

be binding or obligatory upon any State a party thereto unless and until it has been approved by Congress. It is the intent of Congress that no agreement or compact entered into between States after November 21, 1967, which relates to the control and abatement of air pollution in an air quality control region, shall provide for participation by a State which is not included (in whole or in part) in such air quality control region.

(July 14, 1955, ch. 360, title I, §102, formerly §2, as added Pub. L. 88-206, §1, Dec. 17, 1963, 77 Stat. 393; renumbered §102, Pub. L. 89-272, title I, §101(3), Oct. 20, 1965, 79 Stat. 992; amended Pub. L. 90-148, §2, Nov. 21, 1967, 81 Stat. 485; Pub. L. 91-604, §15(c)(2), Dec. 31, 1970, 84 Stat. 1713.)

CODIFICATION

Section was formerly classified to section 1857a of this title.

PRIOR PROVISIONS

Provisions similar to those in the first clause of subsec. (a) of this section were contained in subsec. (b)(1) of a prior section 1857a, of this title, act July 14, 1955, ch. 360, §2, 69 Stat. 322, prior to the general amendment of this chapter by Pub. L. 88-206.

AMENDMENTS

1970—Subsecs. (a), (b), Pub. L. 91-604 substituted "Administrator" for "Secretary" wherever appearing.

1967—Subsec. (c). Pub. L. 90-148 inserted declaration that it is the intent of Congress that no agreement or compact entered into between States after the date of enactment of the Air Quality Act of 1967, which for purposes of codification was changed to November 21, 1967, the date of approval of such Act, relating to the control and abatement of air pollution in an air quality control region, shall provide for participation by a State which is not included (in whole or in part) in such air quality control region.

§ 7403. Research, investigation, training, and other activities

(a) Research and development program for prevention and control of air pollution

The Administrator shall establish a national research and development program for the prevention and control of air pollution and as part of such program shall—

(1) conduct, and promote the coordination and acceleration of, research, investigations, experiments, demonstrations, surveys, and studies relating to the causes, effects (including health and welfare effects), extent, prevention, and control of air pollution;

(2) encourage, cooperate with, and render technical services and provide financial assistance to air pollution control agencies and other appropriate public or private agencies, institutions, and organizations, and individuals in the conduct of such activities;

(3) conduct investigations and research and make surveys concerning any specific problem of air pollution in cooperation with any air pollution control agency with a view to recommending a solution of such problem, if he is requested to do so by such agency or if, in his judgment, such problem may affect any community or communities in a State other than that in which the source of the matter causing or contributing to the pollution is located;

(4) establish technical advisory committees composed of recognized experts in various aspects of air pollution to assist in the examination and evaluation of research progress and proposals and to avoid duplication of research; and

(5) conduct and promote coordination and acceleration of training for individuals relating to the causes, effects, extent, prevention, and control of air pollution.

(b) Authorized activities of Administrator in establishing research and development program

In carrying out the provisions of the preceding subsection the Administrator is authorized to—

(1) collect and make available, through publications and other appropriate means, the results of and other information, including appropriate recommendations by him in connection therewith, pertaining to such research and other activities;

(2) cooperate with other Federal departments and agencies, with air pollution control agencies, with other public and private agencies, institutions, and organizations, and with any industries involved, in the preparation and conduct of such research and other activities;

(3) make grants to air pollution control agencies, to other public or nonprofit private agencies, institutions, and organizations, and to individuals, for purposes stated in subsection (a)(1) of this section;

(4) contract with public or private agencies, institutions, and organizations, and with individuals, without regard to section 3324(a) and (b) of title 31 and section 6101 of title 41;

(5) establish and maintain research fellowships, in the Environmental Protection Agency and at public or nonprofit private educational institutions or research organizations;

(6) collect and disseminate, in cooperation with other Federal departments and agencies, and with other public or private agencies, institutions, and organizations having related responsibilities, basic data on chemical, physical, and biological effects of varying air quality and other information pertaining to air pollution and the prevention and control thereof;

(7) develop effective and practical processes, methods, and prototype devices for the prevention or control of air pollution; and

(8) construct facilities, provide equipment, and employ staff as necessary to carry out this chapter.

In carrying out the provisions of subsection (a), the Administrator shall provide training for, and make training grants to, personnel of air pollution control agencies and other persons with suitable qualifications and make grants to such agencies, to other public or nonprofit private agencies, institutions, and organizations for the purposes stated in subsection (a)(5). Reasonable fees may be charged for such training provided to persons other than personnel of air pollution control agencies but such training shall be provided to such personnel of air pollution control agencies without charge.

(c) Air pollutant monitoring, analysis, modeling, and inventory research

In carrying out subsection (a), the Administrator shall conduct a program of research, testing, and development of methods for sampling, measurement, monitoring, analysis, and modeling of air pollutants. Such program shall include the following elements:

(1) Consideration of individual, as well as complex mixtures of, air pollutants and their chemical transformations in the atmosphere.

(2) Establishment of a national network to monitor, collect, and compile data with quantification of certainty in the status and trends of air emissions, deposition, air quality, surface water quality, forest condition, and visibility impairment, and to ensure the comparability of air quality data collected in different States and obtained from different nations.

