Calendar No. 375

104TH CONGRESS S. 811

[Report No. 104-254]

# A BILL

To authorize research into the desalinization and reclamation of water and authorize a program for States, cities, or qualifying agencies desiring to own and operate a water desalinization or reclamation facility to develop such facilities, and for other purposes.

April 18, 1996

Reported with an amendment

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104th CONGRESS 2D Session



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To authorize research into the desalinization and reclamation of water and authorize a program for States, cities, or qualifying agencies desiring to own and operate a water desalinization or reclamation facility to develop such facilities, and for other purposes.

#### IN THE SENATE OF THE UNITED STATES

MAY 17 (legislative day, MAY 15), 1995

Mr. SIMON (for himself, Mr. REID, Mr. MOYNIHAN, Mr. BROWN, Mr. BRYAN, Mr. CAMPBELL, Mr. MACK, Mr. GRAHAM, Mrs. BOXER, Mrs. FEINSTEIN, and Mr. ROBB) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

April 18, 1996

Reported by Mr. CHAFEE, with an amendment

[Strike out all after the enacting clause and insert the part printed in italic]

# A BILL

To authorize research into the desalinization and reclamation of water and authorize a program for States, cities, or qualifying agencies desiring to own and operate a water desalinization or reclamation facility to develop such facilities, and for other purposes. Be it enacted by the Senate and House of Representa tives of the United States of America in Congress assembled,

#### **3 SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Water Desalinization
5 Research and Development Act of 1995".

# 6 SEC. 2. DECLARATION OF POLICY.

7 In view of the increasing shortage of usable surface
8 and ground water in many parts of the United States and
9 the world, it is the policy of the United States to—

10 (1) perform research to develop low-cost alter-11 natives for desalinization of saline water and rec-12 lamation of nonusable nonsaline water to provide 13 water of a quality suitable for environmental en-14 hancement, agricultural, industrial, municipal, and 15 other beneficial consumptive or nonconsumptive 16 uses; and

17 (2) provide, through cooperative activities with
18 local sponsors, desalinization and water reclamation
19 processes and facilities that provide proof-of-concept
20 demonstrations of advanced technologies for the pur21 pose of developing and conserving the water re22 sources of this Nation and the world.

#### 23 SEC. 3. DEFINITIONS.

24 In this Act:

1	(1) DESALINIZATION.—The term "desaliniza-
2	tion" means the use of any process or technique (by
3	itself or in conjunction with other processes or tech-
4	niques) for the removal and, when feasible, adapta-
5	tion to beneficial use, of organic and inorganic ele-
6	ments and compounds from saline water.
7	(2) Nonusable nonsaline water.—The
8	term "nonusable nonsaline water" that is not saline
9	water but, because it contains biological or other im-
10	<del>purities, is not usable water.</del>
11	(3) Reclamation.—The term "reclamation"
12	means the use of any process or techniques (by itself
13	or in conjunction with other processes or techniques)
14	for the removal and, when feasible, adaptation to
15	beneficial use, of organic and inorganic elements and
16	compounds from nonusable nonsaline water.
17	(4) SALINE WATER.—The term "saline water"
18	means sea water, brackish water, and other mineral-
19	ized or chemically impaired water.
20	(5) Sponsor.—The term "sponsor" means a
21	local, State, or interstate agency responsible for the
22	sale and delivery of usable water that has the legal
23	and financial authority and capability to provide the
24	financial and real property requirements needed for
25	a desalinization or reclamation facility.

 1
 (6) UNITED STATES.—The term "United

 2
 States" means the States of the United States, the

 3
 District of Columbia, the Commonwealth of Puerto

 4
 Rico, and the territories and possessions of the Unit 

 5
 ed States.

6 (7) USABLE WATER.—The term "usable water" 7 means water of a high quality suitable for environ-8 mental enhancement, agricultural, industrial, munic-9 ipal, and other beneficial consumptive or non-10 consumptive uses.

## 11 SEC. 4. RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—In order to gain basic knowledge
concerning the most efficient means by which usable water
can be produced from saline or nonusable nonsaline water,
the Secretary of the Interior, in consultation with the Secretary of the Army, shall conduct a basic research and
development program under this section.

