

107TH CONGRESS
1ST SESSION

H. R. 2460

To authorize appropriations for environmental research and development, scientific and energy research, development, and demonstration, and commercial application of energy technology programs, projects, and activities of the Department of Energy and of the Office of Air and Radiation of the Environmental Protection Agency, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JULY 11, 2001

Mr. BOEHLERT introduced the following bill; which was referred to the
Committee on Science

A BILL

To authorize appropriations for environmental research and development, scientific and energy research, development, and demonstration, and commercial application of energy technology programs, projects, and activities of the Department of Energy and of the Office of Air and Radiation of the Environmental Protection Agency, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

1 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

2 (a) SHORT TITLE.—This Act may be cited as the
3 “Comprehensive Energy Research and Technology Act of
4 2001”.

5 (b) TABLE OF CONTENTS.—The table of contents for
6 this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Findings.
- Sec. 3. Purposes.
- Sec. 4. Goals.
- Sec. 5. Definitions.
- Sec. 6. Authorizations.
- Sec. 7. Sense of Congress.

TITLE I—ENERGY CONSERVATION AND ENERGY EFFICIENCY

Subtitle A—Alternative Fuel Vehicles

- Sec. 101. Short title.
- Sec. 102. Definitions.
- Sec. 103. Pilot program.
- Sec. 104. Reports to Congress.
- Sec. 105. Authorization of appropriations.

Subtitle B—Distributed Energy Resources

- Sec. 121. Distributed energy resources research, development, demonstration,
and commercial application.
- Sec. 122. Program plan.
- Sec. 123. Report.

Subtitle C—Department of Energy Authorization of Appropriations

- Sec. 131. Authorization of appropriations.

Subtitle D—Environmental Protection Agency Office of Air and Radiation
Authorization of Appropriations

- Sec. 141. Short title.
- Sec. 142. Authorization of appropriations.
- Sec. 143. Limits on use of funds.
- Sec. 144. Cost sharing.
- Sec. 145. Limitation on demonstration and commercial applications of energy
technology.
- Sec. 146. Reprogramming.
- Sec. 147. Budget request format.
- Sec. 148. Other provisions.

TITLE II—RENEWABLE ENERGY

Subtitle A—Hydrogen

- Sec. 201. Short title.
- Sec. 202. Purposes.
- Sec. 203. Definitions.
- Sec. 204. Reports to Congress.
- Sec. 205. Hydrogen research and development.
- Sec. 206. Demonstrations.
- Sec. 207. Technology transfer.
- Sec. 208. Coordination and consultation.
- Sec. 209. Advisory committee.
- Sec. 210. Authorization of appropriations.
- Sec. 211. Repeal.

Subtitle B—Bioenergy

- Sec. 221. Short title.
- Sec. 222. Findings.
- Sec. 223. Definition.
- Sec. 224. Authorization.
- Sec. 225. Authorization of appropriations.

Subtitle C—Department of Energy Authorization of Appropriations

- Sec. 241. Authorization of appropriations.

TITLE III—NUCLEAR ENERGY

Subtitle A—University Nuclear Science and Engineering

- Sec. 301. Short title.
- Sec. 302. Findings.
- Sec. 303. Department of Energy program.
- Sec. 304. Authorization of appropriations.

Subtitle B—Spent Nuclear Fuel and Fuel Cycle Research, Development, and Demonstration

- Sec. 321. Office of Spent Nuclear Fuel Research.
- Sec. 322. Advanced fuel recycling technology research and development program.

Subtitle C—Department of Energy Authorization of Appropriations

- Sec. 341. Nuclear Energy Research Initiative.
- Sec. 342. Nuclear Energy Plant Optimization program.
- Sec. 343. Nuclear energy technologies.
- Sec. 344. Authorization of appropriations.

TITLE IV—FOSSIL ENERGY

Subtitle A—Clean Coal

- Sec. 401. Short title.
- Sec. 402. Findings.
- Sec. 403. Definition.
- Sec. 404. Clean Coal Power Initiative.
- Sec. 405. Authorization of appropriations.
- Sec. 406. Limit on use of funds.

Subtitle B—Oil and Gas

- Sec. 421. Petroleum-oil technology.
- Sec. 422. Gas.
- Sec. 423. Unconventional and ultra-deepwater natural gas and petroleum.

Subtitle C—Fuel Cells

- Sec. 441. Fuel cells.

Subtitle D—Authorization of Appropriations

- Sec. 461. Authorization of appropriations.

TITLE V—SCIENCE

Subtitle A—Fusion Energy Sciences

- Sec. 501. Short title.
- Sec. 502. Findings.
- Sec. 503. Plan for fusion experiment.
- Sec. 504. Plan for Fusion Energy Sciences Program.
- Sec. 505. Authorization of appropriations.

Subtitle B—Spallation Neutron Source

- Sec. 521. Definition.
- Sec. 522. Authorization of appropriations.
- Sec. 523. Report.
- Sec. 524. Limitations.

Subtitle C—Facilities, Infrastructure, and User Facilities

- Sec. 541. Definition.
- Sec. 542. Facility and infrastructure support for nonmilitary energy laboratories.
- Sec. 543. User facilities.

Subtitle D—Advisory Panel on Office of Science

- Sec. 561. Establishment.
- Sec. 562. Report.

Subtitle E—Department of Energy Authorization of Appropriations

- Sec. 581. Authorization of appropriations.

TITLE VI—MISCELLANEOUS

Subtitle A—General Provisions for the Department of Energy

- Sec. 601. Research, development, demonstration, and commercial application of energy technology programs, projects, and activities.
- Sec. 602. Limits on use of funds.
- Sec. 603. Cost sharing.
- Sec. 604. Limitation on demonstration and commercial application of energy technology.
- Sec. 605. Reprogramming.

Subtitle B—Other Miscellaneous Provisions

- Sec. 611. Notice of reorganization.
- Sec. 612. Limits on general plant projects.
- Sec. 613. Limits on construction projects.
- Sec. 614. Authority for conceptual and construction design.
- Sec. 615. National Energy Policy Development Group mandated reports.
- Sec. 616. Independent reviews and assessments.

1 **SEC. 2. FINDINGS.**

2 The Congress finds that—

3 (1) the Nation’s prosperity and way of life are
4 sustained by energy use;

5 (2) the growing imbalance between domestic en-
6 ergy production and consumption means that the
7 Nation is becoming increasingly reliant on imported
8 energy, which has the potential to undermine the
9 Nation’s economy, standard of living, and national
10 security;

11 (3) energy conservation and energy efficiency
12 help maximize the use of available energy resources,
13 reduce energy shortages, lower the Nation’s reliance
14 on energy imports, mitigate the impacts of high en-
15 ergy prices, and help protect the environment and
16 public health;

17 (4) development of a balanced portfolio of do-
18 mestic energy supplies will ensure that future gen-
19 erations of Americans will have access to the energy
20 they need;

21 (5) energy efficiency technologies, renewable
22 and alternative energy technologies, and advanced

1 energy systems technologies will help diversify the
2 Nation's energy portfolio with few adverse environ-
3 mental impacts and are vital to delivering clean en-
4 ergy to fuel the Nation's economic growth;

5 (6) development of reliable, affordable, and en-
6 vironmentally sound energy efficiency technologies,
7 renewable and alternative energy technologies, and
8 advanced energy systems technologies will require
9 maintenance of a vibrant fundamental scientific
10 knowledge base and continued scientific and techno-
11 logical innovations that can be accelerated by Fed-
12 eral funding, whereas commercial deployment of
13 such systems and technologies are the responsibility
14 of the private sector;

15 (7) Federal funding should focus on those pro-
16 grams, projects, and activities that are long-term,
17 high-risk, noncommercial, and well-managed, and
18 that provide the potential for scientific and techno-
19 logical advances; and

20 (8) public-private partnerships should be en-
21 couraged to leverage scarce taxpayer dollars.

22 **SEC. 3. PURPOSES.**

23 The purposes of this Act are to—

1 (1) protect and strengthen the Nation's econ-
2 omy, standard of living, and national security by re-
3 ducing dependence on imported energy;

4 (2) meet future needs for energy services at the
5 lowest total cost to the Nation, including environ-
6 mental costs, giving balanced and comprehensive
7 consideration to technologies that improve the effi-
8 ciency of energy end uses and that enhance energy
9 supply;

10 (3) reduce the air, water, and other environ-
11 mental impacts (including emissions of greenhouse
12 gases) of energy production, distribution, transpor-
13 tation, and use through the development of environ-
14 mentally sustainable energy systems;

15 (4) consider the comparative environmental im-
16 pacts of the energy saved or produced by specific
17 programs, projects, or activities;

18 (5) maintain the technological competitiveness
19 of the United States and stimulate economic growth
20 through the development of advanced energy systems
21 and technologies;

22 (6) foster international cooperation by devel-
23 oping international markets for domestically pro-
24 duced sustainable energy technologies, and by trans-
25 ferring environmentally sound, advanced energy sys-

1 tems and technologies to developing countries to pro-
2 mote sustainable development;

3 (7) provide sufficient funding of programs,
4 projects, and activities that are performance-based
5 and modeled as public-private partnerships, as ap-
6 propriate; and

7 (8) enhance the contribution of a given pro-
8 gram, project, or activity to fundamental scientific
9 knowledge.

10 **SEC. 4. GOALS.**

11 (a) IN GENERAL.—The Secretary shall perform an
12 assessment that establishes cost and performance-based
13 goals, as appropriate, for 2005, 2010, 2015, and 2020 for
14 each of the programs, projects, and activities authorized
15 by this Act that would enable each such program, project,
16 or activity to meet to the purposes of this Act under sec-
17 tion 3. Such assessment shall be based on the latest sci-
18 entific and technical knowledge, and shall also take into
19 consideration, as appropriate, the comparative environ-
20 mental impacts (including emissions of greenhouse gases)
21 of the energy saved or produced by specific programs,
22 projects, and activities.

23 (b) CONSULTATION.—In establishing the cost and
24 performance-based goals under subsection (a), the Sec-
25 retary shall consult with the private sector, institutions of

1 higher learning, national laboratories, environmental orga-
2 nizations, professional and technical societies, and any
3 other persons as the Secretary considers appropriate.

4 (c) SCHEDULE.—The Secretary shall—

5 (1) not later than 120 days after the date of
6 the enactment of this Act, issue and publish in the
7 Federal Register a set of draft cost and perform-
8 ance-based goals for public comment;

9 (2) not later than 180 days after the date of
10 the enactment of this Act, after taking into consider-
11 ation any public comments received, transmit to
12 Congress and publish in the Federal Register the
13 final cost and performance-based goals; and

14 (3) update all such cost and performance-based
15 goals on a biennial basis.