(3) Development of improved methods and technologies for sampling, measurement, monitoring, analysis, and modeling to increase understanding of the sources of ozone precursors, ozone formation, ozone transport, regional influences on urban ozone, regional ozone trends, and interactions of ozone with other pollutants. Emphasis shall be placed on those techniques which—

(A) improve the ability to inventory emissions of volatile organic compounds and nitrogen oxides that contribute to urban air pollution, including anthropogenic and natural sources;

(B) improve the understanding of the mechanism through which anthropogenic and biogenic volatile organic compounds react to form ozone and other oxidants; and

(C) improve the ability to identify and evaluate region-specific prevention and control options for ozone pollution.

(4) Submission of periodic reports to the Congress, not less than once every 5 years, which evaluate and assess the effectiveness of air pollution control regulations and programs using monitoring and modeling data obtained pursuant to this subsection.

(d) Environmental health effects research

(1) The Administrator, in consultation with the Secretary of Health and Human Services, shall conduct a research program on the short-term and long-term effects of air pollutants, including wood smoke, on human health. In conducting such research program the Administrator—

(A) shall conduct studies, including epidemiological, clinical, and laboratory and field studies, as necessary to identify and evaluate exposure to and effects of air pollutants on human health;

(B) may utilize, on a reimbursable basis, the facilities of existing Federal scientific laboratories and research centers; and

(C) shall consult with other Federal agencies to ensure that similar research being conducted in other agencies is coordinated to avoid duplication.

(2) In conducting the research program under this subsection, the Administrator shall develop

methods and techniques necessary to identify and assess the risks to human health from both routine and accidental exposures to individual air pollutants and combinations thereof. Such research program shall include the following elements:

(A) The creation of an Interagency Task Force to coordinate such program. The Task Force shall include representatives of the National Institute for Environmental Health Sciences, the Environmental Protection Agency, the Agency for Toxic Substances and Disease Registry, the National Toxicology Program, the National Institute of Standards and Technology, the National Science Foundation, the Surgeon General, and the Department of Energy. This Interagency Task Force shall be chaired by a representative of the Environmental Protection Agency and shall convene its first meeting within 60 days after November 15, 1990.

(B) An evaluation, within 12 months after November 15, 1990, of each of the hazardous air pollutants listed under section 7412(b) of this title, to decide, on the basis of available information, their relative priority for preparation of environmental health assessments pursuant to subparagraph (C). The evaluation shall be based on reasonably anticipated toxicity to humans and exposure factors such as frequency of occurrence as an air pollutant and volume of emissions in populated areas. Such evaluation shall be reviewed by the Interagency Task Force established pursuant to subparagraph (A).

(C) Preparation of environmental health assessments for each of the hazardous air pollutants referred to in subparagraph (B), beginning 6 months after the first meeting of the Interagency Task Force and to be completed within 96 months thereafter. No fewer than 24 assessments shall be completed and published annually. The assessments shall be prepared in accordance with guidelines developed by the Administrator in consultation with the Interagency Task Force and the Science Advisory Board of the Environmental Protection Agency. Each such assessment shall include—

(i) an examination, summary, and evaluation of available toxicological and epidemiological information for the pollutant to ascertain the levels of human exposure which pose a significant threat to human health and the associated acute, subacute, and chronic adverse health effects;

(ii) a determination of gaps in available information related to human health effects and exposure levels; and

(iii) where appropriate, an identification of additional activities, including toxicological and inhalation testing, needed to identify the types or levels of exposure which may present significant risk of adverse health effects in humans.

(e) Ecosystem research

In carrying out subsection (a), the Administrator, in cooperation, where appropriate, with the Under Secretary of Commerce for Oceans and Atmosphere, the Director of the Fish and Wildlife Service, and the Secretary of Agri-

culture, shall conduct a research program to improve understanding of the short-term and long-term causes, effects, and trends of ecosystems damage from air pollutants on ecosystems. Such program shall include the following elements:

- (1) Identification of regionally representative and critical ecosystems for research.
- (2) Evaluation of risks to ecosystems exposed to air pollutants, including characterization of the causes and effects of chronic and episodic exposures to air pollutants and determination of the reversibility of those effects.
- (3) Development of improved atmospheric dispersion models and monitoring systems and networks for evaluating and quantifying exposure to and effects of multiple environmental stresses associated with air pollution.
- (4) Evaluation of the effects of air pollution on water quality, including assessments of the short-term and long-term ecological effects of acid deposition and other atmospherically derived pollutants on surface water (including wetlands and estuaries) and groundwater.
- (5) Evaluation of the effects of air pollution on forests, materials, crops, biological diversity, soils, and other terrestrial and aquatic systems exposed to air pollutants.
- (6) Estimation of the associated economic costs of ecological damage which have occurred as a result of exposure to air pollutants.

Consistent with the purpose of this program, the Administrator may use the estuarine research reserves established pursuant to section 1461 of title 16 to carry out this research.

(f) Liquefied Gaseous Fuels Spill Test Facility

(1) The Administrator, in consultation with the Secretary of Energy and the Federal Coordinating Council for Science, Engineering, and Technology, shall oversee an experimental and analytical research effort, with the experimental research to be carried out at the Liquefied Gaseous Fuels Spill Test Facility. In consultation with the Secretary of Energy, the Administrator shall develop a list of chemicals and a schedule for field testing at the Facility. Analysis of a minimum of 10 chemicals per year shall be carried out, with the selection of a minimum of 2 chemicals for field testing each year. Highest priority shall be given to those chemicals that would present the greatest potential risk to human health as a result of an accidental release—

- (A) from a fixed site; or
- (B) related to the transport of such chemicals.

