Public Law 96-310
96th Congress

An Act

To provide for a research, development, and demonstration program to achieve early technology applications for ocean thermal energy conversion systems, and for other purposes.

July 17, 1980
[H.R. 7474]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Ocean Thermal Energy Conversion Research, Development, and Demonstration Act".

Ocean Thermal Energy Conversion Research, Development, and Demonstration Act.
42 USC 9001 note.
42 USC 9001.

FINDINGS AND PURPOSES

SEC. 2. (a) The Congress finds that—

(1) the supply of nonrenewable fuels in the United States is slowly being depleted;

(2) alternative sources of energy must be developed;

(3) ocean thermal energy is a renewable energy resource that can make a significant contribution to the energy needs of the United States;

(4) the technology base for ocean thermal energy conversion has improved over the past two years, and has consequently lowered the technical risk involved in constructing moderate-sized pilot plants with an electrical generating capacity of about ten to forty megawatts;

(5) while the Federal ocean thermal energy conversion program has grown in size and scope over the past several years, it is in the national interest to accelerate efforts to commercialize ocean thermal energy conversion by building pilot and demonstration facilities and to begin planning for the commercial demonstration of ocean thermal energy conversion technology;

(6) a strong and innovative domestic industry committed to the commercialization of ocean thermal energy conversion must be established, and many competent domestic industrial groups are already involved in ocean thermal energy conversion research and development activity; and

(7) consistent with the findings of the Domestic Policy Review on Solar Energy, ocean thermal energy conversion energy can potentially contribute at least one-tenth of quad of energy per year by the year 2000.

(b) Therefore, the purpose of this Act is to accelerate ocean thermal energy conversion technology development to provide a technical base for meeting the following goals:

(1) demonstration by 1986 of at least one hundred megawatts of electrical capacity or energy product equivalent from ocean thermal energy conversion systems;

(2) demonstration by 1989 of at least five hundred megawatts of electrical capacity or energy product equivalent from ocean thermal energy conversion systems;

(3) achievement in the mid-1990's, for the gulf coast region of the continental United States and for islands in the United

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States, its possessions and its territories, an average cost of electricity or energy product equivalent produced by installed ocean thermal energy conversion systems that is competitive with conventional energy sources; and

(4) establish as a national goal ten thousand megawatts of electrical capacity or energy product equivalent from ocean thermal energy conversion systems by the year 1999.

COMPREHENSIVE PROGRAM MANAGEMENT PLAN

42 USC 9002.

SEC. 3. (a)(1) The Secretary is authorized and directed to prepare a comprehensive program management plan for the conduct under this Act of research, development, and demonstration activities consistent with the provisions of sections 4, 5, and 6.

Consultation.

(2) In the preparation of such plan, the Secretary shall consult with the Administrator of the National Oceanic and Atmospheric Administration, the Administrator of the Maritime Administration, the Administrator of the National Aeronautics and Space Administration, and the heads of such other Federal agencies and such public and private organizations as he deems appropriate.

Transmittal to congressional committees.

(b) The Secretary shall transmit the comprehensive program management plan to the Committee on Science and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate within nine months after the date of the enactment of this Act.

(c) The detailed description of the comprehensive plan under this section shall include, but need not be limited to—

(1) the anticipated research, development, and demonstration objectives to be achieved by the program;

(2) the program strategies and technology application and market development plans, including detailed milestone goals to be achieved during the next fiscal year for all major activities and projects;

(3) a five-year implementation schedule for program elements with associated budget and program management resources requirements;

(4) a detailed description of the functional organization of the program management including identification of permanent test facilities and of a lead center responsible for technology support and project management;

(5) the estimated relative financial contributions of the Federal Government and non-Federal participants in the pilot and demonstration projects;

(6) supporting research needed to solve problems which may inhibit or limit development of ocean thermal energy conversion systems; and

(7) an analysis of the environmental, economic, and societal impacts of ocean thermal energy conversion facilities.

Modifications, transmittal to Congress.

(d)(1) Concurrently with the submission of the President's annual budget for each subsequent year, the Secretary shall transmit to the Congress a detailed description of modifications which may be necessary to revise appropriately the comprehensive plan as then in effect, setting forth any changes in circumstances which may have occurred since the plan or the last previous modification thereof was transmitted in accordance with this section.

(2) Such description shall also include a detailed justification of any such changes, a detailed description of the progress made toward achieving the goals of this Act, a statement on the status of inter-

agency cooperation in meeting such goals, any comments on and recommendations for improvements in the comprehensive program management plan made by the Technical Panel established under section 8, and any legislative or other recommendations which the Secretary may have to help attain such goals.