16 **SEC. 5. DEFINITIONS.**

17 For purposes of this Act, except as otherwise
18 provided—

19 (1) the term “Administrator” means the Ad-
20 ministrator of the Environmental Protection Agency;

21 (2) the term “appropriate congressional com-
22 mittees” means—

23 (A) the Committee on Science and the
24 Committee on Appropriations of the House of
25 Representatives; and

1 (B) the Committee on Energy and Natural
2 Resources and the Committee on Appropria-
3 tions of the Senate;

4 (3) the term “Department” means the Depart-
5 ment of Energy; and

6 (4) the term “Secretary” means the Secretary
7 of Energy.

8 **SEC. 6. AUTHORIZATIONS.**

9 Authorizations of appropriations under this Act are
10 for environmental research and development, scientific
11 and energy research, development, and demonstration,
12 and commercial application of energy technology pro-
13 grams, projects, and activities.

14 **SEC. 7. SENSE OF CONGRESS.**

15 It is the sense of the Congress that the balance of
16 funding priorities among the various programs authorized
17 by this Act should remain as provided in this Act, regard-
18 less of the total amount of funding made available for this
19 Act.

1 **TITLE I—ENERGY CONSERVA-**
2 **TION AND ENERGY EFFI-**
3 **CIENCY**

4 **Subtitle A—Alternative Fuel**
5 **Vehicles**

6 **SEC. 101. SHORT TITLE.**

7 This subtitle may be cited as the “Alternative Fuel
8 Vehicle Acceleration Act of 2001”.

9 **SEC. 102. DEFINITIONS.**

10 For the purposes of this subtitle, the following defini-
11 tions apply:

12 (1) **ALTERNATIVE FUEL VEHICLE.**—

13 (A) **IN GENERAL.**—Except as provided in
14 subparagraph (B), the term “alternative fuel
15 vehicle” means a motor vehicle that is
16 powered—

17 (i) in whole or in part by electricity,
18 including electricity supplied by a fuel cell;

19 (ii) by liquefied natural gas;

20 (iii) by compressed natural gas;

21 (iv) by liquefied petroleum gas;

22 (v) by hydrogen; or

23 (vi) by methanol at no less than 85
24 percent by volume.

1 (B) EXCLUSIONS.—The term “alternative
2 fuel vehicle” does not include—

3 (i) any vehicle designed to operate
4 solely on gasoline or diesel derived from
5 fossil fuels, regardless of whether it can
6 also be operated on an alternative fuel; or

7 (ii) any vehicle that the Secretary de-
8 termines, by rule, does not yield substan-
9 tial environmental benefits over a vehicle
10 operating solely on gasoline or diesel de-
11 rived from fossil fuels.

12 (2) PILOT PROGRAM.—The term “pilot pro-
13 gram” means the competitive grant program estab-
14 lished under section 103.

15 **SEC. 103. PILOT PROGRAM.**

16 (a) ESTABLISHMENT.—The Secretary shall establish
17 an alternative fuel vehicle energy demonstration and com-
18 mercial application of energy technology competitive grant
19 pilot program to provide not more than 15 grants to State
20 governments, local governments, or metropolitan transpor-
21 tation authorities to carry out a project or projects for
22 the purposes described in subsection (b).

23 (b) GRANT PURPOSES.—Grants under this section
24 may be used for the following purposes:

1 (1) The acquisition of alternative fuel vehicles,
2 including—

3 (A) passenger vehicles;

4 (B) buses used for public transportation or
5 transportation to and from schools;

6 (C) delivery vehicles for goods or services;

7 (D) ground support vehicles at public air-
8 ports, including vehicles to carry baggage or
9 push airplanes away from terminal gates; and

10 (E) motorized two-wheel bicycles, scooters,
11 or other vehicles for use by law enforcement
12 personnel or other State or local government or
13 metropolitan transportation authority employ-
14 ees.

15 (2) Infrastructure necessary to directly support
16 a project funded by the grant, including fueling and
17 other support equipment.

18 (3) Operation and maintenance of vehicles, in-
19 frastructure, and equipment acquired as part of a
20 project funded by the grant.

21 (c) APPLICATIONS.—

22 (1) REQUIREMENTS.—The Secretary shall issue
23 requirements for applying for grants under the pilot
24 program. At a minimum, the Secretary shall require
25 that applications be submitted by the head of a

1 State or local government or a metropolitan trans-
2 portation authority, or any combination thereof, and
3 shall include—

4 (A) at least one project to enable pas-
5 sengers or goods to be transferred directly from
6 one alternative fuel vehicle to another in a
7 linked transportation system;

8 (B) a description of the projects proposed
9 in the application, including how they meet the
10 requirements of this subtitle;

11 (C) an estimate of the ridership or degree
12 of use of the projects proposed in the applica-
13 tion;

14 (D) an estimate of the air pollution emis-
15 sions reduced and fossil fuel displaced as a re-
16 sult of the projects proposed in the application,
17 and a plan to collect and disseminate environ-
18 mental data, related to the projects to be fund-
19 ed under the grant, over the life of the projects;

20 (E) a description of how the projects pro-
21 posed in the application will be sustainable
22 without Federal assistance after the completion
23 of the term of the grant;

24 (F) a complete description of the costs of
25 each project proposed in the application, includ-

1 ing acquisition, construction, operation, and
2 maintenance costs over the expected life of the
3 project; and

4 (G) a description of which costs of the
5 projects proposed in the application will be sup-
6 ported by Federal assistance under this subtitle.

7 (2) PARTNERS.—An applicant under paragraph
8 (1) may carry out projects under the pilot program
9 in partnership with public and private entities.

10 (d) SELECTION CRITERIA.—In evaluating applica-
11 tions under the pilot program, the Secretary shall consider
12 each applicant’s previous experience involving alternative
13 fuel vehicles and shall give priority consideration to appli-
14 cations that—

15 (1) are most likely to maximize protection of
16 the environment;

17 (2) demonstrate the greatest commitment on
18 the part of the applicant to ensure funding for the
19 proposed projects and the greatest likelihood that
20 each project proposed in the application will be
21 maintained or expanded after Federal assistance
22 under this subtitle is completed; and

23 (3) exceed the minimum requirements of sub-
24 section (c)(1)(A).

25 (e) PILOT PROJECT REQUIREMENTS.—

1 (1) MAXIMUM AMOUNT.—The Secretary shall
2 not provide more than \$20,000,000 in Federal as-
3 sistance under the pilot program to any applicant.

4 (2) COST SHARING.—The Secretary shall not
5 provide more than 50 percent of the cost, incurred
6 during the period of the grant, of any project under
7 the pilot program.

8 (3) MAXIMUM PERIOD OF GRANTS.—The Sec-
9 retary shall not fund any applicant under the pilot
10 program for more than 5 years.

11 (4) DEPLOYMENT AND DISTRIBUTION.—The
12 Secretary shall seek to the maximum extent prac-
13 ticable to achieve nationwide deployment of alter-
14 native fuel vehicles through the pilot program, and
15 shall ensure a broad geographic distribution of
16 project sites.

17 (5) TRANSFER OF INFORMATION AND KNOWL-
18 EDGE.—The Secretary shall establish mechanisms to
19 ensure that the information and knowledge gained
20 by participants in the pilot program are transferred
21 among the pilot program participants and to other
22 interested parties, including other applicants that
23 submitted applications.

24 (f) SCHEDULE.—

1 (1) PUBLICATION.—Not later than 90 days
2 after the date of enactment of this Act, the Sec-
3 retary shall publish in the Federal Register, Com-
4 merce Business Daily, and elsewhere as appropriate,
5 a request for applications to undertake projects
6 under the pilot program. Applications shall be due
7 within 180 days of the publication of the notice.

8 (2) SELECTION.—Not later than 180 days after
9 the date by which applications for grants are due,
10 the Secretary shall select by competitive, peer review
11 all applications for projects to be awarded a grant
12 under the pilot program.

13 **SEC. 104. REPORTS TO CONGRESS.**

14 (a) INITIAL REPORT.—Not later than 60 days after
15 the date grants are awarded under this subtitle, the Sec-
16 retary shall transmit to the Committee on Science of the
17 House of Representatives and the Committee on Energy
18 and Natural Resources of the Senate a report
19 containing—

20 (1) an identification of the grant recipients and
21 a description of the projects to be funded;

22 (2) an identification of other applicants that
23 submitted applications for the pilot program; and

24 (3) a description of the mechanisms used by the
25 Secretary to ensure that the information and knowl-

1 edge gained by participants in the pilot program are
2 transferred among the pilot program participants
3 and to other interested parties, including other ap-
4 plicants that submitted applications.

5 (b) EVALUATION.—Not later than 3 years after the
6 date of enactment of this Act, and annually thereafter
7 until the pilot program ends, the Secretary shall transmit
8 to the Committee on Science of the House of Representa-
9 tives and the Committee on Energy and Natural Re-
10 sources of the Senate a report containing an evaluation
11 of the effectiveness of the pilot program, including an as-
12 sessment of the benefits to the environment derived from
13 the projects included in the pilot program as well as an
14 estimate of the potential benefits to the environment to
15 be derived from widespread application of alternative fuel
16 vehicles.

17 **SEC. 105. AUTHORIZATION OF APPROPRIATIONS.**

18 There are authorized to be appropriated to the Sec-
19 retary \$200,000,000 to carry out this subtitle, to remain
20 available until expended.

1 **Subtitle B—Distributed Energy**
2 **Resources**

3 **SEC. 121. DISTRIBUTED ENERGY RESOURCES RESEARCH,**
4 **DEVELOPMENT, DEMONSTRATION, AND COM-**
5 **MERCIAL APPLICATION.**

6 (a) IN GENERAL.—The Secretary shall develop and
7 implement a comprehensive and cooperative research, de-
8 velopment, demonstration, and commercial application
9 program to ensure the reliability, efficiency, and environ-
10 mental responsibility of distributed energy resources. Such
11 program shall include advanced energy technologies and
12 systems, advanced grid reliability technologies develop-
13 ment, and technology transfer and education.

14 (b) AREAS.—(1) In carrying out this subtitle, the
15 Secretary shall consider research, development, and dem-
16 onstration on and commercial application of distributed
17 energy resources, advanced systems development, and ad-
18 vanced electrical grid reliability for each of the following:

19 (A) Significant advancement in efficiency for
20 distributed energy resources technologies.

21 (B) Significant advancement in efficiency for
22 thermally activated technologies.

