107TH CONGRESS
2D SESSION

S. 2599

To establish the Water Supply Technologies Program within the Office of Energy Efficiency and Renewable Energy of the Department of Energy, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JUNE 6, 2002

Mr. DOMENICI (for himself, Mr. KYL, and Mr. CRAPO) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

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A BILL

To establish the Water Supply Technologies Program within the Office of Energy Efficiency and Renewable Energy of the Department of Energy, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Water Supply Technologies Act of 2002''.

SEC. 2. FINDINGS.

Congress finds that—

(1) the understanding, use, and protection of water resources are matters of national and global security;

(2) increasing demand for water supply may dramatically alter population patterns and strain international relations;

(3) the remediation of many sites of the Department of Energy and the treatment of domestic water supplies require cost-effective, efficient removal of contaminants from water supplies;

(4) such remediation frequently involves knowledge and modeling of water transport at the surface and subsurface levels;

(5)(A) energy costs—

(i) are a major factor in the extraction, storage, treatment, and delivery of water; and

(ii) are particularly high in the case of desalination processes; and

(B) increased efficiencies in energy use, or use of renewable energy sources in treatment processes, can result in large cost savings;

(6)(A) most energy production technologies are highly water intensive;

(B) the energy industry is the second largest water user after agriculture;

(C) energy production requires a reliable, predictable water supply; and

(D) the limited availability of water is beginning to constrain construction of new powerplants;

(7) having strong expertise in geosciences, hydrology, chemistry, energy options, system modeling, and security technologies, the Department of Energy is well positioned to contribute to national efforts relating to water issues;

(8) modeling and simulation of water cycles on at least the scale of river basins can guide strategies affecting—

(A) site cleanup;

(B) agricultural use of land;

(C) industrial use of land;

(D) protection of the environment; and

(E) population expansion;

(9) municipal water systems are facing unfunded Federal mandates to remove heavy metals and other contaminants from water supplies;

(10) in the future, as water supplies are further stressed, municipal water systems may be forced to use water supplies that cannot, using existing technologies, be cost-effectively purified to meet clean water standards;

(11) many components of technologies used in the remediation of heavy metals and other contaminants at sites of the Department would aid municipal water systems in water purification;

(12) for municipal water systems, 2 of the most economically and technically challenging treatment processes are—

(A) reduction of arsenic levels; and

(B) desalination;

(13)(A) the security of water supplies is a growing concern; and

(B) there is an emerging need for real-time sensing, and reporting systems for early warnings to the public, of potentially hazardous contaminants in the drinking water supply;

(14) major water shortages along the United States-Mexico border—

(A) are projected to occur in the future; and

(B) could contribute to many issues affecting the border region; and

(15) research and development of the Department must be coordinated with research and development of other Federal agencies, each of which has responsibilities, interests, and capabilities to con-

tribute to solving the important problems described in this section.

SEC. 3. DEFINITIONS.

In this Act:

(1) ARSENIC REMOVAL PROGRAM.—The term ''arsenic removal program'' means the program carried out under section 4(d).

(2) DEPARTMENT.—The term ''Department'' means the Department of Energy.

(3) DEPUTY ASSISTANT SECRETARY.—The term ''Deputy Assistant Secretary'' means the Deputy Assistant Secretary for Water Supply Technologies in the Office of Energy Efficiency and Renewable Energy of the Department appointed under section 4(a)(2).

(4) DESALINATION PROGRAM.—The term ''desalination program'' means the program carried out under section 4(e).

(5) FOUNDATION.—The term ''Foundation'' means the American Water Works Association Research Foundation.

(6) INDIAN TRIBE.—The term ''Indian tribe'' has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b).

(7) PROGRAM.—The term ''Program'' means the Water Supply Technologies Program established by section 4(a)(1).

(8) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(9) WATER AND ENERGY SUSTAINABILITY PROGRAM.—The term ''water and energy sustainability program'' means the program carried out under section 4(f).

(10) WATER SUPPLY SECURITY PROGRAM.—The term ''water supply security program'' means the program carried out under section 4(g).

SEC. 4. WATER SUPPLY TECHNOLOGIES PROGRAM.

