

Major Federal Legislation on

Water Pollution

Air Pollution

Chemicals in Production of Consumer Products

Toxic Emissions

Handling, Storage, Treatment, and Disposal of Hazardous Wastes

*Source:* Field and Field (2009), *Environmental Economics: An Introduction*, Boston: McGraw-Hill/Irwin, Tables 14.1, 15.3, 16.1, 16.2, and 16.4.

**TABLE 14.1 Major Federal Legislation on Water Pollution Control**

---

**1899 Refuse Act**

---

Required permit from the U.S. Army Corps of Engineers before refuse of any kind could be put into a navigable water. Primary purpose was to ensure navigability, but it had a brief, and not very successful, reincarnation in the 1960s as a water-quality measure.

**1948 Water Pollution Control Act (WPCA)**

---

Federal government was authorized to conduct investigations, research, and surveys; however, no federal authority was established to enforce laws, set standards, or limit discharges. Authorized federal government to make loans to municipalities to construct sewage treatment facilities.

**1956 WPCA Amendments**

---

Authorized the states to establish criteria for determining desirable levels of water quality; introduced the idea of an "enforcement conference," sponsored by federal agencies to bring together state and local interests to develop enforcement plans. Authorized federal government to make grants for municipal waste treatment facilities, with federal share up to 55 percent of construction costs.

**1965 Water Quality Act**

---

Required the states to develop *ambient quality standards* for interstate water bodies and implementation plans calling for effluent reductions from specific sources. State actions required federal approval, with a strengthened "enforcement conference" procedure.

(Continued)

<sup>1</sup> The first such agency was in Massachusetts in 1869.

**TABLE 14.1** (Continued)

---

**1972 WPCA Amendments**

---

Provided for a federally mandated system of *technology-based effluent standards*, with federal enforcement through the granting of discharge permits. Phase I (starting in 1977) permits were based on "Best Practicable Technology" (BPT); Phase II (starting in 1983) based on "Best Available Technology" (BAT); states could ultimately take over permitting process. Declared a goal of zero discharge to be attained by 1985. Made a large increase in the municipal treatment plant grant program, with federal share increased to 75 percent of construction costs. Mandated secondary treatment in municipal treatment plants.

---

**1974 Safe Drinking Water Act**

---

Requires the EPA to set maximum contaminant levels for drinking water; requires public authorities to protect, monitor, and test water supplies. Amended in 1986 and 1996.

---

**1977 Clean Water Act**

---

Established procedures for control of toxic effluent in addition to conventional effluent on which previous acts had focused; sources were required to meet "Best Conventional Technology" (BCT) for conventional pollutants and BAT for toxics, starting in 1984; increased authorization for treatment plant subsidies.

---

**1981 Municipal Wastewater Treatment Construction Grant Amendments**

---

Reduced federal share to 55 percent and substantially decreased the authorized funding level.

---

**1987 Water Quality Act**

---

Postponed some of the deadlines for adopting *technology-based effluent standards*; changed the waste treatment subsidy program from federal grants to federal contributions to state revolving funds; requires states to develop and implement programs to control nonpoint sources of pollution.

---

Sources: Allen V. Kneese and Charles L. Schultze, *Pollution, Prices and Public Policy*, Brookings Institution, Washington, DC, 1973, p. 31; Tom H. Tietenberg, *Environmental and Natural Resource Economics*, 2nd ed., Scott, Foresman, Glenview, IL, 1988, pp. 410-411; A. Myrick Freeman III, "Water Pollution Control," in Paul R. Portney (ed.), *Public Policies for Environmental Protection, Resources for the Future*, Washington, DC, 1990, pp. 100-101.

TABLE 15.3 Major Federal Air Pollution Laws

---

**Air Pollution Control Act (APCA) of 1955**

---

Authorized the Secretary of Health, Education and Welfare to spend up to \$5 million a year to do research and to help the states in training and technical assistance on matters of air pollution. Extended in 1959 and 1962.

---

**Motor Vehicle Exhaust Study Act of 1960**

---

Directed the Secretary of HEW to do a study on "Motor Vehicles, Air Pollution and Health" within two years.

---

**Clean Air Act (CAA) of 1963**

---

Authorized federal grants to states to develop state and local air pollution control programs; established a conference system to deal with problems of interstate air pollution; extended authorization for federal research on air pollution.