18 (b) CONTENTS OF PROGRAM.—For the basic research
19 and development program, the Secretary of the Interior
20 shall—

(1) conduct, encourage, and promote fundamental scientific research and basic studies to develop
the best and most economical processes and methods
for converting saline water and nonusable nonsaline

1	water into usable water through research grants and
2	<del>contracts</del>
3	(A) to conduct research and technical de-
4	velopment work;
5	(B) to make studies in order to ascertain
6	the optimum mix of investment and operating
7	<del>costs;</del>
8	(C) to determine the best designs for dif-
9	ferent conditions of operation; and
10	(D) to investigate increasing the economic
11	efficiency of desalinization or reclamation proc-
12	esses by using the processes as dual-purpose co-
13	facilities with other processes involving the use
14	of water;
15	(2) study methods for the recovery of byprod-
16	ucts resulting from the desalinization or reclamation
17	of water to offset the costs of treatment and to re-
18	duce the environmental impact from those byprod-
19	ucts; and
20	(3) prepare a management plan for conduct of
21	the research and development program established
22	under this section.
23	(c) Coordination With Other Agencies.—

1	(1) IN GENERAL.—The Secretary of the Inte-
2	rior shall conduct activities under this section in co-
3	ordination with—
4	(A) the Department of Commerce, specifi-
5	cally with respect to marketing and inter-
6	national competition; and
7	(B)(i) the Departments of Defense, Agri-
8	culture, State, Health and Human Services,
9	and Energy;
10	(ii) the Environmental Protection Agency;
11	(iii) the Agency for International Develop-
12	ment; and
13	(iv) other concerned public and private en-
14	tities.
15	(2) OTHER AGENCIES.—In addition to the
16	agencies identified in paragraph $(1)$ , other interested
17	agencies may furnish appropriate resources to the
18	Secretary of the Interior to further the activities in
19	which such other agencies are interested.
20	(d) Availability of Research.—All research
21	sponsored or funded under this section shall be carried
22	out in such a manner that information, products, proc-
23	esses, and other developments resulting from Federal ex-
24	penditures or authorities shall (with exceptions necessary

for national defense and the protection of patent rights)
 be available to the general public.

3 (e) RELATIONSHIP TO ANTITRUST LAWS. Section 4 10 of the Federal Nonnuclear Energy Research and Devel-5 opment Act of 1974 (42 U.S.C. 5909) shall apply to the 6 activities of persons in connection with grants and con-7 tracts made by the Secretary of the Interior under this 8 section.

#### 9 SEC. 5. DESALINIZATION DEVELOPMENT PROGRAM.

10 (a) IN GENERAL.—The Secretary of the Interior and
11 the Secretary of the Army shall jointly—

12 (1) conduct a desalinization development pro13 gram; and

14 (2) in connection with the program, design and
 15 construct desalination facilities.

16 (b) Selection of Desalinization Development
17 Facilities.—

18 (1) APPLICATION.—A sponsor shall submit to
19 the Secretary of the Interior and Secretary of the
20 Army an application for the design and construction
21 of a facility and certification that the sponsor will
22 provide the required cost sharing.

23 (2) <u>SELECTION. Facilities shall be selected</u>
24 <u>subject to availability of Federal funds.</u>

25 (c) Cost Sharing.

1	(1) INITIAL COST.—The initial cost of a facility
2	shall include—
3	$(\Lambda)$ design costs;
4	$(\mathbf{B})$ construction costs;
5	(C) lands, easements, and rights-of-way
6	<del>costs;</del> and
7	(D) relocation costs.
8	(2) MINIMUM SPONSOR SHARE.—The sponsor
9	for a facility under the desalinization development
10	program shall pay, during construction, at least 25
11	percent of the initial cost of the facility, including
12	providing all lands, easements, and rights-of-way
13	and performing all related necessary relocations.
14	(3) Maximum federal share.—The See-
15	retary of the Interior and Secretary of the Army
16	shall pay not more than \$10,000,000 of the initial
17	<del>cost</del> of a facility.
18	(d) Operation and Maintenance.—Operation,
19	maintenance, repair, and rehabilitation of a desalinization
20	facility shall be the responsibility of the sponsor of the
21	facility.
22	(e) REVENUE.—All revenue generated from the sale
23	of usable water from a desalinization facility shall be re-
24	tained by the sponsor of the facility.