RESEARCH AND DEVELOPMENT

SEC. 4. (a) The Secretary shall initiate research or accelerate existing research in areas in which the lack of knowledge limits development of ocean thermal energy conversion systems in order to achieve the purposes of this Act. 42 USC 9003.

(b) The Secretary shall conduct evaluations, arrange for tests, and disseminate to developers information, data, and materials necessary to support the design efforts undertaken pursuant to section 5. Specific technical areas to be addressed shall include, but not be limited to—

(1) interface requirements between the platform and cold water pipe;

(2) cold water pipe deployment techniques;

(3) heat exchangers;

(4) control system simulation;

(5) stationkeeping requirements; and

(6) energy delivery systems, such as electric cable or energy product transport.

(c) The Secretary shall, for the purpose of performing his reponsibilities pursuant to this Act, solicit proposals and evaluate any reasonable new or improved technology, a description of which is submitted to the Secretary in writing, which could lead or contribute to the development of ocean thermal energy conversion system technology.

PILOT AND DEMONSTRATION PLANTS

SEC. 5. (a) The Secretary is authorized to initiate a program to design, construct, and operate well instrumented ocean thermal energy conversion facilities of sufficient size to demonstrate the technical feasibility and potential economic feasibility of utilizing the various forms of ocean thermal energy conversion to displace non-renewable fuels. To achieve the goals of this section and to facilitate development of a strong industrial basis for the application of ocean thermal energy conversion system technology, at least two independent parallel demonstration projects shall be competitively selected. 42 USC 9004.

(b) The specific goals of the demonstration program shall include at a minimum—

(1) the demonstration of ocean thermal energy conversion technical feasibility through multiple pilot and demonstration plants with a combined capacity of at least one hundred megawatts of electrical capacity or energy product equivalent by the year 1986;

(2) the delivery of baseload electricity to utilities located on land or the production of commercially attractive quantities of energy product; and

(3) the continuous operation of each pilot and demonstration facility for a sufficient period of time to collect and analyze system performance and reliability data.

(c) In providing any financial assistance under this section, the Secretary shall (1) give full consideration to those projects which will

provide energy to United States offshore States, its territories, and its possessions and (2) seek satisfactory cost-sharing arrangements when he deems such arrangements to be appropriate.

TECHNOLOGY APPLICATION

Consultation.
42 USC 9005.

SEC. 6 (a) The Secretary shall, in consultation with the Administrator of the National Oceanic and Atmospheric Administration, the Administrator of the Maritime Administration, the Administrator of the National Aeronautics and Space Administration, and the Technical Panel established under section 8, prepare a comprehensive technology application and market development plan that will permit realization of the ten-thousand-megawatt national goal by the year 1999. Such plans shall include at a minimum—

(1) an assessment of those Government actions required to achieve a two-hundred- to four-hundred-megawatt electrical-commercial demonstration of ocean thermal energy conversion systems in time to have industry meet the goal contained in section 2(b)(2) including a listing of those financial, property, and patent right packages most likely to lead to early commercial demonstration at minimum cost to the Federal Government;

(2) an assessment of further Government actions required to permit expansion of the domestic ocean thermal energy conversion industry to meet the goal contained in section 2(b)(3);

(3) an analysis of further Government actions necessary to aid the industry in minimizing and removing any legal and institutional barriers such as the designation of a lead agency; and

(4) an assessment of the necessary Government actions to assist in eliminating economic uncertainties through financial incentives, such as loan guarantees, price supports, or other inducements.

Transmittal to Congress.

(b) The Secretary shall transmit such comprehensive technology application and market development plan to the Congress within three years after the date of enactment of this Act, and update the plan on an annual basis thereafter.

(c) As part of the competitive procurement initiative for design and construction of the pilot and demonstration projects authorized in section 10(c), each respondent shall include in its proposal (1) a plan leading to a full-scale, first-of-a-kind facility based on a proposed demonstration system; and (2) the financial and other contributions the respondent will make toward meeting the national goals.

PROGRAM SELECTION CRITERIA

42 USC 9006.

SEC. 7. The Secretary shall, in fulfilling his responsibilities under this Act, select program activities and set priorities which are consistent with the following criteria:

(1) realization of energy production costs for ocean thermal energy conversion systems that are competitive with costs from conventional energy production systems;

(2) encouragement of projects for which contributions to project costs are forthcoming from private, industrial, utility, or governmental entities for the purpose of sharing with the Federal Government the costs of purchasing and installing ocean thermal energy conversion systems;

(3) promotion of ocean thermal energy conversion facilities for coastal areas, islands, and isolated military institutions which are vulnerable to interruption in the fossil fuel supply;

(4) preference for and priority to persons and domestic firms whose base of operations is in the United States as will assure that the program under this Act promotes the development of a United States domestic technology for ocean thermal energy conversion; and

(5) preference for proposals for pilot and demonstration projects in which the respondents certify their intent to become an integral part of the industrial infrastructure necessary to meet the goals of this Act.