(a) ESTABLISHMENT.—

(1) IN GENERAL.—There is established within the Office of Energy Efficiency and Renewable Energy of the Department a program to be known as the ''Water Supply Technologies Program''.

(2) DEPUTY ASSISTANT SECRETARY.—The Secretary shall establish, and appoint an individual to fill, the position of Deputy Assistant Secretary for Water Supply Technologies.

(b) DUTIES.—

(1) IN GENERAL.—The Deputy Assistant Secretary shall carry out the Program, consisting of—

(A) the arsenic removal program under subsection (d);

(B) the desalination program under subsection (e);

(C) the water and energy sustainability program under subsection (f); and

(D) the water supply security program under subsection (g).

(2) CONTRACTUAL AUTHORITY.—In carrying out the duties of the Deputy Assistant Secretary, the Deputy Assistant Secretary may enter into contracts with—

(A) private industries;

(B) colleges and universities;

(C) national laboratories; and

(D) nonprofit organizations.

(c) OVERSIGHT.—The Secretary shall ensure that the results of research and development conducted by the Department that are relevant to the Program are communicated to the Deputy Assistant Secretary.

(d) ARSENIC REMOVAL PROGRAM.—

(1) IN GENERAL.—As soon as practicable after the date of enactment of this Act, the Deputy Assistant Secretary shall offer to enter into a contract with the Foundation under which the Foundation

shall carry out a research program to develop and demonstrate innovative arsenic removal technologies.

(2) TYPES OF RESEARCH.—In carrying out the arsenic removal program, the Foundation shall, to the maximum extent practicable, conduct research on means of—

(A) reducing energy costs incurred in using arsenic removal technologies;

(B) minimizing materials costs, operating costs, and maintenance costs incurred in using arsenic removal technologies; and

(C) minimizing any quantities of waste (especially hazardous waste) that result from use of arsenic removal technologies.

(3) WATER PURIFICATION TECHNOLOGIES.—In carrying out the arsenic removal program, the Foundation shall carry out peer-reviewed projects (including research projects and cost-shared demonstration projects in conjunction with municipal water systems) to develop and demonstrate water purification technologies.

(4) DEMONSTRATION PROJECTS.—

(A) ARID SOUTHWESTERN UNITED STATES.—In carrying out the arsenic removal program, the Foundation shall carry out at

least 3 demonstration projects to demonstrate the applicability of innovative arsenic removal technologies to the arid southwestern United States.

(B) RURAL COMMUNITIES AND INDIAN TRIBES.—Not less than 40 percent of the funds of the Department used for demonstration projects under the arsenic removal program shall be expended in partnership with rural communities or Indian tribes.

(5) EVALUATION OF COST EFFECTIVENESS.—In carrying out the arsenic removal program, the Foundation shall use WERC, A Consortium for Environmental Education and Technology Development, to evaluate the cost effectiveness of arsenic removal technologies used in the program.

(6) EDUCATION AND TRAINING.—In carrying out the arsenic removal program, the Deputy Assistant Secretary shall provide a mechanism for education, training, and technology transfer to be developed and implemented by WERC, A Consortium for Environmental Education and Technology Development.

(7) COORDINATION WITH OTHER PROGRAMS.—The Deputy Assistant Secretary, in conjunction with

the Administrator of the Environmental Protection Agency, shall ensure that activities under the arsenic removal program are coordinated with appropriate programs of the Environmental Protection Agency.

(8) REPORT.—Not later than 1 year after the date of commencement of the arsenic removal program, and annually thereafter, the Secretary shall submit to Congress a report on the results of the arsenic removal program.

(e) DESALINATION PROGRAM.—

(1) IN GENERAL.—The Deputy Assistant Secretary, in cooperation with the Commissioner of Reclamation, shall carry out a desalination program in accordance with the desalination technology progress plan developed under the matter under the heading ''WATER AND RELATED RESOURCES'' under the heading ''BUREAU OF RECLAMATION'' in title II of the Energy and Water Development Appropriations Act, 2002 (115 Stat. 498), and described in Senate Report 107–39.

(2) DESALINATION RESEARCH.—

(A) IN GENERAL.—Under the desalination program, Sandia National Laboratories and the Bureau of Reclamation shall coordinate desali-

nation research for next-generation desalination technology.