---

**Motor Vehicle Air Pollution Control Act of 1965**

---

Authorized the Secretary of HEW to set *emission standards* for new cars (but no deadline was established); dealt with international air pollution and called for more research.

---

**CAA Extension of 1966**

---

Extended the CAA of 1963 and added authority to make grants to states to support air pollution-control programs.

---

**Air Quality Act (AQA) of 1967**

---

Provided for additional grants to states to plan air pollution control programs; provided for interstate air pollution control agencies, expanded research on fuels and vehicles; required HEW to establish air quality regions of the country, publish air quality criteria and control technology reports for the common pollutants; required states to establish ambient air quality standards for the "criteria" pollutants and develop attainment programs; authorized HEW to give financial assistance to states to establish motor-vehicle inspection programs.

---

**CAA Amendments of 1970**

---

Established *national* ambient air quality standards (NAAQSs) for criteria pollutants; required the establishment of new-car emission standards along with certification programs; EPA was to establish emission standards for major toxic or hazardous pollutants; EPA to establish technology-based emission standards for all *new sources* (NSPS) of the common air pollutants; required state implementation plans (SIPs) to control existing stationary sources of air pollutants.

---

**CAA Amendments of 1977**

---

Established the goal of "prevention of serious deterioration" (PSD) in areas already cleaner than the national standards; established three classes of already clean areas:

Class I areas: no additional air quality deterioration permitted (includes national parks, etc.).

TABLE 15.3 (Continued)

---

**CAA Amendments of 1977**


---

Class II areas: some air quality deterioration to be permitted (includes most PSD regions).

Class III areas: air quality to be allowed to deteriorate to level of NAAQSs.

Established a technology standard "lowest achievable emission rate" (LAER) for new sources in nonattainment areas and "best available control technologies" (BACT) for new sources in PSD regions.

---

**CAA Amendments of 1990**


---

Established tougher tailpipe standards for new cars, with longer warranty period; mandated pilot program of "clean" cars in some cities; reformulated fuels in some cities; Phase II pumps at gas stations; onboard fume canisters on cars; streamlined stationary-source permitting procedures; provided for reduction of 189 toxic airborne emissions through TBES ("maximum achievable control technology," MACT); provided for stricter local plans to reduce ozone, carbon monoxide, and particulates in the worst cities; further rules for phasing out of CFCs; provided for a system of transferable discharge permits among power plants to reduce sulfur dioxide emissions.

---

Sources: Arthur C. Stern, "History of Air Pollution Legislation in the United States," *Journal of Air Pollution Control Association*, 32(1), January 1982, pp. 44-61; Paul R. Portney, "Air Pollution Policy," in Paul R. Portney (ed.), *Public Policies for Environmental Protection, Resources for the Future*, 1990, chap. 3; *EPA Journal*, January/February 1991, pp. 8-9.

**TABLE 16.1** Federal Laws Dealing with Chemicals in Production and Consumer Products

Statute	Responsible Agency	Coverage
Federal Insecticide, Fungicide, and Rodenticide Act (1972)	EPA	Requires that all pesticides be registered with EPA
Food, Drug, and Cosmetic Act (1938)	FDA	Basic coverage of food, drugs, and cosmetics
Food additives amendment	FDA	Food additives
Color additives amendments	FDA	Color additives
New drug amendments	FDA	Drugs
New animal drug amendments	FDA	Animal drugs and feed additives
Medical device amendments	FDA	Medical devices
Section 346(a) of the Food, Drug, and Cosmetic Act	EPA	Establishes tolerances for pesticide residues in human food and animal feeds
Federal Hazardous Substances Act (1960)	CPSC	"Toxic" household products (equivalent to consumer products)
Consumer Product Safety Act (1972)	CPSC	Dangerous consumer products
Poison Prevention Packaging Act (1970)	CPSC	Packaging of dangerous children's products
Lead-Based Paint Poison Prevention Act (1991)	CPSC	Use of lead paint in federally assisted housing
Federal Meat Inspection Act (1907)	USDA	Food, feed, and color additives and pesticide residues in meat and poultry products
Poultry Products Inspection Act (1957)	USDA	Poultry products
Egg Products Inspection Act (1970)	USDA	Egg products
Federal Mine Safety and Health Act (1977)	MSHA	Coal mines or other mines
Toxic Substances Control Act (1976)	EPA	Requires premanufacture evaluation of all new chemicals (other than food, food additives, drugs, pesticides, alcohol, tobacco); allows EPA to regulate existing chemical hazards
Occupational Safety and Health Act (1970)	OSHA	Establishes permissible exposure levels to chemicals in the workplace
Food Quality Protection Act of 1996	EPA	Sets maximum levels of pesticides in food