23 (C) Significant advancement in reduction of en-
24 vironmental impact by deploying pollution prevention
25 enabling technologies

1 (2) The program should include the following areas:

2 (A) Integration of the following technologies
3 into distributed energy resources systems:

4 (i) Renewable energy resources, including
5 bioenergy, geothermal, solar, and wind.

6 (ii) Fuel cells.

7 (iii) Combined heat and power systems.

8 (iv) Microturbines.

9 (v) Advanced natural gas turbines.

10 (vi) Advanced internal combustion engine
11 generators.

12 (vii) Energy storage devices.

13 (viii) Any other technologies, as appro-
14 priate.

15 (B) Interconnection standards, protocols, and
16 equipment.

17 (C) Ancillary equipment for dispatch and con-
18 trol.

19 **SEC. 122. PROGRAM PLAN.**

20 Within 120 days after the date of the enactment of
21 this Act, the Secretary, in consultation with other appro-
22 priate Federal agencies, shall prepare and transmit to
23 Congress a 5-year program plan to guide activities under
24 this subtitle. In preparing the program plan, the Secretary
25 shall consult with appropriate representatives of the dis-

1 tributed energy resources industry to select and prioritize
2 appropriate project proposals. The Secretary may also
3 seek the advice of utilities, energy services providers, man-
4 ufacturers, institutions of higher learning, other appro-
5 priate State and local agencies, environmental organiza-
6 tions, professional and technical societies, and any other
7 persons as the Secretary considers appropriate. In order
8 to ensure that technologies are readily adopted by private
9 entities, the Secretary shall create cost-sharing programs
10 with private entities.

11 **SEC. 123. REPORT.**

12 Two years after the date of the enactment of this Act,
13 and at two year intervals thereafter, the Secretary, jointly
14 with other appropriate Federal agencies, shall transmit a
15 report to Congress describing the progress made to
16 achieve the purposes of this subtitle and identifying any
17 additional resources needed to continue the development
18 and commercial application of distributed energy re-
19 sources.

20 **Subtitle C—Department of Energy**
21 **Authorization of Appropriations**

22 **SEC. 131. AUTHORIZATION OF APPROPRIATIONS.**

23 (a) OPERATION AND MAINTENANCE.—In addition to
24 amounts authorized to be appropriated under section 105
25 and under subtitle E, there are authorized to be appro-

1 priated to the Secretary for subtitle B and for Energy
2 Conservation operation and maintenance (including Build-
3 ing Technology, State and Community Sector, Industry
4 Sector, Transportation Sector, Power Technologies, and
5 Policy and Management) \$600,000,000 for fiscal year
6 2002, \$700,000,000 for fiscal year 2003, and
7 \$800,000,000 for fiscal year 2004, to remain available
8 until expended.

9 (b) LIMITS ON USE OF FUNDS.—None of the funds
10 authorized to be appropriated in subsection (a) may be
11 used for—

12 (1) Building Technology, State and Community
13 Sector—

14 (A) Residential Building Energy Codes;

15 (B) Commercial Building Energy Codes;

16 (C) Lighting and Appliance Standards;

17 (D) Weatherization Assistance Program;

18 or

19 (E) State Energy Program; or

20 (2) Federal Energy Management Program.

1 **Subtitle D—Environmental Protec-**
2 **tion Agency Office of Air and**
3 **Radiation Authorization of Ap-**
4 **propriations**

5 **SEC. 141. SHORT TITLE.**

6 This subtitle may be cited as the “Environmental
7 Protection Agency Office of Air and Radiation Authoriza-
8 tion Act of 2001”.

9 **SEC. 142. AUTHORIZATION OF APPROPRIATIONS.**

10 There are authorized to be appropriated to the Ad-
11 ministrator for the Office of Air and Radiation
12 \$156,700,000 for fiscal year 2002, \$163,000,000 for fis-
13 cal year 2003, and \$169,400,000 for fiscal year 2004 to
14 remain available until expended, of which—

15 (1) \$28,300,000 for fiscal year 2002,
16 \$29,400,000 for fiscal year 2003, and \$30,600,000
17 for fiscal year 2004 shall be for Science; and

18 (2) \$128,400,000 for fiscal year 2002,
19 \$133,600,000 for fiscal year 2003, and
20 \$138,800,000 for fiscal year 2004 shall be for Cli-
21 mate Change Protection Programs, of which—

22 (A) \$52,700,000 for fiscal year 2002,
23 \$54,800,000 for fiscal year 2003, and
24 \$57,000,000 for fiscal year 2004 shall be for
25 Buildings;

1 (B) \$32,400,000 for fiscal year 2002,
2 \$33,700,000 for fiscal year 2003, and
3 \$35,000,000 for fiscal year 2004 shall be for
4 Transportation;

5 (C) \$32,000,000 for fiscal year 2002,
6 \$33,300,000 for fiscal year 2003, and
7 \$34,600,000 for fiscal year 2004 shall be for
8 Industry;

9 (D) \$1,700,000 for fiscal year 2002,
10 \$1,750,000 for fiscal year 2003, and
11 \$1,800,000 for fiscal year 2004 shall be for
12 Carbon Removal;

13 (E) \$2,500,000 for fiscal year 2002,
14 \$2,600,000 for fiscal year 2003, and
15 \$1,800,000 for fiscal year 2004 shall be for
16 State and Local Climate;

17 (F) \$6,300,000 for fiscal year 2002,
18 \$6,600,000 for fiscal year 2003, and
19 \$6,800,000 for fiscal year 2004 shall be for
20 International Capacity Building; and

21 (G) \$800,000 for fiscal year 2002,
22 \$850,000 for fiscal year 2003, and \$900,000
23 for fiscal year 2004 shall be for Technical Co-
24 operation with Industrial and Developing Coun-
25 tries.

1 **SEC. 143. LIMITS ON USE OF FUNDS.**

2 (a) FEDERAL ACQUISITION REGULATION.—

3 (1) REQUIREMENT.—None of the funds author-
4 ized to be appropriated by this subtitle may be used
5 to award, amend, or modify a contract of the Office
6 of Air and Radiation in a manner that deviates from
7 the Federal Acquisition Regulation, unless the Ad-
8 ministrator grants, on a case-by-case basis, a waiver
9 to allow for such a deviation. The Administrator
10 may not delegate the authority to grant such a waiv-
11 er.

12 (2) CONGRESSIONAL NOTICE.—At least 60 days
13 before a contract award, amendment, or modifica-
14 tion for which the Administrator intends to grant
15 such a waiver, the Administrator shall submit to the
16 appropriate congressional committees a report noti-
17 fying the committees of the waiver and setting forth
18 the reasons for the waiver.

19 (b) PRODUCTION OR PROVISION OF ARTICLES OR
20 SERVICES.—None of the funds authorized to be appro-
21 priated by this subtitle may be used to produce or provide
22 articles or services for the purpose of selling the articles
23 or services to a person outside the Federal Government,
24 unless the Administrator determines that comparable arti-
25 cles or services are not available from a commercial source
26 in the United States.

1 (c) REQUESTS FOR PROPOSALS.—None of the funds
2 authorized to be appropriated by this subtitle may be used
3 by the Environmental Protection Agency to prepare or ini-
4 tiate Requests for Proposals for a program, project, or ac-
5 tivity if the program, project, or activity has not been spe-
6 cifically authorized by Congress.

7 (d) TRADE ASSOCIATIONS.—None of the funds au-
8 thorized to be appropriated by this subtitle may be used
9 either directly or indirectly to fund a grant, contract, sub-
10 contract, or any other form of financial assistance award-
11 ed by the Environmental Protection Agency to a trade as-
12 sociation on a noncompetitive basis. As part of the Envi-
13 ronmental Protection Agency’s annual budget request sub-
14 mission to the Congress, the Administrator shall submit
15 a report to the appropriate congressional committees that
16 identifies—

17 (1) the estimated amount of funds provided by
18 the Environmental Protection Agency to trade asso-
19 ciations, by trade association, for the fiscal year of
20 such budget submission, as well as for the 2 pre-
21 vious fiscal years;

22 (2) the services either provided or to be pro-
23 vided by each such trade association; and

24 (3) the sources of funds for services provided by
25 each such trade association.

1 **SEC. 144. COST SHARING.**

2 (a) RESEARCH AND DEVELOPMENT.—The Adminis-
3 trator shall require, for research and development pro-
4 grams, projects, and activities carried out by industry
5 under this subtitle, a commitment from non-Federal
6 sources of at least 20 percent of the cost of such pro-
7 grams, projects, and activities.

8 (b) DEMONSTRATION AND COMMERCIAL APPLICA-
9 TION.—The Administrator shall require a commitment
10 from non-Federal sources of at least 50 percent of the cost
11 of any demonstration or commercial application program,
12 project, or activity conducted under this subtitle.

13 **SEC. 145. LIMITATION ON DEMONSTRATION AND COMMER-**
14 **CIAL APPLICATIONS OF ENERGY TECH-**
15 **NOLOGY.**

16 The Administrator shall provide funding for scientific
17 or energy demonstration or commercial application of en-
18 ergy technology programs, projects, or activities of the Of-
19 fice of Air and Radiation only for technologies or processes
20 that can be reasonably expected to yield new, measurable
21 benefits to the cost, efficiency, or performance of the tech-
22 nology or process.

23 **SEC. 146. REPROGRAMMING.**

24 (a) AUTHORITY.—The Administrator may use
25 amounts appropriated under this subtitle for a program,

1 project, or activity other than the program, project, or ac-
2 tivity for which such amounts were appropriated only if—

3 (1) the Administrator has transmitted to the
4 appropriate congressional committees a report de-
5 scribed in subsection (b) and a period of 30 days has
6 elapsed after such committees receive the report;

7 (2) amounts used for the program, project, or
8 activity do not exceed—

9 (A) 105 percent of the amount authorized
10 for the program, project, or activity; or

11 (B) \$250,000 more than the amount au-
12 thorized for the program, project, or activity,

13 whichever is less; and

14 (3) the program, project, or activity has been
15 presented to, or requested of, the Congress by the
16 Administrator.

17 (b) REPORT.—(1) The report referred to in sub-
18 section (a) is a report containing a full and complete state-
19 ment of the action proposed to be taken and the facts and
20 circumstances relied upon in support of the proposed ac-
21 tion.

22 (2) In the computation of the 30-day period under
23 subsection (a), there shall be excluded any day on which
24 either House of Congress is not in session because of an
25 adjournment of more than 3 days to a day certain.

1 (c) LIMITATIONS.—(1) In no event may the total
2 amount of funds obligated pursuant to this subtitle exceed
3 the total amount authorized to be appropriated by this
4 subtitle.