(B) REQUIRED RESEARCH ELEMENTS.—In conducting research under the desalination program, Sandia National Laboratories and the Bureau of Reclamation shall—

(i) focus on research relating to, and development and demonstration of, technologies that are appropriate for use in desalinating brackish groundwater and other saline water supplies; and

(ii) consider the use of renewable energy.

(3) CONSTRUCTION PROJECTS.—Under the desalination program, funds made available to carry out activities in the Tularosa Basin, New Mexico, may be used for construction projects, including completion of the National Desalination Research Center.

(4) STEERING COMMITTEE.—

(A) IN GENERAL.—The Deputy Assistant Secretary and the Commissioner of Reclamation shall jointly establish a steering committee for the desalination program.

(B) CHAIRPERSONS.—The steering committee shall be jointly chaired by 1 representative from the Program and 1 representative from the Bureau of Reclamation.

(f) WATER AND ENERGY SUSTAINABILITY PROGRAM.—

(1) IN GENERAL.—The Deputy Assistant Secretary shall carry out a program to ensure that sufficient quantities of water are available for the energy sector through development of modeling and analysis tools to assess and manage—

(A) competing demands for water by the energy sector and other categories of water users, including the agriculture sector, the energy sector, industry, domestic users, and the environment; and

(B) the impacts of energy production on the availability of water.

(2) REQUIRED ELEMENTS.—Under the water and energy sustainability program, the Deputy Assistant Secretary shall—

(A) in accordance with paragraph (3), develop a coordinated strategy to identify technology development and improved modeling ca-

pabilities needed to achieve the goal of continued water and energy sustainability;

(B) in accordance with paragraph (4), develop such advanced modeling and decision analysis tools as are necessary to assess and manage competing demands for water by various categories of water users specified in paragraph (1)(A); and

(C) in accordance with paragraph (5), carry out demonstration projects to test the models and tools developed under subparagraph (B).

(3) WATER AND ENERGY SUSTAINABILITY STRATEGY.—In developing the strategy under paragraph (2)(A), the Deputy Assistant Secretary shall—

(A) collaborate with water management agencies, universities, industry, and stakeholder groups to define issues and needs; and

(B) develop a coordinated science and technology strategy to support future water use decisions that include issues of energy sustainability.

(4) ADVANCED MODELING AND DECISION ANALYSIS TOOLS.—

(A) APPLICABLE SCALES.—Modeling and decision analysis tools developed under paragraph (2)(B) shall address water and energy availability issues—

(i) physically, on the scale of river basins; and

(ii) temporally, on scales ranging from seasons to decades.

(B) COORDINATION.—Modeling and decision analysis tools developed under paragraph (2)(B) shall be coordinated with global climate change predictive capabilities supported by the Federal Government.

(C) MODELING TOOLS.—Modeling tools developed under paragraph (2)(B) shall include tools for modeling the effects of—

(i) atmospheric, surface, and subsurface phenomena;

(ii) rural and urban populations and land use changes;

(iii) energy, agriculture, and other industrial demands;

(iv) energy impacts on water quality and quantity; and

(v) changing marketplace behaviors and other economic forces.

(D) DECISION ANALYSIS TOOLS.—Decision analysis tools developed under paragraph (2)(B) shall include tools to support water and energy resources planning through—

(i) provision of direct support for policy and planning decisions;

(ii) optimization of water use for the energy sector and other categories of water users specified in paragraph (1)(A); and

(iii) assessment of the potential benefits of new technologies to improve water and energy sustainability.

(5) DEMONSTRATION PROJECTS.—Demonstration projects carried out under paragraph (2)(C) shall—

(A) test water and energy modeling and decision analysis tools for 3 river basins, at least 1 of which includes an international border;

(B) focus on assessing water resources and managing competing demands for, and impacts on, water by the energy sector and other cat-

egories of water users specified in paragraph (1)(A); and

(C) be conducted in collaboration with water resources management organizations in the basins described in subparagraph (A).