(2) The purpose of such research shall be to—

- (A) develop improved predictive models for atmospheric dispersion which at a minimum—
 - (i) describe dense gas releases in complex terrain including man-made structures or obstacles with variable winds;
 - (ii) improve understanding of the effects of turbulence on dispersion patterns; and
 - (iii) consider realistic behavior of aerosols by including physicochemical reactions with water vapor, ground deposition, and removal by water spray;
- (B) evaluate existing and future atmospheric dispersion models by—

- (i) the development of a rigorous, standardized methodology for dense gas models; and

- (ii) the application of such methodology to current dense gas dispersion models using data generated from field experiments; and

(C) evaluate the effectiveness of hazard mitigation and emergency response technology for fixed site and transportation related accidental releases of toxic chemicals.

Models pertaining to accidental release shall be evaluated and improved periodically for their utility in planning and implementing evacuation procedures and other mitigative strategies designed to minimize human exposure to hazardous air pollutants released accidentally.

(3) The Secretary of Energy shall make available to interested persons (including other Federal agencies and businesses) the use of the Liquefied Gaseous Fuels Spill Test Facility to conduct research and other activities in connection with the activities described in this subsection.

(g) Pollution prevention and emissions control

(1) In general

In carrying out subsection (a), the Administrator shall conduct a basic engineering research and technology program to develop, evaluate, and demonstrate nonregulatory strategies and technologies for air pollution prevention.

(2) Participation requirement

Such strategies and technologies described in paragraph (1) shall be developed with priority on those pollutants which pose a significant risk to human health and the environment, and with opportunities for participation by industry, public interest groups, scientists, States, institutions of higher education, and other interested persons in the development of such strategies and technologies.

(3) Program inclusions

The program under this subsection shall include the following elements:

(A) Improvements in nonregulatory strategies and technologies for preventing or reducing multiple air pollutants, including sulfur oxides, nitrogen oxides, heavy metals, PM-10 (particulate matter), carbon monoxide, and carbon dioxide, from stationary sources, including fossil fuel power plants. Such strategies and technologies shall include improvements in the relative cost effectiveness and long-range implications of various air pollutant reduction and nonregulatory control strategies such as energy conservation, including end-use efficiency, and fuel-switching to cleaner fuels. Such strategies and technologies shall be considered for existing and new facilities.

(B) Improvements in nonregulatory strategies and technologies for reducing air emissions from area sources.

(C) Improvements in nonregulatory strategies and technologies for preventing, detecting, and correcting accidental releases of hazardous air pollutants.

(D) Improvements in nonregulatory strategies and technologies that dispose of tires in ways that avoid adverse air quality impacts.

(4) Effect of subsection

Nothing in this subsection shall be construed to authorize the imposition on any person of air pollution control requirements.

(5) Coordination and avoidance of duplication

The Administrator shall consult with other appropriate Federal agencies to ensure coordination and to avoid duplication of activities authorized under this subsection.

(6) Certain carbon dioxide activities**(A) In general**

In carrying out paragraph (3)(A) with respect to carbon dioxide, the Administrator—

- (i) is authorized to carry out the activities described in subparagraph (B); and
- (ii) shall carry out the activities described in subparagraph (C).

(B) Direct air capture research**(i) Definitions**

In this subparagraph:

(I) Board

The term “Board” means the Direct Air Capture Technology Advisory Board established by clause (iii)(I).

(II) Dilute

The term “dilute” means a concentration of less than 1 percent by volume.

(III) Direct air capture**(aa) In general**

The term “direct air capture”, with respect to a facility, technology, or system, means that the facility, technology, or system uses carbon capture equipment to capture carbon dioxide directly from the air.

(bb) Exclusion

The term “direct air capture” does not include any facility, technology, or system that captures carbon dioxide—

- (AA) that is deliberately released from a naturally occurring subsurface spring; or
- (BB) using natural photosynthesis.

(IV) Intellectual property

The term “intellectual property” means—

- (aa) an invention that is patentable under title 35; and
- (bb) any patent on an invention described in item (aa).

(ii) Technology prizes**(I) In general**

Not later than 1 year after December 27, 2020, the Administrator, in consultation with the Secretary of Energy, is authorized to establish a program to provide financial awards on a competitive basis for direct air capture from media in which the concentration of carbon dioxide is dilute.

(II) Duties

In carrying out this clause, the Administrator shall—

(aa) subject to subclause (III), develop specific requirements for—

- (AA) the competition process; and
- (BB) the demonstration of performance of approved projects;

(bb) offer financial awards for a project designed—

- (AA) to the maximum extent practicable, to capture more than 10,000 tons of carbon dioxide per year;
- (BB) to operate in a manner that would be commercially viable in the foreseeable future (as determined by the Board); and
- (CC) to improve the technologies or information systems that enable monitoring and verification methods for direct air capture projects; and

(cc) to the maximum extent practicable, make financial awards to geographically diverse projects, including at least—

- (AA) 1 project in a coastal State; and
- (BB) 1 project in a rural State.

(III) Public participation

In carrying out subclause (II)(aa), the Administrator shall—

- (aa) provide notice of and, for a period of not less than 60 days, an opportunity for public comment on, any draft or proposed version of the requirements described in subclause (II)(aa); and
- (bb) take into account public comments received in developing the final version of those requirements.

(iii) Direct Air Capture Technology Advisory Board**(I) Establishment**

The Administrator may establish an advisory board to be known as the “Direct Air Capture Technology Advisory Board”.