9

#### 1 SEC. 6. MISCELLANEOUS AUTHORITIES.

2 In carrying out sections 5 and 6, the Secretary of
3 the Interior and the Secretary of the Army may—

4 (1) accept technical and administrative assist-5 ance from a State or other public entities and from 6 private persons in connection with research and de-7 velopment activities relating to desalinization and 8 reclamation of water;

9 (2) enter into contracts or agreements stating 10 the purpose for which the assistance is contributed 11 and, in appropriate circumstances, providing for the 12 sharing of costs between the Secretary and such en-13 tities or persons;

14 (3) make grants to educational and scientific
15 institutions;

(4) contract with educational and scientific in stitutions and engineering and industrial firms;

(5) by competition or noncompetitive contract
or any other means, engage the services of necessary
personnel, industrial and engineering firms, and educational institutions;

(6) use the facilities and personnel of Federal,
State, municipal, and private scientific laboratories;
(7) contract for or establish and operate facilities and tests to conduct research, testing, and development necessary for the purposes of this Act;

1 (8) acquire processes, data, inventions, patent 2 applications, patents, licenses, lands, interests in 3 lands and water, facilities, and other property by 4 purchase, license, lease, or donation; 5 (9) assemble and maintain domestic and foreign 6 scientific literature and issue pertinent biblio-7 graphical data; 8 (10) conduct inspections and evaluations of do-9 mestic and foreign facilities and cooperate and par-10 ticipate in their development; 11 (11) conduct and participate in regional, na-12 tional, and international conferences relating to the 13 desalinization of water: 14 (12) coordinate, correlate, and publish informa-15 tion which will advance the development of the desa-16 linization of water; and 17 (13) cooperate with Federal, State, and munici-18 pal departments, agencies and instrumentalities, and 19 with private persons, firms, educational institutions, 20 and other organizations, including foreign govern-21 ments, departments, agencies, companies, and in-22 strumentalities, in effectuating the purposes of this 23 Act.

10

#### 1 SEC. 7. DESALINIZATION CONFERENCE.

2 (a) ESTABLISHMENT.—The President is requested to
3 instruct the Administrator of the Agency for International
4 Development to sponsor an international desalinization
5 conference within 1 year after the date of enactment of
6 this Act.

7 (b) PARTICIPANTS.—Participants in the conference 8 under subsection (a) should include scientists, private in-9 dustry experts, desalinization experts and operators, government officials from the nations that use and conduct 10 research on desalinization, and government officials from 11 nations that could benefit from low-cost desalinization 12 technology (particularly nations in the developing world), 13 and international financial institutions. 14

15 (c) PURPOSE.—The conference under subsection (a)
16 shall—

17 (1) explore promising new technologies and
18 methods to make affordable desalinization a reality
19 in the near term; and

20 (2) propose a research agenda and a plan of ac21 tion to guide longer-term development of practical
22 desalinization applications.

23 (d) FUNDING.

24 (1) AID FUNDS.—Funding for the conference
 25 under subsection (a) may come from operating or

program funds of the Agency for International De velopment.

3 (2) OTHER NATIONS.—The Agency for Inter4 national Development shall encourage financial and
5 other support from other nations, including those
6 that have desalinization technology and those that
7 might benefit from such technology.

#### 8 SEC. 8. REPORTS.

9 (a) IN GENERAL.—Not later than 1 year after follow-10 ing the date of enactment of this Act, and annually there-11 after, the Secretary of the Interior, in consultation with 12 the Secretary of the Army, shall prepare a report to the 13 President and Congress concerning the administration of 14 this Act.

15 (b) CONTENTS.—A report under subsection (a) shall
16 describe—

(1) the actions taken by the Secretary of the
Interior and the Secretary of the Army during the
calendar year preceding the year in the report is
submitted; and

21 (2) the actions planned for the following cal22 endar year.