Note: EPA = Environmental Protection Agency; FDA = Food and Drug Administration; OSHA = Occupational Safety and Health Administration; CPSC = Consumer Product Safety Commission; USDA = United States Department of Agriculture; MSHA = Mine Safety and Health Administration.

Sources: Michael Shapiro, "Toxic Substances Policy," in Paul R. Portney (ed.), *Public Policies for Environmental Protection: Resources for the Future*, Washington, DC, 1990, pp. 196-199; Original sources: Toxic Substances Strategy Committee, *Toxic Chemicals and Public Protection*, Washington, DC, 1980; and Council of Environmental Quality, *Environmental Quality*, 1982, Washington, DC, 1982.

**TABLE 16.2** The Four Primary Pollution Control Statutes as They Affect Toxic Emissions

Statute	Coverage
Clean Air Act (amended 1970, 1977, 1990)	Establish technology-based effluent standards for 189 named toxics, based on "maximum achievable control technology"
Emergency Planning and Community Right to Know Act (1986)	Establishes the Toxic Release Inventory
Clean Water Act (amended 1972, 1977)	Establishes technology-based effluent standards for 125 chemicals, based on "best available technology"
Safe Drinking Water Act (1974, amended 1986, 1996)	Requires EPA to set "maximum contaminant levels" for 189 named substances

Sources: Michael Shapiro, "Toxic Substances Policy," in Paul R. Portney (ed.), *Public Policies for Environmental Protection, Resources for the Future*, Washington, DC, 1990, pp. 198-199. Original sources: Toxic Substances Strategy Committee, *Toxic Chemicals and Public Protection*, Washington, DC, 1980; and Council of Environmental Quality, *Environmental Quality—1982*, Washington, DC, 1982.

**TABLE 16.4** Policies Dealing with Handling, Storage, Treatment, and Disposal of Hazardous Wastes

Statute	Responsible Agency	Coverage
Resource Conservation and Recovery Act (1976)	EPA	Defines hazardous wastes and sets standards for landfills; establishes a manifest system
Maritime Protection, Research, and Sanctuaries Act (1972)	EPA	Ocean dumping
Comprehensive Environmental Response, Compensation, and Liability Act (1980)	EPA	"Superfund"; sets procedures for cleaning up hazardous waste sites, and establishes a liability program for damages to natural resources
Hazardous Materials Transportation Act (1975)	DOT	Transportation of toxic substances generally
Federal Railroad Safety Act (1970)	DOT	Railroad safety
Ports and Waterways Safety Act (1972)	DOT	Shipment of toxic materials by water
Dangerous Cargo Act (1871)	DOT	Shipment of toxic materials by water
Nuclear Waste Policy Act of 1982 (amended 1987)	DOE	Requires DOE to find and develop a repository for high-level nuclear waste
Low-Level Radioactive Waste Policy Act of 1980 (amended 1985)	States	Encourages states to enter into compacts to establish landfill sites for low-level radioactive waste
National Defense Authorization Acts	DOD DOE	Allocates funds to DOD for cleaning up military bases, and to DOE for cleaning up nuclear weapons sites

Note: EPA = Environmental Protection Agency; DOT = Department of Transportation; DOE = Department of Energy; DOD = Department of Defense.

Sources: Michael Shapiro, "Toxic Substances Policy," in Paul R. Portney (ed.), *Public Policies for Environmental Protection, Resources for the Future*, Washington, DC, 1990, pp. 198-199. Original sources: Toxic Substances Strategy Committee, *Toxic Chemicals and Public Protection*, Washington, DC, 1980; and Council of Environmental Quality, *Environmental Quality—1982*, Washington, DC, 1982.