5 (2) Funds appropriated pursuant to this subtitle may
6 not be used for an item for which Congress has declined
7 to authorize funds.

8 **SEC. 147. BUDGET REQUEST FORMAT.**

9 The Administrator shall provide to the appropriate
10 congressional committees, to be transmitted at the same
11 time as the Environmental Protection Agency's annual
12 budget request submission, a detailed justification for
13 budget authorization for the programs, projects, and ac-
14 tivities for which funds are authorized by this subtitle.
15 Each such document shall include, for the fiscal year for
16 which funding is being requested and for the 2 previous
17 fiscal years—

18 (1) a description of, and funding requested or
19 allocated for, each such program, project, or activity;

20 (2) an identification of all recipients of funds to
21 conduct such programs, projects, and activities; and

22 (3) an estimate of the amounts to be expended
23 by each recipient of funds identified under para-
24 graph (2).

1 **SEC. 148. OTHER PROVISIONS.**

2 (a) ANNUAL OPERATING PLAN AND REPORTS.—The
3 Administrator shall provide simultaneously to the Com-
4 mittee on Science of the House of Representatives—

5 (1) any annual operating plan or other oper-
6 ational funding document, including any additions or
7 amendments thereto; and

8 (2) any report relating to the environmental re-
9 search or development, scientific or energy research,
10 development, or demonstration, or commercial appli-
11 cation of energy technology programs, projects, or
12 activities of the Environmental Protection Agency,
13 provided to any committee of Congress.

14 (b) NOTICE OF REORGANIZATION.—The Adminis-
15 trator shall provide notice to the appropriate congressional
16 committees not later than 15 days before any reorganiza-
17 tion of any environmental research or development, sci-
18 entific or energy research, development, or demonstration,
19 or commercial application of energy technology program,
20 project, or activity of the Office of Air and Radiation.

21 **TITLE II—RENEWABLE ENERGY**
22 **Subtitle A—Hydrogen**

23 **SEC. 201. SHORT TITLE.**

24 This subtitle may be cited as the “Robert S. Walker
25 and George E. Brown, Jr. Hydrogen Energy Act of
26 2001”.

1 **SEC. 202. PURPOSES.**

2 Section 102(b) of the Spark M. Matsunaga Hydrogen
3 Research, Development, and Demonstration Act of 1990
4 is amended to read as follows:

5 “(b) PURPOSES.—The purposes of this Act are—

6 “(1) to direct the Secretary to conduct re-
7 search, development, and demonstration activities
8 leading to the production, storage, transportation,
9 and use of hydrogen for industrial, commercial, resi-
10 dential, transportation, and utility applications;

11 “(2) to direct the Secretary to develop a pro-
12 gram of technology assessment, information dissemi-
13 nation, and education in which Federal, State, and
14 local agencies, members of the energy, transpor-
15 tation, and other industries, and other entities may
16 participate; and

17 “(3) to develop methods of hydrogen production
18 that minimize adverse environmental impacts, with
19 emphasis on efficient and cost-effective production
20 from renewable energy resources.”.

21 **SEC. 203. DEFINITIONS.**

22 Section 102(c) of the Spark M. Matsunaga Hydrogen
23 Research, Development, and Demonstration Act of 1990
24 is amended—

25 (1) by redesignating paragraphs (1) through
26 (3) as paragraphs (2) through (4), respectively; and

1 (2) by inserting before paragraph (2), as so re-
2 designated by paragraph (1) of this section, the fol-
3 lowing new paragraph:

4 “(1) ‘advisory committee’ means the advisory
5 committee established under section 108;”.

6 **SEC. 204. REPORTS TO CONGRESS.**

7 Section 103 of the Spark M. Matsunaga Hydrogen
8 Research, Development, and Demonstration Act of 1990
9 is amended to read as follows:

10 **“SEC. 103. REPORTS TO CONGRESS.**

11 “(a) REQUIREMENT.—Not later than 1 year after the
12 date of the enactment of the Robert S. Walker and George
13 E. Brown, Jr. Hydrogen Energy Act of 2001, and bienni-
14 ally thereafter, the Secretary shall transmit to Congress
15 a detailed report on the status and progress of the pro-
16 grams and activities authorized under this Act.

17 “(b) CONTENTS.—A report under subsection (a) shall
18 include, in addition to any views and recommendations of
19 the Secretary—

20 “(1) an assessment of the extent to which the
21 program is meeting the purposes specified in section
22 102(b);

23 “(2) a determination of the effectiveness of the
24 technology assessment, information dissemination,

1 and education program established under section
2 106;

3 “(3) an analysis of Federal, State, local, and
4 private sector hydrogen-related research, develop-
5 ment, and demonstration activities to identify pro-
6 ductive areas for increased intergovernmental and
7 private-public sector collaboration; and

8 “(4) recommendations of the advisory com-
9 mittee for any improvements needed in the programs
10 and activities authorized by this Act.”.

11 **SEC. 205. HYDROGEN RESEARCH AND DEVELOPMENT.**

12 Section 104 of the Spark M. Matsunaga Hydrogen
13 Research, Development, and Demonstration Act of 1990
14 is amended to read as follows:

15 **“SEC. 104. HYDROGEN RESEARCH AND DEVELOPMENT.**

16 “(a) ESTABLISHMENT OF PROGRAM.—The Secretary
17 shall conduct a hydrogen research and development pro-
18 gram relating to production, storage, transportation, and
19 use of hydrogen, with the goal of enabling the private sec-
20 tor to demonstrate the technical feasibility of using hydro-
21 gen for industrial, commercial, residential, transportation,
22 and utility applications.

23 “(b) ELEMENTS.—In conducting the program au-
24 thorized by this section, the Secretary shall—

1 “(1) give particular attention to developing an
2 understanding and resolution of critical technical
3 issues preventing the introduction of hydrogen as an
4 energy carrier into the marketplace;

5 “(2) initiate or accelerate existing research and
6 development in critical technical issues that will con-
7 tribute to the development of more economical hy-
8 drogen production, storage, transportation, and use,
9 including critical technical issues with respect to
10 production (giving priority to those production tech-
11 niques that use renewable energy resources as their
12 primary source of energy for hydrogen production),
13 liquefaction, transmission, distribution, storage, and
14 use (including use of hydrogen in surface transpor-
15 tation); and

16 “(3) survey private sector and public sector hy-
17 drogen research and development activities world-
18 wide, and take steps to ensure that research and de-
19 velopment activities under this section do not—

20 “(A) duplicate any available research and
21 development results; or

22 “(B) displace or compete with the privately
23 funded hydrogen research and development ac-
24 tivities of United States industry.

1 “(c) EVALUATION OF TECHNOLOGIES.—The Sec-
2 retary shall evaluate, for the purpose of determining
3 whether to undertake or fund research and development
4 activities under this section, any reasonable new or im-
5 proved technology that could lead or contribute to the de-
6 velopment of economical hydrogen production, storage,
7 transportation, and use.

8 “(d) RESEARCH AND DEVELOPMENT SUPPORT.—
9 The Secretary is authorized to arrange for tests and dem-
10 onstrations and to disseminate to researchers and devel-
11 opers information, data, and other materials necessary to
12 support the research and development activities authorized
13 under this section and other efforts authorized under this
14 Act, consistent with section 106 of this Act.

15 “(e) COMPETITIVE PEER REVIEW.—The Secretary
16 shall carry out or fund research and development activities
17 under this section only on a competitive basis using peer
18 review.

19 “(f) COST SHARING.—The Secretary shall require,
20 for research and development activities carried out by in-
21 dustry under this section, a commitment from non-Federal
22 sources of at least 20 percent of the cost of the project.”.

1 **SEC. 206. DEMONSTRATIONS.**

2 Section 105 of the Spark M. Matsunaga Hydrogen
3 Research, Development, and Demonstration Act of 1990
4 is amended—

5 (1) in subsection (a), by striking “, preferably
6 in self-contained locations,”;

7 (2) in subsection (b), by striking “at self-con-
8 tained sites”; and

9 (3) in subsection (c), by inserting “NON-FED-
10 ERAL FUNDING REQUIREMENT.—” after “(c)”.

11 **SEC. 207. TECHNOLOGY TRANSFER.**

12 Section 106 of the Spark M. Matsunaga Hydrogen
13 Research, Development, and Demonstration Act of 1990
14 is amended to read as follows:

15 **“SEC. 106. TECHNOLOGY ASSESSMENT, INFORMATION DIS-
16 SEMINATION, AND EDUCATION PROGRAM.**

17 “(a) PROGRAM.—The Secretary shall, in consultation
18 with the advisory committee, conduct a program designed
19 to accelerate wider application of hydrogen production,
20 storage, transportation, and use technologies, including
21 application in foreign countries to increase the global mar-
22 ket for the technologies and foster global economic devel-
23 opment without harmful environmental effects.

24 “(b) INFORMATION.—The Secretary, in carrying out
25 the program authorized by subsection (a), shall—

1 “(1) undertake an update of the inventory and
2 assessment, required under section 106(b)(1) of this
3 Act as in effect before the date of the enactment of
4 the Robert S. Walker and George E. Brown, Jr. Hy-
5 drogen Energy Act of 2001, of hydrogen tech-
6 nologies and their commercial capability to economi-
7 cally produce, store, transport, or use hydrogen in
8 industrial, commercial, residential, transportation,
9 and utility sector; and

10 “(2) develop, with other Federal agencies as ap-
11 propriate and industry, an information exchange
12 program to improve technology transfer for hydro-
13 gen production, storage, transportation, and use,
14 which may consist of workshops, publications, con-
15 ferences, and a database for the use by the public
16 and private sectors.”.

17 **SEC. 208. COORDINATION AND CONSULTATION.**

18 Section 107 of the Spark M. Matsunaga Hydrogen
19 Research, Development, and Demonstration Act of 1990
20 is amended—

21 (1) by amending paragraph (1) of subsection
22 (a) to read as follows:

23 “(1) shall establish a central point for the co-
24 ordination of all hydrogen research, development,

1 and demonstration activities of the Department;
2 and”]; and

3 (2) by amending subsection (c) to read as fol-
4 lows:

5 “(c) CONSULTATION.—The Secretary shall consult
6 with other Federal agencies as appropriate, and the advi-
7 sory committee, in carrying out the Secretary’s authorities
8 pursuant to this Act.”.