(II) Composition

The Board, on the establishment of the Board, shall be composed of 9 members appointed by the Administrator, who shall provide expertise in—

- (aa) climate science;
- (bb) physics;
- (cc) chemistry;
- (dd) biology;
- (ee) engineering;
- (ff) economics;
- (gg) business management; and
- (hh) such other disciplines as the Administrator determines to be necessary to achieve the purposes of this subparagraph.

(III) Term; vacancies**(aa) Term**

A member of the Board shall serve for a term of 6 years.

(bb) Vacancies

A vacancy on the Board—

(AA) shall not affect the powers of the Board; and

(BB) shall be filled in the same manner as the original appointment was made.

(IV) Initial meeting

Not later than 30 days after the date on which all members of the Board have been appointed, the Board shall hold the initial meeting of the Board.

(V) Meetings

The Board shall meet at the call of the Chairperson or on the request of the Administrator.

(VI) Quorum

A majority of the members of the Board shall constitute a quorum, but a lesser number of members may hold hearings.

(VII) Chairperson and Vice Chairperson

The Board shall select a Chairperson and Vice Chairperson from among the members of the Board.

(VIII) Compensation

Each member of the Board may be compensated at not to exceed the daily equivalent of the annual rate of basic pay in effect for a position at level V of the Executive Schedule under section 5316 of title 5 for each day during which the member is engaged in the actual performance of the duties of the Board.

(IX) Duties

The Board shall—

(aa) advise the Administrator on carrying out the duties of the Administrator under this subparagraph; and

(bb) provide other assistance and advice as requested by the Administrator.

(iv) Intellectual property

(I) In general

As a condition of receiving a financial award under this subparagraph, an applicant shall agree to vest the intellectual property of the applicant derived from the technology in 1 or more entities that are incorporated in the United States.

(II) Reservation of license

The United States—

(aa) may reserve a nonexclusive, nontransferable, irrevocable, paid-up license, to have practiced for or on behalf of the United States, in connection with any intellectual property described in subclause (I); but

(bb) shall not, in the exercise of a license reserved under item (aa), publicly disclose proprietary information relating to the license.

(III) Transfer of title

Title to any intellectual property described in subclause (I) shall not be transferred or passed, except to an entity that is incorporated in the United

States, until the expiration of the first patent obtained in connection with the intellectual property.

(v) Authorization of appropriations

There is authorized to be appropriated to carry out this subparagraph \$35,000,000, to remain available until expended.

(vi) Termination of authority

Notwithstanding section 14 of the Federal Advisory Committee Act (5 U.S.C. App.), the Board and all authority provided under this subparagraph shall terminate not later than 12 years after December 27, 2020.

(C) Deep saline formation report

(i) Definition of deep saline formation

(I) In general

In this subparagraph, the term “deep saline formation” means a formation of subsurface geographically extensive sedimentary rock layers saturated with waters or brines that have a high total dissolved solids content and that are below the depth where carbon dioxide can exist in the formation as a supercritical fluid.

(II) Clarification

In this subparagraph, the term “deep saline formation” does not include oil and gas reservoirs.

(ii) Report

In consultation with the Secretary of Energy, and, as appropriate, with the head of any other relevant Federal agency and relevant stakeholders, not later than 1 year after December 27, 2020, the Administrator shall prepare, submit to Congress, and make publicly available a report that includes—

(I) a comprehensive identification of potential risks and benefits to project developers associated with increased storage of carbon dioxide captured from stationary sources in deep saline formations, using existing research;

(II) recommendations for managing the potential risks identified under subclause (I), including potential risks unique to public land; and

(III) recommendations for Federal legislation or other policy changes to mitigate any potential risks identified under subclause (I).

(D) GAO report

Not later than 5 years after December 27, 2020, the Comptroller General of the United States shall submit to Congress a report that—

(i) identifies all Federal grant programs in which a purpose of a grant under the program is to perform research on carbon capture and utilization technologies, including direct air capture technologies; and

(ii) examines the extent to which the Federal grant programs identified pursuant to clause (i) overlap or are duplicative.

(h) NIEHS studies

(1) The Director of the National Institute of Environmental Health Sciences may conduct a program of basic research to identify, characterize, and quantify risks to human health from air pollutants. Such research shall be conducted primarily through a combination of university and medical school-based grants, as well as through intramural studies and contracts.

(2) The Director of the National Institute of Environmental Health Sciences shall conduct a program for the education and training of physicians in environmental health.

(3) The Director shall assure that such programs shall not conflict with research undertaken by the Administrator.

(4) There are authorized to be appropriated to the National Institute of Environmental Health Sciences such sums as may be necessary to carry out the purposes of this subsection.

(i) Coordination of research

The Administrator shall develop and implement a plan for identifying areas in which activities authorized under this section can be carried out in conjunction with other Federal ecological and air pollution research efforts. The plan, which shall be submitted to Congress within 6 months after November 15, 1990, shall include—

(1) an assessment of ambient monitoring stations and networks to determine cost effective ways to expand monitoring capabilities in both urban and rural environments;

(2) a consideration of the extent of the feasibility and scientific value of conducting the research program under subsection (e) to include consideration of the effects of atmospheric processes and air pollution effects; and

(3) a methodology for evaluating and ranking pollution prevention technologies, such as those developed under subsection (g), in terms of their ability to reduce cost effectively the emissions of air pollutants and other airborne chemicals of concern.

Not later than 2 years after November 15, 1990, and every 4 years thereafter, the Administrator shall report to Congress on the progress made in implementing the plan developed under this subsection, and shall include in such report any revisions of the plan.