#### 23 SEC. 11. AUTHORIZATION OF APPROPRIATIONS.

24 (a) RESEARCH AND DEVELOPMENT.—There are au25 thorized to be appropriated to carry out section 4—

 1
 (1) \$5,000,000 for fiscal year 1996;

 2
 (2) \$10,000,000 for fiscal year 1997; and

 3
 (3) such sums as are necessary for fiscal years

 4
 1998, 1999, and 2000.

5 (b) Desalinization Development Program. There are authorized to be appropriated to carry out see-6 7 tion 5 such sums as are necessary, up to a total of 8 \$50,000,000, for fiscal years 1996, 1997, 1998, 1999, and 9 2000, of which 50 percent shall be made available to the 10 Department of the Interior and 50 percent shall be made available to the civil works program of the Army Corps 11 12 of Engineers.

# 13 SECTION 1. SHORT TITLE.

14 This Act may be cited as the "Water Desalinization
15 Research and Development Act of 1996".

#### 16 SEC. 2. DECLARATION OF POLICY.

17 In view of the increasing shortage of usable surface and
18 ground water in many parts of the United States and the
19 world, it is the policy of the United States to—

(1) perform research to develop low-cost alternatives for desalinization of saline water and reclamation of nonusable nonsaline water to provide
water of a quality suitable for environmental enhancement, agricultural, industrial, municipal, and

other beneficial consumptive or nonconsumptive uses;
 and

3 (2) provide, through cooperative activities with
4 local sponsors, desalinization and water reclamation
5 processes and facilities that provide proof-of-concept
6 demonstrations of advanced technologies for the pur7 pose of developing and conserving the water resources
8 of this Nation and the world.

# 9 SEC. 3. DEFINITIONS.

10 In this Act:

11 (1) DESALINIZATION.—The term "desaliniza12 tion" means the use of any process or technique (by
13 itself or in conjunction with other processes or tech14 niques) for the removal and, when feasible, adapta15 tion to beneficial use, of organic and inorganic ele16 ments and compounds from saline water.

17 (2) NONUSABLE NONSALINE WATER.—The term
18 "nonusable nonsaline water" means water that is not
19 saline water but, because it contains biological or
20 other impurities, is not usable water.

21 (3) RECLAMATION.—The term "reclamation"
22 means the use of any process or technique (by itself
23 or in conjunction with other processes or techniques)
24 for the removal and, when feasible, adaptation to ben-

1	oficial use of organic and inorganic doments and
1	eficial use, of organic and inorganic elements and
2	compounds from nonusable nonsaline water.
3	(4) SALINE WATER.—The term "saline water"
4	means sea water, brackish water, and other mineral-
5	ized or chemically impaired water.
6	(5) Sponsor.—The term "sponsor" means a
7	local, State, or qualifying agency responsible for the
8	sale and delivery of usable water that has the legal
9	authority and financial capability to provide the fi-
10	nancial and real property requirements needed for a
11	desalinization or reclamation facility.
12	(6) UNITED STATES.—The term "United States"
13	means the States of the United States, the District of
14	Columbia, the Commonwealth of Puerto Rico, and the
15	territories and possessions of the United States.
16	(7) USABLE WATER.—The term "usable water"
17	means water of a high quality suitable for environ-
18	mental enhancement, agricultural, industrial, munic-
19	ipal, and other beneficial consumptive or non-
20	consumptive uses.
21	SEC. 4. RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—In order to gain basic knowledge
concerning the most efficient means by which usable water
can be produced from saline or nonusable nonsaline water,
the Secretary of the Interior, in consultation with the Sec-

retary of the Army, shall conduct a basic research and de velopment program under this section.