9 **SEC. 209. ADVISORY COMMITTEE.**

10 Section 108 of the Spark M. Matsunaga Hydrogen
11 Research, Development, and Demonstration Act of 1990
12 is amended to read as follows:

13 **“SEC. 108. ADVISORY COMMITTEE.**

14 “(a) ESTABLISHMENT.—The Secretary shall enter
15 into appropriate arrangements with the National Acad-
16 emies of Sciences and Engineering to establish an advisory
17 committee consisting of experts drawn from domestic in-
18 dustry, academia, Governmental laboratories, and finan-
19 cial, environmental, and other organizations, as appro-
20 priate, to review and advise on the progress made through
21 the programs and activities authorized under this Act.

22 “(b) COOPERATION.—The heads of Federal agencies
23 shall cooperate with the advisory committee in carrying
24 out this section and shall furnish to the advisory com-

1 mittee such information as the advisory committee reason-
2 ably deems necessary to carry out this section.

3 “(c) REVIEW.—The advisory committee shall review
4 and make any necessary recommendations to the Sec-
5 retary on—

6 “(1) the implementation and conduct of pro-
7 grams and activities authorized under this Act; and

8 “(2) the economic, technological, and environ-
9 mental consequences of the deployment of hydrogen
10 production, storage, transportation, and use systems.

11 “(d) RESPONSIBILITIES OF THE SECRETARY.—The
12 Secretary shall consider, but need not adopt, any rec-
13 ommendations of the advisory committee under subsection
14 (c). The Secretary shall provide an explanation of the rea-
15 sons that any such recommendations will not be imple-
16 mented and include such explanation in the report to Con-
17 gress under section 103(a) of this Act.”.

18 **SEC. 210. AUTHORIZATION OF APPROPRIATIONS.**

19 Section 109 of the Spark M. Matsunaga Hydrogen
20 Research, Development, and Demonstration Act of 1990
21 is amended to read as follows:

22 **“SEC. 109. AUTHORIZATION OF APPROPRIATIONS.**

23 “(a) RESEARCH AND DEVELOPMENT; ADVISORY
24 COMMITTEE.—There are authorized to be appropriated to
25 the Secretary to carry out sections 104 and 108—

1 “(1) \$40,000,000 for fiscal year 2002;

2 “(2) \$45,000,000 for fiscal year 2003;

3 “(3) \$50,000,000 for fiscal year 2004;

4 “(4) \$55,000,000 for fiscal year 2005; and

5 “(5) \$60,000,000 for fiscal year 2006.

6 “(b) DEMONSTRATION.—There are authorized to be
7 appropriated to the Secretary to carry out section 105—

8 “(1) \$20,000,000 for fiscal year 2002;

9 “(2) \$25,000,000 for fiscal year 2003;

10 “(3) \$30,000,000 for fiscal year 2004;

11 “(4) \$35,000,000 for fiscal year 2005; and

12 “(5) \$40,000,000 for fiscal year 2006.”.

13 **SEC. 211. REPEAL.**

14 (a) REPEAL.—Title II of the Hydrogen Future Act
15 of 1996 is repealed.

16 (b) CONFORMING AMENDMENT.—Section 2 of the
17 Hydrogen Future Act of 1996 is amended by striking “ti-
18 tles II and III” and inserting “title III”.

19 **Subtitle B—Bioenergy**

20 **SEC. 221. SHORT TITLE.**

21 This subtitle may be cited as the “Bioenergy Act of
22 2001”.

23 **SEC. 222. FINDINGS.**

24 Congress finds that bioenergy has potential to help—

25 (1) meet the Nation’s energy needs;

- 1 (2) reduce reliance on imported fuels;
- 2 (3) promote rural economic development;
- 3 (4) provide for productive utilization of agricul-
- 4 tural residues and waste materials; and
- 5 (5) protect the environment.

6 **SEC. 223. DEFINITION.**

7 For purposes of this subtitle the term “biofuels” in-

8 cludes production of industrial chemicals.

9 **SEC. 224. AUTHORIZATION.**

10 The Secretary is authorized to conduct environmental

11 research and development, scientific and energy research,

12 development, and demonstration, and commercial applica-

13 tion of energy technology programs, projects, and activi-

14 ties related to bioenergy, including biopower energy sys-

15 tems, biofuels energy systems, and integrated bioenergy

16 research and development (including biofuels).

17 **SEC. 225. AUTHORIZATION OF APPROPRIATIONS.**

18 (a) **BIOPOWER ENERGY SYSTEMS.**—There are au-

19 thorized to be appropriated to the Secretary for Biopower

20 Energy Systems programs, projects, and activities—

- 21 (1) \$45,700,000 for fiscal year 2002;
- 22 (2) \$52,500,000 for fiscal year 2003;
- 23 (3) \$60,300,000 for fiscal year 2004;
- 24 (4) \$69,300,000 for fiscal year 2005; and
- 25 (5) \$79,600,000 for fiscal year 2006.

1 (b) BIOFUELS ENERGY SYSTEMS.—There are au-
2 thorized to be appropriated to the Secretary for biofuels
3 energy systems programs, projects, and activities—

4 (1) \$53,500,000 for fiscal year 2002;

5 (2) \$61,400,000 for fiscal year 2003;

6 (3) \$70,600,000 for fiscal year 2004;

7 (4) \$81,100,000 for fiscal year 2005; and

8 (5) \$93,200,000 for fiscal year 2006.

9 (c) INTEGRATED BIOENERGY RESEARCH AND DE-
10 VELOPMENT.—There are authorized to be appropriated to
11 the Secretary for integrated bioenergy research and devel-
12 opment (including biofuels) programs, projects, and activi-
13 ties, \$49,000,000 for each of the fiscal years 2002 through
14 2006. Activities funded under this subsection shall be co-
15 ordinated with ongoing related programs of other Federal
16 agencies.

17 **Subtitle C—Department of Energy**
18 **Authorization of Appropriations**

19 **SEC. 241. AUTHORIZATION OF APPROPRIATIONS.**

20 (a) OPERATION AND MAINTENANCE.—There are au-
21 thorized to be appropriated to the Secretary for Renewable
22 Energy operation and maintenance, including Geothermal
23 Technology Development, Hydropower, Concentrating
24 Solar Power, Photovoltaic Energy Systems, Solar Building
25 Technology Research, Wind Energy Systems, High Tem-

1 perature Superconducting Research and Development,
2 Energy Storage Systems, Transmission Reliability, Inter-
3 national Renewable Energy Program, Renewable Energy
4 Production Incentive Program, Renewable Program Sup-
5 port, National Renewable Energy Laboratory, and Pro-
6 gram Direction, and including amounts authorized under
7 the amendment made by section 210 and amounts author-
8 ized under section 225, \$475,000,000 for fiscal year 2002,
9 \$585,000,000 for fiscal year 2003, and \$620,000,000 for
10 fiscal year 2004, to remain available until expended.

11 (b) LIMITS ON USE OF FUNDS.—None of the funds
12 authorized to be appropriated in subsection (a) may be
13 used for—

14 (1) Departmental Energy Management Pro-
15 gram; or

16 (2) Renewable Indian Energy Resources.

17 **TITLE III—NUCLEAR ENERGY**

18 **Subtitle A—University Nuclear**

19 **Science and Engineering**

20 **SEC. 301. SHORT TITLE.**

21 This subtitle may be cited as “Department of Energy
22 University Nuclear Science and Engineering Act”.

23 **SEC. 302. FINDINGS.**

24 The Congress finds the following:

1 (1) United States university nuclear science and
2 engineering programs are in a state of serious de-
3 cline, with nuclear engineering enrollment at a 35-
4 year low. Since 1980, the number of nuclear engi-
5 neering university programs has declined nearly 40
6 percent, and over two-thirds of the faculty in these
7 programs are 45 years of age or older. Also, since
8 1980, the number of university research and train-
9 ing reactors in the United States has declined by
10 over 50 percent. Most of these reactors were built
11 in the late 1950s and 1960s with 30-year to 40-year
12 operating licenses, and many require relicensing in
13 the next several years.

14 (2) A decline in a competent nuclear workforce,
15 and the lack of adequately trained nuclear scientists
16 and engineers, will affect the ability of the United
17 States to solve future nuclear waste storage issues,
18 operate existing and design future fission reactors in
19 the United States, respond to future nuclear events
20 worldwide, help stem the proliferation of nuclear
21 weapons, and design and operate naval nuclear reac-
22 tors.

23 (3) The Department of Energy's Office of Nu-
24 clear Energy, Science and Technology, a principal
25 Federal agency for civilian research in nuclear

1 science and engineering, is well suited to help main-
2 tain tomorrow's human resource and training invest-
3 ment in the nuclear sciences and engineering.

4 **SEC. 303. DEPARTMENT OF ENERGY PROGRAM.**

5 (a) ESTABLISHMENT.—The Secretary, through the
6 Office of Nuclear Energy, Science and Technology, shall
7 support a program to maintain the Nation's human re-
8 source investment and infrastructure in the nuclear
9 sciences and engineering consistent with the Department's
10 statutory authorities related to civilian nuclear research,
11 development, and demonstration and commercial applica-
12 tion of energy technology.

13 (b) DUTIES OF THE OFFICE OF NUCLEAR ENERGY,
14 SCIENCE AND TECHNOLOGY.—In carrying out the pro-
15 gram under this subtitle, the Director of the Office of Nu-
16 clear Energy, Science and Technology shall—

17 (1) develop a robust graduate and under-
18 graduate fellowship program to attract new and tal-
19 ented students;

20 (2) assist universities in recruiting and retain-
21 ing new faculty in the nuclear sciences and engineer-
22 ing through a Junior Faculty Research Initiation
23 Grant Program;

1 (3) maintain a robust investment in the funda-
2 mental nuclear sciences and engineering through the
3 Nuclear Engineering Education Research Program;

4 (4) encourage collaborative nuclear research
5 among industry, national laboratories, and univer-
6 sities through the Nuclear Energy Research Initia-
7 tive; and

8 (5) support communication and outreach re-
9 lated to nuclear science and engineering.

10 (c) MAINTAINING UNIVERSITY RESEARCH AND
11 TRAINING REACTORS AND ASSOCIATED INFRASTRUC-
12 TURE.—The Secretary, through the Office of Nuclear En-
13 ergy, Science and Technology, shall provide for the fol-
14 lowing university research and training reactor infrastruc-
15 ture maintenance and research activities:

16 (1) Refueling of university research reactors
17 with low enriched fuels, upgrade of operational in-
18 strumentation, and sharing of reactors among uni-
19 versities.

20 (2) In collaboration with the United States nu-
21 clear industry, assistance, where necessary, in reli-
22 censing and upgrading university training reactors
23 as part of a student training program.