(j) Continuation of national acid precipitation assessment program

(1) The acid precipitation research program set forth in the Acid Precipitation Act of 1980 [42 U.S.C. 8901 et seq.] shall be continued with modifications pursuant to this subsection.

(2) The Acid Precipitation Task Force shall consist of the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of the Interior, the Secretary of Agriculture, the Administrator of the National Oceanic and Atmospheric Administration, the Administrator of the National Aeronautics and Space Administration, and such additional members as the President may select. The President shall appoint a chairman for the Task Force from among its members within 30 days after November 15, 1990.

(3) The responsibilities of the Task Force shall include the following:

(A) Review of the status of research activities conducted to date under the comprehensive research plan developed pursuant to the Acid Precipitation Act of 1980 [42 U.S.C. 8901 et seq.], and development of a revised plan that identifies significant research gaps and establishes a coordinated program to address current and future research priorities. A draft of the revised plan shall be submitted by the Task Force to Congress within 6 months after November 15, 1990. The plan shall be available for public comment during the 60 day period after its submission, and a final plan shall be submitted by the President to the Congress within 45 days after the close of the comment period.

(B) Coordination with participating Federal agencies, augmenting the agencies' research and monitoring efforts and sponsoring additional research in the scientific community as necessary to ensure the availability and quality of data and methodologies needed to evaluate the status and effectiveness of the acid deposition control program. Such research and monitoring efforts shall include, but not be limited to—

(i) continuous monitoring of emissions of precursors of acid deposition;

(ii) maintenance, upgrading, and application of models, such as the Regional Acid Deposition Model, that describe the interactions of emissions with the atmosphere, and models that describe the response of ecosystems to acid deposition; and

(iii) analysis of the costs, benefits, and effectiveness of the acid deposition control program.

(C) Publication and maintenance of a National Acid Lakes Registry that tracks the condition and change over time of a statistically representative sample of lakes in regions that are known to be sensitive to surface water acidification.

(D) Submission every two years of a unified budget recommendation to the President for activities of the Federal Government in connection with the research program described in this subsection.

(E) Beginning in 1992 and biennially thereafter, submission of a report to Congress describing the results of its investigations and analyses. The reporting of technical information about acid deposition shall be provided in a format that facilitates communication with policymakers and the public. The report shall include—

(i) actual and projected emissions and acid deposition trends;

(ii) average ambient concentrations of acid deposition precursors² and their transformation products;

(iii) the status of ecosystems (including forests and surface waters), materials, and visibility affected by acid deposition;

(iv) the causes and effects of such deposition, including changes in surface water quality and forest and soil conditions;

(v) the occurrence and effects of episodic acidification, particularly with respect to high elevation watersheds; and

²So in original. Probably should be "precursors".

(vi) the confidence level associated with each conclusion to aid policymakers in use of the information.

(F) Beginning in 1996, and every 4 years thereafter, the report under subparagraph (E) shall include—

(i) the reduction in deposition rates that must be achieved in order to prevent adverse ecological effects; and

(ii) the costs and benefits of the acid deposition control program created by subchapter IV–A of this chapter.

(k) Air pollution conferences

If, in the judgment of the Administrator, an air pollution problem of substantial significance may result from discharge or discharges into the atmosphere, the Administrator may call a conference concerning this potential air pollution problem to be held in or near one or more of the places where such discharge or discharges are occurring or will occur. All interested persons shall be given an opportunity to be heard at such conference, either orally or in writing, and shall be permitted to appear in person or by representative in accordance with procedures prescribed by the Administrator. If the Administrator finds, on the basis of the evidence presented at such conference, that the discharge or discharges if permitted to take place or continue are likely to cause or contribute to air pollution subject to abatement under this part, the Administrator shall send such findings, together with recommendations concerning the measures which the Administrator finds reasonable and suitable to prevent such pollution, to the person or persons whose actions will result in the discharge or discharges involved; to air pollution agencies of the State or States and of the municipality or municipalities where such discharge or discharges will originate; and to the interstate air pollution control agency, if any, in the jurisdictional area of which any such municipality is located. Such findings and recommendations shall be advisory only, but shall be admitted together with the record of the conference, as part of the proceedings under subsections (b), (c), (d), (e), and (f) of section 7408 of this title.

(July 14, 1955, ch. 360, title I, §103, formerly §3, as added Pub. L. 88–206, §1, Dec. 17, 1963, 77 Stat. 394; renumbered §103 and amended Pub. L. 89–272, title I, §§101(3), 103, Oct. 20, 1965, 79 Stat. 992, 996; Pub. L. 90–148, §2, Nov. 21, 1967, 81 Stat. 486; Pub. L. 91–604, §§2(a), 4(2), 15(a)(2), (c)(2), Dec. 31, 1970, 84 Stat. 1676, 1689, 1710, 1713; Pub. L. 95–95, title I, §101(a), (b), Aug. 7, 1977, 91 Stat. 686, 687; Pub. L. 101–549, title IX, §901(a)–(c), Nov. 15, 1990, 104 Stat. 2700–2703; Pub. L. 116–260, div. S, §102(b), Dec. 27, 2020, 134 Stat. 2243.)

REFERENCES IN TEXT

Section 14 of the Federal Advisory Committee Act, referred to in subsec. (g)(6)(B)(vi), is section 14 of Pub. L. 92–463, which is set out in the Appendix to Title 5, Government Organization and Employees.