(6) REPORT.—Not later than 1 year after the date of enactment of this Act, the Deputy Assistant Secretary shall submit to the Secretary and Congress a report on the water and energy sustainability program that—

(A) describes the elements required under paragraph (2); and

(B) makes recommendations for a management structure and research and development plan for the water and energy sustainability program that optimizes use of Federal resources and programs.

(g) WATER SUPPLY SECURITY PROGRAM.—

(1) IN GENERAL.—As soon as practicable after the date of enactment of this Act, the Deputy Assistant Secretary shall offer to enter into a contract with the Foundation under which the Foundation shall carry out a research program, in coordination with the Assistant to the President for Homeland Security, with the goal of developing low-cost, mass-

produced, micro-analytical systems to provide early warning of potentially hazardous contaminants in municipal water systems.

(2) REQUIRED ELEMENTS.—In carrying out the water supply security program, the Foundation shall, to the maximum extent practicable, develop—

(A) means of reducing monitoring costs, including technologies to replace expensive sampling and analysis used, as of the date of enactment of this Act, for routine regulatory compliance;

(B) innovative, cost-effective monitoring technologies for detection of—

(i) chemical and biological threats; and

(ii) chemicals and pharmaceuticals subject to current or potential future regulation; and

(C) rapid and effective methodologies to transform monitoring data into information for decisionmaking and automated response.

(3) MONITORING TECHNOLOGIES.—In carrying out the water supply security program, the Foundation, in conjunction with municipal water systems,

shall carry out peer-reviewed projects to develop and demonstrate monitoring technologies.

(4) REPORT.—Not later than 1 year after the date of implementation of the water supply security program, and annually thereafter, the Secretary shall submit to Congress a report on the results of the water supply security program.

(h) COST SHARING.—

(1) IN GENERAL.—Except as provided in paragraph (2), each demonstration project carried out under the Program shall be carried out on a cost-shared basis, as determined by the Secretary.

(2) IN-KIND CONTRIBUTIONS; WAIVERS.—With respect to a demonstration project, the Secretary may—

(A) accept in-kind contributions; and

(B) waive the cost-sharing requirement in appropriate circumstances.

(i) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section—

(1) $25,000,000 for fiscal year 2003, of which—

(A) $8,000,000 shall be used to carry out subsection (d);

(B) $6,000,000 shall be used to carry out subsection (e);

(C) $7,000,000 shall be used to carry out subsection (f); and

(D) $4,000,000 shall be used to carry out subsection (g); and

(2) such sums as are necessary for each fiscal year thereafter.

SEC. 5. EXTENSIONS OF COMPLIANCE DEADLINES FOR SMALL PUBLIC WATER SYSTEMS.

Section 1412(b)(10) of the Safe Drinking Water Act (42 U.S.C. 300g–1(b)(10)) is amended—

(1) by striking ''A national primary'' and inserting the following:

''(1) IN GENERAL.—Except as provided in paragraph (2), a national primary''; and

(2) by adding at the end the following:

''(2) EXTENSIONS.—

''(A) SMALL PUBLIC WATER SYSTEMS.—

''(i) IN GENERAL.—In accordance with the report submitted to Congress by the Administrator entitled 'Small System Arsenic Implementation Issues', in addition to any 2-year extension described in paragraph (1), the Administrator (or a

State, in the case of an individual system) may provide to a public water system that serves a population of not more than 10,000 an extension of 3 years in which to comply with a maximum contaminant level or treatment technique described in that paragraph.

''(ii) RENEWAL OF EXTENSIONS.—The Administrator (or a State, in the case of an individual system) may renew an extension granted to a small public water system under clause (i) if—

''(I) the small public water system serves a population of not more than 3,300; and

''(II) the small public water system demonstrates, to the satisfaction of the Administrator (or the State), that the small public water system is taking all practicable steps to meet the requirements of this title.

''(B) ALL PUBLIC WATER SYSTEMS.—In addition to any 2-year extension received under paragraph (1), the Administrator (or a State, in the case of an individual system) may pro-

vide to any public water system an extension of 4 years in which to comply with a maximum contaminant level or treatment technique described in that paragraph if the public water system is in the process of implementing arsenic removal technology developed under section 4(d) of the Water Supply Technologies Act of 2002.''.

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