

THE CLEAN AIR ACT – Highlights of the First 40 Years

In the 40 years since the 1970 Clean Air Act was enacted, the country has made tremendous progress reducing air pollution, saving lives while the economy has grown.

The Clean Air Act has a proven record of progress dating back to 1970.

According to a 1997 EPA Report to Congress, the first 20 years of Clean Air Act programs, from 1970 – 1990, led to the prevention in the year 1990 of:

- 205,000 premature deaths
- 672,000 cases of chronic bronchitis
- 21,000 cases of heart disease
- 843,000 asthma attacks
- 189,000 cardiovascular hospitalizations
- 10.4 million lost I.Q. points in children – from lead reductions
- 18 million child respiratory illnesses

Clean Air Act Amendments of 1990, Better air quality, better health protection

In 1990, the Act was revised with overwhelming bipartisan support and signed into law by President Bush. From 1990 thru 2008, emissions of six common pollutants are down 41%, while gross domestic product has grown 64%. Emissions of volatile organic compounds have dropped 31%, carbon monoxide dropped 46% and sulfur dioxide dropped 51%.

- Data from 2006-2008 show ozone air quality improved in 95 of the 126 areas designated to be in nonattainment for the ozone air quality standards.
- Nearly the entire country is meeting air quality targets set years ago for carbon monoxide, nitrogen oxides and sulfur dioxide.
- Lead levels in ambient air are 92% lower than in 1980, greatly reducing the number of children with IQs below 70 as a result of dirty air.
- Preliminary EPA analysis shows that in 2010, Clean Air Act fine particles and ozone programs implemented since the 1990 Amendments will prevent more than 160,000 premature deaths. In addition, the economic value of the air quality improvements is estimated to reach almost \$2 trillion for the year 2020, a value which vastly exceeds the costs of efforts to comply with the 1990 Clean Air Act and related programs. <http://www.epa.gov/oar/sect812/prospective2.html>

Cutting Air Pollution and Building the Economy Can Go Hand in Hand

The Clean Air Act is one of the reasons for the dramatic growth since the early 1970s in the U.S. environmental technologies industry.

- By 2007 the industry was generating approximately \$282 billion in revenues, producing \$40 billion in exports, and supporting 1.6 million jobs. The Commerce Department defines this industry to include all environmental media, environmental cleanup and resource recovery.
- Air pollution control equipment alone generated revenues of \$18.3 billion in 2007, including exports of more than \$3 billion.
- Many environmental technology industry jobs are high-tech such as engineering and computer-aided design; others involve traditional manufacturing, transport, and communication.
- Jobs related to Clean Air Act implementation are widely dispersed throughout the states and occur in many sectors of the economy.
- In response to the surge in construction of retrofits resulting from EPA regulatory actions, the U.S.

boilermaker population grew by approximately 35 percent, or 6,700 boilermakers, in just two years, between 1999 and 2001, according to data from the International Brotherhood of Boilermakers.

Cleaner cars, trucks and transportation

Today's new cars, light trucks, and heavy-duty diesel engines are up to 95 percent cleaner than past models, and new non-road engines such as those used in construction and agriculture have 90 percent less particulate matter and nitrogen oxide emissions.

- Cumulatively, the Clean Air Act standards will prevent more than 26,000 premature deaths, 19,000 hospitalizations, and 3.2 million work days lost.
- When fully implemented in 2030, EPA's vehicle and fuel rules will produce \$186 billion in air quality and health benefits, with only \$11 billion in costs, a nearly 16-to-1 benefit/cost ratio.
- Certain rules have been found to be even more cost-effective, including EPA's Nonroad Diesel Tier 4 rule, which boasts a 40-to-1 benefit ratio.

Combating acid rain, cleaner power plants, significant economic benefits

Reducing acid rain has significantly reduced damage to water quality in lakes and streams, improved the health of ecosystems and forests, and dramatically reduced mortality rates.

- Acid deposition has decreased by more than 30 percent in much of the Midwest and Northeast since 1990 under a cap-and-trade program for power plants.
- Reductions in fine particle levels yielded benefits including about 20,000-50,000 incidences of premature mortality avoided (lives saved) annually.
- The benefits of the acid rain program outweigh the costs by more than 40-to-1 at the lower avoided mortality estimate.
- Cost estimates of the Acid Rain SO₂ trading program by Resources for the Future (RFF) and MIT have been as much as 83 percent lower than were originally projected by EPA.

Reducing industrial toxic air pollution

Rules issued since 1990 are expected to reduce toxic emissions from industry by 1.7 million tons a year -- many times the reductions achieved in the previous 20 years.

- The air toxics rules for chemical plants, oil refineries, aerospace manufacturing and other industries also are achieving large reductions in smog-forming VOCs and particulates.
- Monitoring networks are extensive enough to determine that outdoor air concentrations of benzene, a carcinogen, decreased 55 percent between 1994 and 2007.

Reducing skin cancer and cataracts by protecting the ozone layer

The Clean Air Act amendments of 1990 require that EPA develop and implement regulations for the responsible management of ozone-depleting substances in the United States to help restore the ozone layer.

- The phase-out of the most harmful ozone-depleting chemicals, including CFC and halons will reduce U.S. incidences of non-melanoma skin cancer by 295 million during the period 1990 through 2165. Stronger ozone layer protection policies through 1997 will prevent more than 22 million additional cataract cases for Americans born between 1985 and 2100.
- The phase-out for Class I substances was implemented 4-6 years faster, included 13 more chemicals, and cost 30 percent less than was predicted at the time the 1990 Clean Air Act Amendments were enacted.

Technological Innovation

Studies have found that costs of some EPA air pollution programs have been lower than originally estimated, and this has been due in part to inadequate ability to predict and account for future technological innovation. Catalysts, scrubbers, low-VOC paints and coatings, are part of a long list of technologies were not known in 1970, but are proven and widely deployed today. Examples include:

- Selective catalytic reduction (SCR) and ultra-low NO_x burners for NO_x emissions;
- Scrubbers which achieve 95% and even greater SO₂ control on boilers;
- Sophisticated new valve seals and leak detection equipment for refineries and chemical plants;
- Low or zero VOC paints, consumer products and cleaning processes;
- Chlorofluorocarbon (CFC) free air conditioners, refrigerators, and solvents;
- Water and powder-based coatings to replace petroleum-based formulations;
- Vehicles far cleaner than believed possible in the late 1980s due to improvements in evaporative controls, catalyst design and fuel control systems for light-duty vehicles; and treatment devices and retrofit technologies for heavy-duty engines;
- Idle-reduction technologies for engines, including truck stop electrification efforts; and
- Market penetration of gas-electric hybrid vehicles, and clean fuels