permit-by-permit basis.

CONCLUSION

Its congressional advocates are determined to push the new Clean Air bill onto the president's desk before the November elections. In the process, the economy is being shortchanged and so is the environment. While the nation's air quality will not suffer if the proposed Clean Air Act amendments are not passed, the American economy will suffer terribly if they are.

Kent Jeffreys
Director of Environmental Studies
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NOTE: Nothing written here should be construed as necessarily reflecting the views of the National Center for Policy Analysis or as an attempt to aid or hinder the passage of any bill before Congress.

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Footnotes

¹Environmental and Energy Study Institute, Washington, DC, *Weekly Bulletin*, September 3, 1990, p. B-6. Many potential costs are not even considered by the White House in making these estimates. Because most of the compliance deadlines are unrealistically short, many areas will not meet them, triggering more stringent (and expensive) requirements.

²Dale Denny, "Clean Air Act Legislation: Administration Bill — Administration/Senate Compromise Bill Cost Comparison," Denny Technical Services, March 17, 1990.

³Dr. Robert W. Hahn and Wilbur A. Steger, "An Analysis of Jobs-at-Risk and Job Losses Resulting From the Proposed Clean Air Act Amendments," Business Roundtable Study, February 1990.

⁴The Natural Acid Precipitation Task Force created by PL96-294.

⁵Emissions of nitrogen also increase the acidity of rain, but vegetation absorbs nitrogen as a nutrient, so almost none of it remains in streams or lakes. Sulphur levels, however, exceed the nutrient requirements of plants in the eastern United States, so some sulphur ends up in surface waters.

⁶See Edward C. Krug, "Fish Story: The Great Acid Rain Flimflam," *Policy Review*, Spring 1990; and J. Laurence Kulp, "Acid Rain: Causes, Effects, and Control," *Regulation*, Winter 1990.

⁷The firms undoubtedly were concerned over the proposed amendments to the Clean Air Act. Some versions of the air toxics provisions would require emission reductions of 99 percent while exempting those plants which cut emissions by at least 90 percent by 1992.

⁸U.S. Environmental Protection Agency, *The Air Toxics Problem in the United States: An Analysis of Cancer Risks for Selected Pollutants*, Washington, DC, May 1985. Cited in John D. Graham, et al., "The Potential Health Benefits of Controlling Hazardous Air Pollutants," in John Blodgett, ed., *Health Benefits of Air Pollution Control: A Discussion*, a Congressional Research Service Report for Congress, January 1, 1989, p. 173.

⁹Ibid.

¹⁰The risk for any person developing some form of cancer is one in four, since 25 percent of the American public will suffer from cancer during their lives. The EPA's wild estimates of risk are generally hidden behind the large probability that any given individual will develop some type of cancer. However, its method of calculation so exaggerates risk that in at least one case (a Texaco plant at Port Neches, Texas) the EPA estimated that the added risk of cancer from living near the plant was one in ten. This is such a high figure that it should show up in public health figures. The EPA tries to avoid direct contradiction by arguing that these risk estimates should be used for purposes of comparing relative risks.

¹¹Frederick Rueter and Wilbur Steger, "Air Toxics and Public Health," *Regulation Magazine*, Winter 1990, Cato Institute, 224 Second Street SE, Washington, DC 20003 (202) 546-0200.

¹²Ibid.

¹³Ibid.

¹³*CEI Update*, Competitive Enterprise Institute.

THE NATIONAL CENTER FOR POLICY ANALYSIS

The National Center for Policy Analysis is a nonprofit, nonpartisan research institute, funded exclusively by private contributions. The NCPA originated the concept of the Medical IRA (which has bipartisan support in Congress) and merit pay for school districts (adopted in South Carolina and Texas). Many credit NCPA studies of the Medicare surtax as the main factor leading to the the 1989 repeal of the Medicare Catastrophic Coverage Act.

NCPA forecasts show that repeal of the Social Security earnings test would cause no loss of federal revenue, that a capital gains tax cut would increase federal revenue and that the federal government gets virtually all the money back from the current child care tax credit. These forecasts are an alternative to the forecasts of the Congressional Budget Office and the Joint Committee on Taxation and are frequently used by Republicans and Democrats in Congress. The NCPA also has produced a first-of-its-kind, pro-free-enterprise health care task force report, representing the views of 40 representatives of think tanks and research institutes.

The NCPA is the source of numerous discoveries that have been reported in the national news. According to NCPA reports:

- Blacks and other minorities are severely disadvantaged under Social Security, Medicare and other age-based entitlement programs;
- Special taxes on the elderly have destroyed the value of tax-deferred savings (IRAs, employee pensions, etc.) for a large portion of young workers; and
- Man-made food additives, pesticides and airborne pollutants are much less of a health risk than carcinogens that exist naturally in our environment.

What Others Say About the NCPA

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TIME

"... steadily thrusting such ideas as 'privatization' of social services into the intellectual marketplace."

CHRISTIAN SCIENCE MONITOR

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EVANS AND NOVAK