24 (3) A university reactor research and training
25 award program that provides for reactor improve-

1 ments as part of a focused effort that emphasizes re-
2 search, training, and education.

3 (d) UNIVERSITY-DOE LABORATORY INTER-
4 ACTIONS.—The Secretary, through the Office of Nuclear
5 Energy, Science and Technology, shall develop—

6 (1) a sabbatical fellowship program for univer-
7 sity faculty to spend extended periods of time at De-
8 partment of Energy laboratories in the areas of nu-
9 clear science and technology; and

10 (2) a visiting scientist program in which labora-
11 tory staff can spend time in academic nuclear
12 science and engineering departments.

13 The Secretary may under subsection (b)(1) provide for fel-
14 lowships for students to spend time at Department of En-
15 ergy laboratories in the areas of nuclear science and tech-
16 nology under the mentorship of laboratory staff.

17 (e) OPERATIONS AND MAINTENANCE.—To the extent
18 that the use of a university research reactor is funded
19 under this subtitle, funds authorized under this subtitle
20 may be used to supplement operation of the research reac-
21 tor during the investigator’s proposed effort. The host in-
22 stitution shall provide at least 50 percent of the cost of
23 the reactor’s operation.

24 (f) MERIT REVIEW REQUIRED.—All grants, con-
25 tracts, cooperative agreements, or other financial assist-

1 ance awards under this subtitle shall be made only after
2 independent merit review.

3 **SEC. 304. AUTHORIZATION OF APPROPRIATIONS.**

4 (a) **TOTAL AUTHORIZATION.**—The following sums
5 are authorized to be appropriated to the Secretary, to re-
6 main available until expended, for the purposes of carrying
7 out this subtitle:

8 (1) \$30,200,000 for fiscal year 2002.

9 (2) \$41,000,000 for fiscal year 2003.

10 (3) \$47,900,000 for fiscal year 2004.

11 (4) \$55,600,000 for fiscal year 2005.

12 (5) \$64,100,000 for fiscal year 2006.

13 (b) **GRADUATE AND UNDERGRADUATE FELLOW-**
14 **SHIPS.**—Of the funds authorized by subsection (a), the fol-
15 lowing sums are authorized to be appropriated to carry
16 out section 303(b)(1):

17 (1) \$3,000,000 for fiscal year 2002.

18 (2) \$3,100,000 for fiscal year 2003.

19 (3) \$3,200,000 for fiscal year 2004.

20 (4) \$3,200,000 for fiscal year 2005.

21 (5) \$3,200,000 for fiscal year 2006.

22 (c) **JUNIOR FACULTY RESEARCH INITIATION GRANT**
23 **PROGRAM.**—Of the funds authorized by subsection (a),
24 the following sums are authorized to be appropriated to
25 carry out section 303(b)(2):

1 (1) \$5,000,000 for fiscal year 2002.

2 (2) \$7,000,000 for fiscal year 2003.

3 (3) \$8,000,000 for fiscal year 2004.

4 (4) \$9,000,000 for fiscal year 2005.

5 (5) \$10,000,000 for fiscal year 2006.

6 (d) NUCLEAR ENGINEERING EDUCATION RESEARCH
7 PROGRAM.—Of the funds authorized by subsection (a),
8 the following sums are authorized to be appropriated to
9 carry out section 303(b)(3):

10 (1) \$8,000,000 for fiscal year 2002.

11 (2) \$12,000,000 for fiscal year 2003.

12 (3) \$13,000,000 for fiscal year 2004.

13 (4) \$15,000,000 for fiscal year 2005.

14 (5) \$20,000,000 for fiscal year 2006.

15 (e) COMMUNICATION AND OUTREACH RELATED TO
16 NUCLEAR SCIENCE AND ENGINEERING.—Of the funds
17 authorized by subsection (a), the following sums are au-
18 thorized to be appropriated to carry out section 303(b)(5):

19 (1) \$200,000 for fiscal year 2002.

20 (2) \$200,000 for fiscal year 2003.

21 (3) \$300,000 for fiscal year 2004.

22 (4) \$300,000 for fiscal year 2005.

23 (5) \$300,000 for fiscal year 2006.

24 (f) REFUELING OF UNIVERSITY RESEARCH REAC-
25 TORS AND INSTRUMENTATION UPGRADES.—Of the funds

1 authorized by subsection (a), the following sums are au-
2 thorized to be appropriated to carry out section 303(c)(1):

3 (1) \$6,000,000 for fiscal year 2002.

4 (2) \$6,500,000 for fiscal year 2003.

5 (3) \$7,000,000 for fiscal year 2004.

6 (4) \$7,500,000 for fiscal year 2005.

7 (5) \$8,000,000 for fiscal year 2006.

8 (g) RELICENSING ASSISTANCE.—Of the funds au-
9 thorized by subsection (a), the following sums are author-
10 ized to be appropriated to carry out section 303(c)(2):

11 (1) \$1,000,000 for fiscal year 2002.

12 (2) \$1,100,000 for fiscal year 2003.

13 (3) \$1,200,000 for fiscal year 2004.

14 (4) \$1,300,000 for fiscal year 2005.

15 (5) \$1,300,000 for fiscal year 2006.

16 (h) REACTOR RESEARCH AND TRAINING AWARD
17 PROGRAM.—Of the funds authorized by subsection (a),
18 the following sums are authorized to be appropriated to
19 carry out section 303(c)(3):

20 (1) \$6,000,000 for fiscal year 2002.

21 (2) \$10,000,000 for fiscal year 2003.

22 (3) \$14,000,000 for fiscal year 2004.

23 (4) \$18,000,000 for fiscal year 2005.

24 (5) \$20,000,000 for fiscal year 2006.

1 (i) UNIVERSITY-DOE LABORATORY INTER-
2 ACTIONS.—Of the funds authorized by subsection (a), the
3 following sums are authorized to be appropriated to carry
4 out section 303(d):

5 (1) \$1,000,000 for fiscal year 2002.

6 (2) \$1,100,000 for fiscal year 2003.

7 (3) \$1,200,000 for fiscal year 2004.

8 (4) \$1,300,000 for fiscal year 2005.

9 (5) \$1,300,000 for fiscal year 2006.

10 **Subtitle B—Spent Nuclear Fuel**
11 **and Fuel Cycle Research, Devel-**
12 **opment, and Demonstration**

13 **SEC. 321. OFFICE OF SPENT NUCLEAR FUEL RESEARCH.**

14 (a) DEFINITION.—In this section the term “Associate
15 Director” means the Associate Director of the Office of
16 Spent Nuclear Fuel Research established by subsection
17 (b).

18 (b) ESTABLISHMENT.—There is established an Office
19 of Spent Nuclear Fuel Research within the Office of Nu-
20 clear Energy, Science and Technology of the Department.

21 (c) HEAD OF OFFICE.—The Office of Spent Nuclear
22 Fuel Research shall be headed by the Associate Director,
23 who shall be a member of the Senior Executive Service
24 appointed by the Director of the Office of Nuclear Energy,

1 Science and Technology, and compensated at a rate deter-
2 mined by applicable law.

3 (d) DUTIES OF THE ASSOCIATE DIRECTOR.—

4 (1) PARTICIPATION.—The Associate Director
5 shall coordinate the participation of national labora-
6 tories, other Department facilities, universities, the
7 commercial nuclear industry, and other organiza-
8 tions in the research, development, and demonstra-
9 tion of technologies for the treatment, recycling, and
10 disposal of spent nuclear fuel and high-level radio-
11 active waste.

12 (2) ACTIVITIES.—The Associate Director
13 shall—

14 (A) develop a research plan to provide rec-
15 ommendations to the Secretary by 2015;

16 (B) identify promising technologies for the
17 treatment, recycling, and disposal of spent nu-
18 clear fuel and high-level radioactive waste;

19 (C) conduct research, development, and
20 demonstration activities for promising tech-
21 nologies;

22 (D) ensure that all activities include as key
23 objectives minimization of proliferation concerns
24 and risk to health of the general public and site

1 workers, as well as development of cost-effective
2 technologies;

3 (E) require research on both reactor-based
4 and accelerator-based transmutation systems;

5 (F) require research on advanced pro-
6 cessing and separations;

7 (G) include participation of international
8 collaborators in research efforts, and provide
9 funding to a collaborator that brings unique ca-
10 pabilities not available in the United States if
11 the country in which the collaborator is located
12 is unable to provide support; and

13 (H) ensure that research efforts are co-
14 ordinated with research on advanced fuel cycles
15 and reactors conducted by the Office of Nuclear
16 Energy, Science and Technology.

17 (e) GRANT AND CONTRACT AUTHORITY.—The Sec-
18 retary may make grants, or enter into contracts, for the
19 purposes of the activities described in subsection (d)(2).

20 (f) REPORT.—The Secretary shall report on the ac-
21 tivities and expenditures of the Office, describing the
22 progress being made in the activities described in sub-
23 section (d)(2), as part of the Department's annual budget
24 submission.

1 **SEC. 322. ADVANCED FUEL RECYCLING TECHNOLOGY RE-**
2 **SEARCH AND DEVELOPMENT PROGRAM.**

3 (a) IN GENERAL.—The Secretary, through the Direc-
4 tor of the Office of Nuclear Energy, Science and Tech-
5 nology, shall conduct an advanced fuel recycling tech-
6 nology research and development program to further the
7 availability of proliferation-resistant fuel recycling tech-
8 nologies as an alternative to aqueous reprocessing in sup-
9 port of evaluation of alternative national strategies for
10 spent nuclear fuel and the Generation IV advanced reactor
11 concepts, subject to annual review by the Secretary’s Nu-
12 clear Energy Research Advisory Committee or other inde-
13 pendent entity, as appropriate.

14 (b) REPORTS.—The Secretary shall report on the ac-
15 tivities of the advanced fuel recycling technology research
16 and development program, as part of the Department’s
17 annual budget submission.

18 (c) AUTHORIZATION OF APPROPRIATIONS.—There
19 are authorized to be appropriated to the Secretary to carry
20 out this section—

21 (1) \$10,000,000 for fiscal year 2002; and

22 (2) such sums as are necessary for fiscal year
23 2003 and fiscal year 2004.

1 **Subtitle C—Department of Energy**
2 **Authorization of Appropriations**

3 **SEC. 341. NUCLEAR ENERGY RESEARCH INITIATIVE.**

4 (a) PROGRAM.—The Secretary, through the Office of
5 Nuclear Energy, Science and Technology, shall conduct a
6 Nuclear Energy Research Initiative for grants to be com-
7 petitively awarded and subject to peer review for research
8 relating to nuclear energy.