3 (b) CONTENTS OF PROGRAM.—For the basic research
4 and development program, the Secretary of the Interior
5 shall—

6 (1) conduct, encourage, and promote fundamen-7 tal scientific research and basic studies to develop the 8 best and most economical processes and methods for 9 converting saline water and nonusable nonsaline 10 water into usable water through research grants and 11 contracts—

12 (A) to conduct research and technical devel13 opment work;

14 (B) to make studies in order to ascertain
15 the optimum mix of investment and operating
16 costs;

17 (C) to determine the best designs for dif18 ferent conditions of operation; and

19(D) to investigate increasing the economic20efficiency of desalinization or reclamation proc-21esses by using the processes as dual-purpose co-22facilities with other processes involving the use of23water;

24 (2) study methods for the recovery of byproducts
25 resulting from the desalinization or reclamation of

1	water to offset the costs of treatment and to reduce the
2	environmental impact from those byproducts; and
3	(3) prepare a management plan for conduct of
4	the research and development program established
5	under this section.
6	(c) Coordination With Other Agencies.—
7	(1) IN GENERAL.—The Secretary of the Interior
8	shall conduct activities under this section in coordi-
9	nation with—
10	(A) the Department of Commerce, specifi-
11	cally with respect to marketing and inter-
12	national competition; and
13	(B)(i) the Departments of Defense, Agri-
14	culture, State, Health and Human Services, and
15	Energy;
16	(ii) the Environmental Protection Agency;
17	(iii) the Agency for International Develop-
18	ment; and
19	(iv) other concerned public and private en-
20	tities.
21	(2) Other Agencies.—In addition to the agen-
22	cies identified in paragraph (1), other interested
23	agencies may furnish appropriate resources to the
24	Secretary of the Interior to further the activities in
25	which such other agencies are interested.

1 (d) AVAILABILITY OF RESEARCH.—All research spon-2 sored or funded under this section shall be carried out in 3 such a manner that information, products, processes, and 4 other developments resulting from Federal expenditures or 5 authorities shall (with exceptions necessary for national de-6 fense and the protection of patent rights) be available to 7 the general public.

8 (e) RELATIONSHIP TO ANTITRUST LAWS.—Section 10 9 of the Federal Nonnuclear Energy Research and Develop-10 ment Act of 1974 (42 U.S.C. 5909) shall apply to the activi-11 ties of persons in connection with grants and contracts 12 made by the Secretary of the Interior under this section.

## 13 SEC. 5. DESALINIZATION DEVELOPMENT PROGRAM.

(a) IN GENERAL.—The Secretary of the Interior and
the Secretary of the Army shall jointly—

16 (1) conduct a desalinization development pro17 gram; and

(2) in connection with the program, design and
construct desalinization facilities.

20 (b) Selection of Desalinization Development
21 Facilities.—

(1) APPLICATION.—A sponsor shall submit to the
Secretary of the Interior and Secretary of the Army
an application for the design and construction of a

1	desalinization facility and certification that the spon-
2	sor will provide the required cost sharing.
3	(2) Selection.—Facilities shall be selected sub-
4	ject to availability of Federal funds.
5	(c) Cost Sharing.—
6	(1) INITIAL COST.—The initial cost of a facility
7	shall include—
8	(A) design costs;
9	(B) construction costs;
10	(C) lands, easements, and rights-of-way
11	costs; and
12	(D) relocation costs.
13	(2) Minimum sponsor share.—The sponsor for
14	a facility under the desalinization development pro-
15	gram shall pay, during construction, at least 25 per-
16	cent of the initial cost of the facility, including pro-
17	viding all lands, easements, and rights-of-way and
18	performing all related necessary relocations.
19	(3) Maximum federal share.—The Secretary
20	of the Interior and Secretary of the Army shall pay
21	not more than \$10,000,000 of the initial cost of a fa-
22	cility.
23	(d) Operation and Maintenance.—Operation,
24	maintenance, repair, and rehabilitation of a desalinization

facility shall be the responsibility of the sponsor of the facil ity.

3 (e) REVENUE.—All revenue generated from the sale of
4 usable water from a desalinization facility shall be retained
5 by the sponsor of the facility.