The Acid Precipitation Act of 1980, referred to in subsec. (j)(1), (3)(A), is title VII of Pub. L. 96–294, June 30, 1980, 94 Stat. 770, which is classified generally to chapter 97 (§8901 et seq.) of this title. For complete classification of this Act to the Code, see Short Title note set out under section 8901 of this title and Tables.

CODIFICATION

In subsec. (b)(4), “section 3324(a) and (b) of title 31 and section 6101 of title 41” substituted for “sections 3648 and 3709 of the Revised Statutes (31 U.S.C. 529; 41 U.S.C. 5)” on authority of Pub. L. 97–258, §4(b), Sept. 13, 1982, 96 Stat. 1067, which Act enacted Title 31, Money and Finance, and Pub. L. 111–350, §6(c), Jan. 4, 2011, 124 Stat. 3854, which Act enacted Title 41, Public Contracts.

Section was formerly classified to section 1857b of this title.

PRIOR PROVISIONS

Provisions similar to those in subsec. (a)(3) of this section were contained in subsec. (a) of a prior section 1857b of this title, act July 14, 1955, ch. 360, §3, 69 Stat. 322, as amended Oct. 9, 1962, Pub. L. 87–761, §2, 76 Stat. 760, prior to the general amendment of this chapter by Pub. L. 88–206.

Provisions similar to those in this section were contained in prior sections 1857a to 1857d of this title, act July 14, 1955, ch. 360, §§2 to 5, 69 Stat. 322 (section 1857b as amended Oct. 9, 1962, Pub. L. 87–761, §2, 76 Stat. 760; section 1857d as amended Sept. 22, 1959, Pub. L. 86–365, §1, 73 Stat. 646 and Oct. 9, 1962, Pub. L. 87–761, §1, 76 Stat. 760), prior to the general amendment of this chapter by Pub. L. 88–206.

AMENDMENTS

2020—Subsec. (c)(3). Pub. L. 116–260, §102(b)(1), substituted “precursors” for “percursors” in introductory provisions.

Subsec. (g)(1). Pub. L. 116–260, §102(b)(2)(C)(iii), designated first sentence of introductory provisions as par. (1) and inserted heading. Former par. (1) redesignated subpar. (A) of par. (3).

Subsec. (g)(2). Pub. L. 116–260, §102(b)(2)(C)(ii), designated second sentence of introductory provisions as par. (2), inserted heading, substituted “Such strategies and technologies described in paragraph (1) shall be developed” for “Such strategies and technologies shall be developed”, and inserted “States, institutions of higher education,” after “scientists.”. Former par. (2) redesignated subpar. (B) of par. (3).

Subsec. (g)(3). Pub. L. 116–260, §102(b)(2)(C)(i), designated third sentence of introductory provisions as par. (3), inserted heading, and substituted “The program under this subsection” for “Such program”. Former par. (3) redesignated subpar. (C) of par. (3).

Subsec. (g)(3)(A) to (D). Pub. L. 116–260, §102(b)(2)(A), redesignated pars. (1) to (4) of subsec. (g) as subpars. (A) to (D), respectively, of par. (3).

Subsec. (g)(4), (5). Pub. L. 116–260, §102(b)(2)(B), designated first and second sentences of concluding provisions as pars. (4) and (5), respectively, and inserted headings. Former par. (4) redesignated subpar. (D) of par. (3).

Subsec. (g)(6). Pub. L. 116–260, §102(b)(2)(D), added par. (6).

1990—Subsec. (a)(1). Pub. L. 101–549, §901(a)(1), inserted “(including health and welfare effects)” after “effects”.

Subsec. (b)(8). Pub. L. 101–549, §901(a)(2), which directed amendment of subsec. (b) by adding par. (8) at end, was executed by adding par. (8) after par. (7) to reflect the probable intent of Congress.

Subsecs. (c) to (f). Pub. L. 101–549, §901(b), amended subsecs. (c) to (f) generally, substituting present provisions for provisions which related to: in subsec. (c), results of other scientific studies; in subsec. (d), construction of facilities; in subsec. (e), potential air pollution problems, conferences, and findings and recommendations of the Administrator; and, in subsec. (f), accelerated research programs.

Subsecs. (g) to (k). Pub. L. 101–549, §901(c), added subsecs. (g) to (k).

1977—Subsec. (a). Pub. L. 95–95, §101(b), struck out reference to “training” in par. (1) and added par. (5).

Subsec. (b). Pub. L. 95–95, §101(a), struck out par. (5) which provided for training and training grants to per-

sonnel of air pollution control agencies and other persons with suitable qualifications, redesignated pars. (6), (7), and (8) as (5), (6), and (7), respectively, and, following par. (7) as so redesignated, inserted provisions directing the Administrator, in carrying out subsec. (a), to provide training for, and make training grants to, personnel of air pollution control agencies and other persons with suitable qualifications and to make grants to such agencies, to other public or nonprofit private agencies, institutions, and organizations for the purposes stated in subsec. (a)(5) and allowing reasonable fees to be charged for such training provided to persons other than personnel of air pollution control agencies but requiring that such training be provided to such personnel of air pollution control agencies without charge.

1970—Subsec. (a). Pub. L. 91-604, §15(c)(2), substituted “Administrator” for “Secretary”.

Subsec. (b). Pub. L. 91-604, §15(c)(2), substituted “Administrator” for “Secretary” and “Environmental Protection Agency” for “Department of Health, Education, and Welfare”.