9 (b) OBJECTIVES.—The program shall be directed to-
10 ward accomplishing the objectives of—

11 (1) developing advanced concepts and scientific
12 breakthroughs in nuclear fission and reactor tech-
13 nology to address and overcome the principal tech-
14 nical and scientific obstacles to the expanded use of
15 nuclear energy in the United States;

16 (2) advancing the state of nuclear technology to
17 maintain a competitive position in foreign markets
18 and a future domestic market;

19 (3) promoting and maintaining a United States
20 nuclear science and engineering infrastructure to
21 meet future technical challenges;

22 (4) providing an effective means to collaborate
23 on a cost-shared basis with international agencies
24 and research organizations to address and influence
25 nuclear technology development worldwide; and

1 (5) promoting United States leadership and
2 partnerships in bilateral and multilateral nuclear en-
3 ergy research.

4 (c) AUTHORIZATION OF APPROPRIATIONS.—There
5 are authorized to be appropriated to the Secretary to carry
6 out this section—

7 (1) \$60,000,000 for fiscal year 2002; and

8 (2) such sums as are necessary for fiscal year
9 2003 and fiscal year 2004.

10 **SEC. 342. NUCLEAR ENERGY PLANT OPTIMIZATION PRO-**
11 **GRAM.**

12 (a) PROGRAM.—The Secretary, through the Office of
13 Nuclear Energy, Science and Technology, shall conduct a
14 Nuclear Energy Plant Optimization research and develop-
15 ment program jointly with industry and cost-shared by in-
16 dustry by least 50 percent and subject to annual review
17 by the Secretary’s Nuclear Energy Research Advisory
18 Committee or other independent entity, as appropriate.

19 (b) OBJECTIVES.—The program shall be directed to-
20 ward accomplishing the objectives of—

21 (1) managing long-term effects of component
22 aging; and

23 (2) improving the efficiency and productivity of
24 existing nuclear power stations.

1 (c) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated to the Secretary to carry
3 out this section—

4 (1) \$15,000,000 for fiscal year 2002; and

5 (2) such sums as are necessary for fiscal years
6 2003 through 2006.

7 **SEC. 343. NUCLEAR ENERGY TECHNOLOGIES.**

8 (a) IN GENERAL.—The Secretary, through the Office
9 of Nuclear Energy, Science and Technology, shall conduct
10 a study of Generation IV nuclear energy systems, includ-
11 ing development of a technology roadmap and perform-
12 ance of research and development necessary to make an
13 informed technical decision regarding the most promising
14 candidates for commercial application.

15 (b) REACTOR CHARACTERISTICS.—To the extent
16 practicable, in conducting the study under subsection (a),
17 the Secretary shall study nuclear energy systems that offer
18 the highest probability of achieving the goals for Genera-
19 tion IV nuclear energy systems, including—

20 (1) economics competitive with any other gen-
21 erators;

22 (2) enhanced safety features, including passive
23 safety features;

24 (3) substantially reduced production of high-
25 level waste, as compared with the quantity of waste

1 produced by reactors in operation on the date of en-
2 actment of this Act;

3 (4) highly proliferation-resistant fuel and waste;

4 (5) sustainable energy generation including op-
5 timized fuel utilization; and

6 (6) substantially improved thermal efficiency, as
7 compared with the thermal efficiency of reactors in
8 operation on the date of enactment of this Act.

9 (c) CONSULTATION.—In conducting the study under
10 subsection (a), the Secretary shall consult with appro-
11 priate representatives of industry, institutions of higher
12 education, Federal agencies, and international, profes-
13 sional, and technical organizations.

14 (d) REPORT.—

15 (1) IN GENERAL.—Not later than December 31,
16 2002, the Secretary shall transmit to the appro-
17 priate congressional committees a report describing
18 the activities of the Secretary under this section, and
19 plans for research and development leading to a
20 public/private cooperative demonstration of one or
21 more Generation IV nuclear energy systems.

22 (2) CONTENTS.—The report shall contain—

23 (A) an assessment of all available tech-
24 nologies;

1 (B) a summary of actions needed for the
2 most promising candidates to be considered as
3 viable commercial options within the five to ten
4 years after the date of the report, with consid-
5 eration of regulatory, economic, and technical
6 issues;

7 (C) a recommendation of not more than
8 three promising Generation IV nuclear energy
9 system concepts for further development;

10 (D) an evaluation of opportunities for pub-
11 lic/private partnerships;

12 (E) a recommendation for structure of a
13 public/private partnership to share in develop-
14 ment and construction costs;

15 (F) a plan leading to the selection and con-
16 ceptual design, by September 30, 2004, of at
17 least one Generation IV nuclear energy system
18 concept recommended under subparagraph (C)
19 for demonstration through a public/private
20 partnership;

21 (G) an evaluation of opportunities for
22 siting demonstration facilities on Department of
23 Energy land; and

24 (H) a recommendation for appropriate in-
25 volvement of other Federal agencies.

1 (e) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated to the Secretary to carry
3 out this section and to carry out the recommendations in
4 the report transmitted under subsection (d)—

5 (1) \$50,000,000 for fiscal year 2002; and

6 (2) such sums as are necessary for fiscal year
7 2003 and fiscal year 2004.

8 **SEC. 344. AUTHORIZATION OF APPROPRIATIONS.**

9 (a) OPERATION AND MAINTENANCE.—There are au-
10 thorized to be appropriated to the Secretary to carry out
11 activities authorized under this title for nuclear energy op-
12 eration and maintenance, including amounts authorized
13 under sections 304(a), 322(c), 341(c), 342(c), and 343(e),
14 and including Advanced Radioisotope Power Systems,
15 Test Reactor Landlord, and Program Direction,
16 \$221,000,000 for fiscal year 2002, \$230,000,000 for fis-
17 cal year 2003, and \$240,000,000 for fiscal year 2004, to
18 remain available until expended.

19 (b) CONSTRUCTION.—There are authorized to be ap-
20 propriated to the Secretary—

21 (1) \$950,000 for fiscal year 2002, \$2,200,000
22 for fiscal year 2003, \$1,246,000 for fiscal year
23 2004, and \$1,699,000 for fiscal year 2005 for com-
24 pletion of construction of Project 99-E-200, Test
25 Reactor Area Electric Utility Upgrade, Idaho Na-

1 tional Engineering and Environmental Laboratory;
2 and

3 (2) \$500,000 for fiscal year 2002, \$500,000 for
4 fiscal year 2003, \$500,000 for fiscal year 2004, and
5 \$500,000 for fiscal year 2005, for completion of con-
6 struction of Project 95-E-201, Test Reactor Area
7 Fire and Life Safety Improvements, Idaho National
8 Engineering and Environmental Laboratory.

9 (c) LIMITS ON USE OF FUNDS.—None of the funds
10 authorized to be appropriated in subsection (a) may be
11 used for Nuclear Energy Isotope Support and Production,
12 Argonne National Laboratory-West Operations, Fast Flux
13 Test Facility, or Nuclear Facilities Management.

14 **TITLE IV—FOSSIL ENERGY**

15 **Subtitle A—Clean Coal**

16 **SEC. 401. SHORT TITLE.**

17 This subtitle may be cited as the “National Elec-
18 tricity and Environmental Technology Research and De-
19 velopment Act”.

20 **SEC. 402. FINDINGS.**

21 Congress finds that—

22 (1) reliable, affordable, increasingly clean elec-
23 tricity will continue to power the growing United
24 States economy;

1 (2) an increasing use of electrotechnologies, the
2 desire for continuous environmental improvement, a
3 more competitive electricity market, and concerns
4 about rising energy prices add importance to the
5 need for reliable, affordable, increasingly clean elec-
6 tricity;

7 (3) coal, which, as of the date of enactment of
8 this Act, accounts for more than ½ of all electricity
9 generated in the United States, is the most abun-
10 dant fossil energy resource of the United States;

11 (4) coal comprises more than 85 percent of all
12 fossil resources in the United States and exists in
13 quantities sufficient to supply the United States for
14 250 years at current usage rates;

15 (5) investments in electricity generating facility
16 emissions control technology over the past 30 years
17 have reduced the aggregate emissions of pollutants
18 from coal-based generating facilities by 21 percent,
19 even as coal use for electricity generation has nearly
20 tripled; and

21 (6) continued environmental improvement in
22 coal-based generation through continued research,
23 development, and demonstration toward an ultimate
24 goal of near-zero emissions is important and desir-
25 able.

1 **SEC. 403. DEFINITION.**

2 In this subtitle, the term “cost and performance-
3 based goals” means the cost and performance-based goals
4 established under section 4.

5 **SEC. 404. CLEAN COAL POWER INITIATIVE.**

6 (a) IN GENERAL.—The Secretary shall carry out a
7 program of research on and development, demonstration,
8 and commercial application of clean coal technologies
9 under—

10 (1) this subtitle;

11 (2) the Federal Nonnuclear Energy Research
12 and Development Act of 1974 (42 U.S.C. 5901 et
13 seq.);

14 (3) the Energy Reorganization Act of 1974 (42
15 U.S.C. 5801 et seq.); and

16 (4) title XIII of the Energy Policy Act of 1992
17 (42 U.S.C. 13331 et seq.).

18 (b) CONDITIONS.—The research, development, dem-
19 onstration, and commercial application program described
20 in subsection (a) shall be designed to achieve the cost and
21 performance-based goals.

22 **SEC. 405. AUTHORIZATION OF APPROPRIATIONS.**

23 (a) CLEAN COAL POWER INITIATIVE.—Except as
24 provided in section 406, there are authorized to be appro-
25 priated to the Secretary to carry out the Clean Coal Power
26 Initiative under section 404 \$200,000,000 for each of the

1 fiscal years 2002 through 2011, to remain available until
2 expended.

3 (b) OTHER COAL AND RELATED TECHNOLOGIES
4 PROGRAMS.—Except as provided in section 406, there are
5 authorized to be appropriated to the Secretary
6 \$172,000,000 for fiscal year 2002, \$179,000,000 for fis-
7 cal year 2003, and \$186,000,000 for fiscal year 2004, to
8 remain available until expended, for other coal and related
9 technologies programs, which shall include—

- 10 (1) Innovations for Existing Plants;
- 11 (2) Integrated Gasification Combined Cycle;
- 12 (3) Pressurized Fluidized Bed Systems;
- 13 (4) Turbines;
- 14 (5) Sequestration Research and Development;
- 15 (6) Transportation Fuels and Chemicals;
- 16 (7) Solid Fuels and Feedstocks;
- 17 (8) Advanced Fuels Research; and
- 18 (9) Advanced Research.