TECHNICAL PANEL

SEC. 8. (a) A Technical Panel of the Energy Research Advisory Board shall be established to advise the Board on the conduct of the ocean thermal energy conversion program. 42 USC 9007.

(b)(1) The Technical Panel shall be comprised of such representatives from domestic industry, universities, Government laboratories, financial, environmental and other organizations as the Chairman of the Energy Research Advisory Board deems appropriate based on his assessment of the technical and other qualifications of such representative. Membership.

(2) Members of the Technical Panel need not be members of the full Energy Research Advisory Board.

(c) The activities of the Technical Panel shall be in compliance with any laws and regulations guiding the activities of technical and fact-finding groups reporting to the Energy Research Advisory Board.

(d) The Technical Panel shall review and may make recommendations on the following items, among others: Review and recommendations.

(1) implementation and conduct of the programs established by this Act;

(2) definition of ocean thermal energy conversion system performance requirements for various user applications; and

(3) economic, technological, and environmental consequences of the deployment of ocean thermal energy conversion systems.

(e) The Technical Panel shall submit to the Energy Research Advisory Board on at least an annual basis a written report of its findings and recommendations with regard to the program. Such report, shall include at a minimum— Report, submittal to Board.

(1) a summary of the Panel's activities for the preceding year;

(2) an assessment and evaluation of the status of the programs mandated by this Act; and

(3) comments on and recommendations for improvements in the comprehensive program management plan required under section 3.

(f) After consideration of the Technical Panel report, the Energy Research Advisory Board shall submit such report, together with any comments such Board deems appropriate, to the Secretary. Submittal to Secretary.

(g) The heads of the departments, agencies, and instrumentalities of the executive branch of the Federal Government shall cooperate with the Technical Panel in carrying out the requirements of this section and shall furnish to the Technical Panel such information as the Technical Panel deems necessary to carry out this section. Cooperation by agency heads.

(h) The Secretary shall provide sufficient staff, funds, and other support as necessary to enable the Technical Panel to carry out the functions described in this section.

DEFINITIONS

42 USC 9008.

SEC. 9. As used in this Act, the term—

(1) "ocean thermal energy conversion" means a method of converting part of the heat from the Sun which is stored in the surface layers of a body of water into electrical energy or energy product equivalent;

(2) "energy product equivalent" means an energy carrier including, but not limited to, ammonia, hydrogen, or molten salts or an energy-intensive commodity, including, but not limited to, electrometals, fresh water, or nutrients for aquaculture; and

(3) "Secretary" means the Secretary of Energy.

AUTHORIZATION FOR APPROPRIATION

42 USC 9009.

SEC. 10. (a) There is hereby authorized to be appropriated to carry out the purposes of this Act the sum of $20,000,000 for operating expenses for the fiscal year ending September 30, 1981, in addition to any amounts authorized to be appropriated in the fiscal year 1981 Authorization Act pursuant to section 660 of Public Law 95-91.

42 USC 7270.

(b) There is hereby authorized to be appropriated to carry out the purposes of this Act the sum of $60,000,000 for operating expenses for the fiscal year ending September 30, 1982.

(c) Funds are hereby authorized to be appropriated for fiscal year 1981 to carry out the purposes of section 5 of this Act for plant and capital equipment as follows:

Project 81-ES-1, ocean thermal energy conversion demostration plants with a combined capacity of at least one hundred megawatts electrical or the energy product equivalent, sites to be determined, conceptual and preliminary design activities only $5,000,000.

(d) Funds are hereby authorized to be appropriated for fiscal year 1982 to carry out the purposes of section 5 of this Act for plant and capital equipment as follows:

Project 81-ES-1, ocean thermal energy conversion demonstration plants with a combined capacity of at least one hundred megawatts electrical or the energy product equivalent, sites to be determined, conceptual and preliminary design activities only $25,000,000.

Approved July 17, 1980.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 96-1092 (Comm. on Science and Technology).

SENATE REPORT No. 96-501 accompanying S. 1830 (Comm. on Energy and Natural Resources).

CONGRESSIONAL RECORD, Vol. 126 (1980):

Jan. 25, S. 1830 considered and passed Senate.

June 16, 17, H.R. 7474 considered and passed House.

June 28, considered and passed Senate, amended.

July 2, House concurred in Senate amendment to the title and concurred in Senate amendment to the text with an amendment; Senate concurred in House amendment.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 16, No. 29:

July 18, Presidential statement.