Subsec. (c). Pub. L. 91-604, §15(a)(2), (c)(2), substituted “Administrator” for “Secretary” and “air pollutants” for “air pollution agents (or combinations of agents)”.

Subsec. (d). Pub. L. 91-604, §15(c)(2), substituted “Administrator” for “Secretary”.

Subsec. (e). Pub. L. 91-604, §15(c)(2), substituted “Administrator” for “Secretary” wherever appearing, substituted “7415” for “7415(a)”, and inserted references to subsecs. (b) and (c) of section 7415 of this title.

Subsec. (f). Pub. L. 91-604, §2(a), added subsec. (f).

1967—Subsec. (a). Pub. L. 90-148 substituted “establish technical advisory committees composed of recognized experts in various aspects of air pollution to assist in the examination and evaluation of research progress and proposals and to avoid duplication of research” for “initiate and conduct a program of research directed toward the development of improved, low-cost techniques for extracting sulfur from fuels” as cl. (4) and struck out cl. (5) which related to research programs relating to the control of hydrocarbon emissions from evaporation of gasoline and nitrogen and aldehyde oxide emission from gasoline and diesel powered vehicles and relating to the development of improved low-cost techniques to reduce emissions of oxides of sulfur produced by the combustion of sulfur-containing fuels.

Subsec. (c). Pub. L. 90-148 struck out provision for promulgation of criteria in the case of particular air pollution agents present in the air in certain quantities reflecting the latest scientific knowledge and allowing for availability and revision and provided for recommendation by Secretary of air quality criteria.

Subsec. (e). Pub. L. 90-148 substituted references to subsections (d), (e), and (f) of section 7415 of this title for references to subsections (c), (d), and (e) of section 7415 of this title in provision for admission of advisory findings and recommendations together with the record of the conference and made such findings and recommendations part of the proceedings of the conference, not merely part of the record of proceedings.

1965—Subsec. (a)(5). Pub. L. 89-272, §103(3), added par. (5).

Subsecs. (d), (e). Pub. L. 89-272, §103(4), added subsecs. (d) and (e).

EFFECTIVE DATE OF 1977 AMENDMENT

Amendment by Pub. L. 95-95 effective Aug. 7, 1977, except as otherwise expressly provided, see section 406(d) of Pub. L. 95-95, set out as a note under section 7401 of this title.

TERMINATION OF REPORTING REQUIREMENTS

For termination, effective May 15, 2000, of provisions in subsec. (i) of this section requiring quadrennial reports to Congress and of reporting provisions in subsec. (j)(3)(E) and (F) of this section, see section 3003 of Pub. L. 104-66, as amended, set out as a note under section

1113 of Title 31, Money and Finance, and the 7th and 8th items on page 163 of House Document No. 103-7.

MODIFICATION OR RESCISSION OF RULES, REGULATIONS, ORDERS, DETERMINATIONS, CONTRACTS, CERTIFICATIONS, AUTHORIZATIONS, DELEGATIONS, AND OTHER ACTIONS

All rules, regulations, orders, determinations, contracts, certifications, authorizations, delegations, or other actions duly issued, made, or taken by or pursuant to act July 14, 1955, the Clean Air Act, as in effect immediately prior to the date of enactment of Pub. L. 95-95 [Aug. 7, 1977] to continue in full force and effect until modified or rescinded in accordance with act July 14, 1955, as amended by Pub. L. 95-95 [this chapter], see section 406(b) of Pub. L. 95-95, set out as an Effective Date of 1977 Amendment note under section 7401 of this title.

TERMINATION OF ADVISORY COMMITTEES

Advisory committees in existence on Jan. 5, 1973, to terminate not later than the expiration of the 2-year period following Jan. 5, 1973, unless, in the case of a committee established by the President or an officer of the Federal Government, such committee is renewed by appropriate action prior to the expiration of such 2-year period, or in the case of a committee established by the Congress, its duration is otherwise provided by law. See section 14 of Pub. L. 92-463, Oct. 6, 1972, 86 Stat. 776, set out in the Appendix to Title 5, Government Organization and Employees.

PILOT DESIGN PROGRAMS

Pub. L. 106-246, div. B, title II, §2603, July 13, 2000, 114 Stat. 558, required the Administrator of the Environmental Protection Agency to make grants to carry out a 2-year program to implement in five metropolitan areas pilot design programs and report to Congress on the results not later than 360 days from first day of the second year of the 2-year program.

NATIONAL ACID LAKES REGISTRY

Pub. L. 101-549, title IV, §405, Nov. 15, 1990, 104 Stat. 2632, provided that: “The Administrator of the Environmental Protection Agency shall create a National Acid Lakes Registry that shall list, to the extent practical, all lakes that are known to be acidified due to acid deposition, and shall publish such list within one year of the enactment of this Act [Nov. 15, 1990]. Lakes shall be added to the registry as they become acidic or as data becomes available to show they are acidic. Lakes shall be deleted from the registry as they become non-acidic.”

ASSESSMENT OF INTERNATIONAL AIR POLLUTION CONTROL TECHNOLOGIES

Pub. L. 101-549, title IX, §901(e), Nov. 15, 1990, 104 Stat. 2706, directed Administrator of Environmental Protection Agency to conduct a study that compares international air pollution control technologies of selected industrialized countries to determine if there exist air pollution control technologies in countries outside the United States that may have beneficial applications to this Nation’s air pollution control efforts, including, with respect to each country studied, the topics of urban air quality, motor vehicle emissions, toxic air emissions, and acid deposition, and within 2 years after Nov. 15, 1990, submit to Congress a report detailing the results of such study.