# 6 SEC. 6. MISCELLANEOUS AUTHORITIES.

7 In carrying out sections 4 and 5, the Secretary of the
8 Interior and the Secretary of the Army may—

9 (1) accept technical and administrative assist-10 ance from a State or other public entities and from 11 private persons in connection with research and de-12 velopment activities relating to desalinization and 13 reclamation of water;

(2) enter into contracts or agreements stating the
purpose for which the assistance is contributed and,
in appropriate circumstances, providing for the sharing of costs between the Secretary and such entities or
persons;

19 (3) make grants to educational and scientific in20 stitutions;

21 (4) contract with educational and scientific in22 stitutions and engineering and industrial firms;

23 (5) by competition or noncompetitive contract or
24 any other means, engage the services of necessary per-

1	sonnel, industrial and engineering firms, and edu-
2	cational institutions;
3	(6) use the facilities and personnel of Federal,
4	State, municipal, and private scientific laboratories;
5	(7) contract for or establish and operate facilities
6	and tests to conduct research, testing, and develop-
7	ment necessary for the purposes of this Act;
8	(8) acquire processes, data, inventions, patent
9	applications, patents, licenses, lands, interests in land
10	and water, facilities, and other property by purchase,
11	license, lease, or donation;
12	(9) assemble and maintain domestic and foreign
13	scientific literature and issue pertinent biblio-
14	graphical data;
15	(10) conduct inspections and evaluations of do-
16	mestic and foreign facilities and cooperate and par-
17	ticipate in their development;
18	(11) conduct and participate in regional, na-
19	tional, and international conferences relating to the
20	desalinization of water;
21	(12) coordinate, correlate, and publish informa-
22	tion that will advance the development of the desalin-
23	ization of water; and
24	(13) cooperate with Federal, State, and munici-
25	pal departments, agencies, and instrumentalities, and

with private persons, firms, educational institutions,
 and other organizations, including foreign govern ments, departments, agencies, companies, and instru mentalities, in effectuating the purposes of this Act.

# 5 SEC. 7. DESALINIZATION CONFERENCE.

6 (a) ESTABLISHMENT.—The President is requested to
7 instruct the Administrator of the Agency for International
8 Development to sponsor an international desalinization
9 conference within 1 year after the date of enactment of this
10 Act.

11 (b) PARTICIPANTS.—Participants in the conference 12 under subsection (a) should include scientists, private in-13 dustry experts, desalinization experts and operators, government officials from the nations that use and conduct re-14 15 search on desalinization, and government officials from nations that could benefit from low-cost desalinization tech-16 nology (particularly nations in the developing world), and 17 international financial institutions. 18

19 (c) PURPOSE.—The conference under subsection (a)
20 shall—

21 (1) explore promising new technologies and
22 methods to make affordable desalinization a reality in
23 the near term; and

1	(2) propose a research agenda and a plan of ac-
2	tion to guide longer-term development of practical de-
3	salinization applications.
4	(d) FUNDING.—
5	(1) AID FUNDS.—Funding for the conference
6	under subsection (a) may come from operating or
7	program funds of the Agency for International Devel-
8	opment.
9	(2) Other Nations.—The Agency for Inter-
10	national Development shall encourage financial and
11	other support from other nations, including those that
12	have desalinization technology and those that might
13	benefit from such technology.
14	SEC. 8. REPORTS.
15	(a) IN GENERAL.—Not later than 1 year after the date
16	of enactment of this Act, and annually thereafter, the Sec-
17	retary of the Interior, in consultation with the Secretary
18	of the Army, shall prepare a report to the President and
19	Congress concerning the administration of this Act.
20	

20 (b) CONTENTS.—A report under subsection (a) shall
21 describe—

(1) the actions taken by the Secretary of the Interior and the Secretary of the Army during the calendar year preceding the year in which the report is
submitted; and

(2) the actions planned for the following cal endar year.

# 3 SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

4 (a) RESEARCH AND DEVELOPMENT.—There are au5 thorized to be appropriated to carry out section 4—

6 (1) \$5,000,000 for fiscal year 1997; and

7 (2) \$7,500,000 for each of fiscal years 1998
8 through 2001.

9 (b) DESALINIZATION DEVELOPMENT PROGRAM.— 10 There are authorized to be appropriated to carry out section 11 5 such sums as are necessary, up to a total of \$40,000,000 12 for the period consisting of fiscal years 1997 through 2001, 13 of which 50 percent shall be made available to the Depart-14 ment of the Interior and 50 percent shall be made available 15 to the civil works program of the Army Corps of Engineers.