WESTERN STATES ACID DEPOSITION RESEARCH

Pub. L. 101-549, title IX, §901(g), Nov. 15, 1990, 104 Stat. 2707, provided that:

“(1) The Administrator of the Environmental Protection Agency shall sponsor monitoring and research and submit to Congress annual and periodic assessment reports on—

“(A) the occurrence and effects of acid deposition on surface waters located in that part of the United States west of the Mississippi River;

“(B) the occurrence and effects of acid deposition on high elevation ecosystems (including forests, and surface waters); and

“(C) the occurrence and effects of episodic acidification, particularly with respect to high elevation watersheds.

“(2) The Administrator of the Environmental Protection Agency shall analyze data generated from the studies conducted under paragraph (1), data from the Western Lakes Survey, and other appropriate research and utilize predictive modeling techniques that take into account the unique geographic, climatological, and atmospheric conditions which exist in the western United States to determine the potential occurrence and effects of acid deposition due to any projected increases in the emission of sulfur dioxide and nitrogen oxides in that part of the United States located west of the Mississippi River. The Administrator shall include the results of the project conducted under this paragraph in the reports issued to Congress under paragraph (1).”

CONSULTATION WITH AND TRANSMISSION OF REPORTS AND STUDIES TO CONGRESSIONAL COMMITTEE

Pub. L. 95-95, title I, §101(c), Aug. 7, 1977, 91 Stat. 687, provided that: “The Administrator of the Environmental Protection Agency shall consult with the House Committee on Science and Technology [now Committee on Science, Space, and Technology] on the environmental and atmospheric research, development, and demonstration aspects of this Act [see Short Title of 1977 Amendment note set out under section 7401 of this title]. In addition, the reports and studies required by this Act that relate to research, development, and demonstration issues shall be transmitted to the Committee on Science and Technology [now Committee on Science, Space, and Technology] at the same time they are made available to other committees of the Congress.”

STUDY OF SUBSTANCES DISCHARGED FROM EXHAUSTS OF MOTOR VEHICLES

Pub. L. 86-493, June 8, 1960, 74 Stat. 162, directed Surgeon General of Public Health Service to conduct a thorough study for purposes of determining, with respect to the various substances discharged from exhausts of motor vehicles, the amounts and kinds of such substances which, from the standpoint of human health, it is safe for motor vehicles to discharge into the atmosphere under the various conditions under which such vehicles may operate, and, not later than two years after June 8, 1960, submit to Congress a report on results of the study, together with such recommendations, if any, based upon the findings made in such study, as he deemed necessary for the protection of the public health.

§ 7404. Research relating to fuels and vehicles

(a) Research programs; grants; contracts; pilot and demonstration plants; byproducts research

The Administrator shall give special emphasis to research and development into new and improved methods, having industry-wide application, for the prevention and control of air pollution resulting from the combustion of fuels. In furtherance of such research and development he shall—

(1) conduct and accelerate research programs directed toward development of improved, cost-effective techniques for—

(A) control of combustion byproducts of fuels,

(B) removal of potential air pollutants from fuels prior to combustion,

(C) control of emissions from the evaporation of fuels,

(D) improving the efficiency of fuels combustion so as to decrease atmospheric emissions, and

(E) producing synthetic or new fuels which, when used, result in decreased atmospheric emissions.¹

(2) provide for Federal grants to public or nonprofit agencies, institutions, and organizations and to individuals, and contracts with public or private agencies, institutions, or persons, for payment of (A) part of the cost of acquiring, constructing, or otherwise securing for research and development purposes, new or improved devices or methods having industry-wide application of preventing or controlling discharges into the air of various types of pollutants; (B) part of the cost of programs to develop low emission alternatives to the present internal combustion engine; (C) the cost to purchase vehicles and vehicle engines, or portions thereof, for research, development, and testing purposes; and (D) carrying out the other provisions of this section, without regard to section 3324(a) and (b) of title 31 and section 6101 of title 41: *Provided*, That research or demonstration contracts awarded pursuant to this subsection (including contracts for construction) may be made in accordance with, and subject to the limitations provided with respect to research contracts of the military departments in, section 2353 of title 10, except that the determination, approval, and certification required thereby shall be made by the Administrator; *Provided further*, That no grant may be made under this paragraph in excess of \$1,500,000;

(3) determine, by laboratory and pilot plant testing, the results of air pollution research and studies in order to develop new or improved processes and plant designs to the point where they can be demonstrated on a large and practical scale;

(4) construct, operate, and maintain, or assist in meeting the cost of the construction, operation, and maintenance of new or improved demonstration plants or processes which have promise of accomplishing the purposes of this chapter;²

(5) study new or improved methods for the recovery and marketing of commercially valuable byproducts resulting from the removal of pollutants.

(b) Powers of Administrator in establishing research and development programs

In carrying out the provisions of this section, the Administrator may—

(1) conduct and accelerate research and development of cost-effective instrumentation techniques to facilitate determination of quantity and quality of air pollutant emissions, including, but not limited to, automotive emissions;

(2) utilize, on a reimbursable basis, the facilities of existing Federal scientific laboratories;

(3) establish and operate necessary facilities and test sites at which to carry on the re-

¹ So in original. The period probably should be a semicolon.

² So in original. The word “and” probably should appear.