19 **SEC. 406. LIMIT ON USE OF FUNDS.**

20 Notwithstanding section 405, no funds may be used
21 to carry out the activities authorized by this subtitle until
22 30 days after the Secretary transmits a report to the ap-
23 propriate congressional committees that includes a de-
24 tailed 10-year plan on implementation, Federal and non-
25 Federal funding profiles, and provisions for recoupment

1 of Federal funding, and that addresses in detail how the
2 Department intends to avoid management problems en-
3 countered in the administration of the Clean Coal Tech-
4 nology Program.

5 **Subtitle B—Oil and Gas**

6 **SEC. 421. PETROLEUM-OIL TECHNOLOGY.**

7 The Secretary shall conduct a program of research,
8 development, demonstration, and commercial application
9 on petroleum-oil technology. The program shall address—

- 10 (1) Exploration and Production Supporting Re-
11 search;
- 12 (2) Oil Technology Reservoir Management/Ex-
13 tension; and
- 14 (3) Effective Environmental Protection.

15 **SEC. 422. GAS.**

16 The Secretary shall conduct a program of research,
17 development, demonstration, and commercial application
18 on natural gas technologies. The program shall address—

- 19 (1) Exploration and Production;
- 20 (2) Infrastructure; and
- 21 (3) Effective Environmental Protection.

22 **SEC. 423. UNCONVENTIONAL AND ULTRA-DEEPWATER NAT- 23 URAL GAS AND PETROLEUM.**

24 The Secretary shall conduct a program of research,
25 development, and demonstration of unconventional and

1 ultra-deepwater natural gas and petroleum exploration
2 and production technologies.

3 **Subtitle C—Fuel Cells**

4 **SEC. 444. FUEL CELLS.**

5 The Secretary shall conduct a program of research,
6 development, demonstration, and commercial application
7 on fuel cells. The program shall address—

- 8 (1) Advanced Research;
- 9 (2) Systems Development;
- 10 (3) Vision 21-Hybrids; and
- 11 (4) Innovative Concepts.

12 **Subtitle D—Authorization of** 13 **Appropriations**

14 **SEC. 461. AUTHORIZATION OF APPROPRIATIONS.**

15 (a) OPERATION AND MAINTENANCE.—There are au-
16 thorized to be appropriated to the Secretary for operation
17 and maintenance for subtitles B and C, and for Fossil En-
18 ergy Research and Development Headquarters Program
19 Direction, Field Program Direction, Plant and Capital
20 Equipment, Cooperative Research and Development, Im-
21 port/Export Authorization, and Advanced Metallurgical
22 Processes \$238,000,000 for fiscal year 2002,
23 \$247,000,000 for fiscal year 2003, and \$257,000,000 for
24 fiscal year 2004, to remain available until expended.

1 (b) LIMITS ON USE OF FUNDS.—None of the funds
2 authorized to be appropriated in subsection (a) may be
3 used for—

4 (1) Gas Hydrates.

5 (2) Fossil Energy Environmental Restoration;

6 or

7 (3) research, development, demonstration, and
8 commercial application on coal and related tech-
9 nologies, including activities under subtitle A.

10 **TITLE V—SCIENCE**
11 **Subtitle A—Fusion Energy**
12 **Sciences**

13 **SEC. 501. SHORT TITLE.**

14 This subtitle may be cited as the “Fusion Energy
15 Sciences Act of 2001”.

16 **SEC. 502. FINDINGS.**

17 The Congress finds that—

18 (1) economic prosperity is closely linked to an
19 affordable and ample energy supply;

20 (2) environmental quality is closely linked to en-
21 ergy production and use;

22 (3) population, worldwide economic develop-
23 ment, energy consumption, and stress on the envi-
24 ronment are all expected to increase substantially in
25 the coming decades;

1 (4) the few energy options with the potential to
2 meet economic and environmental needs for the
3 long-term future should be pursued as part of a bal-
4 anced national energy plan;

5 (5) fusion energy is an attractive long-term en-
6 ergy source because of the virtually inexhaustible
7 supply of fuel, and the promise of minimal adverse
8 environmental impact and inherent safety;

9 (6) the National Research Council, the Presi-
10 dent's Committee of Advisers on Science and Tech-
11 nology, and the Secretary of Energy Advisory Board
12 have each recently reviewed the Fusion Energy
13 Sciences Program and each strongly supports the
14 fundamental science and creative innovation of the
15 program, and has confirmed that progress toward
16 the goal of producing practical fusion energy has
17 been excellent, although much scientific and engi-
18 neering work remains to be done;

19 (7) each of these reviews stressed the need for
20 a magnetic fusion burning plasma experiment to ad-
21 dress key scientific issues and as a necessary step in
22 the development of fusion energy;

23 (8) the National Research Council has also
24 called for a broadening of the Fusion Energy
25 Sciences Program research base as a means to more

1 fully integrate the fusion science community into the
2 broader scientific community; and

3 (9) the Fusion Energy Sciences Program budg-
4 et is inadequate to support the necessary science and
5 innovation for the present generation of experiments,
6 and cannot accommodate the cost of a burning plas-
7 ma experiment constructed by the United States, or
8 even the cost of key participation by the United
9 States in an international effort.

10 **SEC. 503. PLAN FOR FUSION EXPERIMENT.**

11 (a) PLAN FOR UNITED STATES FUSION EXPERI-
12 MENT.—The Secretary, on the basis of full consultation
13 with the Fusion Energy Sciences Advisory Committee and
14 the Secretary of Energy Advisory Board, as appropriate,
15 shall develop a plan for United States construction of a
16 magnetic fusion burning plasma experiment for the pur-
17 pose of accelerating scientific understanding of fusion
18 plasmas. The Secretary shall request a review of the plan
19 by the National Academy of Sciences, and shall transmit
20 the plan and the review to the Congress by July 1, 2004.

21 (b) REQUIREMENTS OF PLAN.—The plan described
22 in subsection (a) shall—

23 (1) address key burning plasma physics issues;
24 and

1 (2) include specific information on the scientific
2 capabilities of the proposed experiment, the rel-
3 evance of these capabilities to the goal of practical
4 fusion energy, and the overall design of the experi-
5 ment including its estimated cost and potential con-
6 struction sites.

7 (c) UNITED STATES PARTICIPATION IN AN INTER-
8 NATIONAL EXPERIMENT.—In addition to the plan de-
9 scribed in subsection (a), the Secretary, on the basis of
10 full consultation with the Fusion Energy Sciences Advi-
11 sory Committee and the Secretary of Energy Advisory
12 Board, as appropriate, may also develop a plan for United
13 States participation in an international burning plasma
14 experiment for the same purpose, whose construction is
15 found by the Secretary to be highly likely and where
16 United States participation is cost effective relative to the
17 cost and scientific benefits of a domestic experiment de-
18 scribed in subsection (a). If the Secretary elects to develop
19 a plan under this subsection, he shall include the informa-
20 tion described in subsection (b), and an estimate of the
21 cost of United States participation in such an inter-
22 national experiment. The Secretary shall request a review
23 by the National Academies of Sciences and Engineering
24 of a plan developed under this subsection, and shall trans-

1 mit the plan and the review to the Congress not later than
2 July 1, 2004.

3 (d) AUTHORIZATION OF RESEARCH AND DEVELOP-
4 MENT.—The Secretary, through the Fusion Energy
5 Sciences Program, may conduct any research and develop-
6 ment necessary to fully develop the plans described in this
7 section.

8 **SEC. 504. PLAN FOR FUSION ENERGY SCIENCES PROGRAM.**

9 Not later than 6 months after the date of the enact-
10 ment of this Act, the Secretary, in full consultation with
11 FESAC, shall develop and transmit to the Congress a plan
12 for the purpose of ensuring a strong scientific base for
13 the Fusion Energy Sciences Program and to enable the
14 experiments described in section 503. Such plan shall in-
15 clude as its objectives—

16 (1) to ensure that existing fusion research fa-
17 cilities and equipment are more fully utilized with
18 appropriate measurements and control tools;

19 (2) to ensure a strengthened fusion science the-
20 ory and computational base;

21 (3) to ensure that the selection of and funding
22 for new magnetic and inertial fusion research facili-
23 ties is based on scientific innovation and cost effec-
24 tiveness;

1 (4) to improve the communication of scientific
2 results and methods between the fusion science com-
3 munity and the wider scientific community;

4 (5) to ensure that adequate support is provided
5 to optimize the design of the magnetic fusion burn-
6 ing plasma experiments referred to in section 503;

7 (6) to ensure that inertial confinement fusion
8 facilities are utilized to the extent practicable for the
9 purpose of inertial fusion energy research and devel-
10 opment;

11 (7) to develop a roadmap for a fusion-based en-
12 ergy source that shows the important scientific ques-
13 tions, the evolution of confinement configurations,
14 the relation between these two features, and their re-
15 lation to the fusion energy goal;

16 (8) to establish several new centers of excel-
17 lence, selected through a competitive peer-review
18 process and devoted to exploring the frontiers of fu-
19 sion science;

20 (9) to ensure that the National Science Foun-
21 dation, and other agencies, as appropriate, play a
22 role in extending the reach of fusion science and in
23 sponsoring general plasma science; and

1 (10) to ensure that there be continuing broad
2 assessments of the outlook for fusion energy and
3 periodic external reviews of fusion energy sciences.

4 **SEC. 505. AUTHORIZATION OF APPROPRIATIONS.**

5 There are authorized to be appropriated to the Sec-
6 retary for the development and review, but not for imple-
7 mentation, of the plans described in this subtitle and for
8 activities of the Fusion Energy Sciences Program
9 \$320,000,000 for fiscal year 2002 and \$335,000,000 for
10 fiscal year 2003, of which up to \$15,000,000 for each of
11 fiscal year 2002 and fiscal year 2003 may be used to es-
12 tablish several new centers of excellence, selected through
13 a competitive peer-review process and devoted to exploring
14 the frontiers of fusion science.

15 **Subtitle B—Spallation Neutron**
16 **Source**

17 **SEC. 521. DEFINITION.**

18 For the purposes of this subtitle, the term “Spall-
19 ation Neutron Source” means Department Project 99–E–
20 334, Oak Ridge National Laboratory, Oak Ridge, Ten-
21 nessee.

22 **SEC. 522. AUTHORIZATION OF APPROPRIATIONS.**

23 (a) **AUTHORIZATION OF CONSTRUCTION FUNDING.—**
24 There are authorized to be appropriated to the Secretary
25 for construction of the Spallation Neutron Source—

- 1 (1) \$276,300,000 for fiscal year 2002;
- 2 (2) \$210,571,000 for fiscal year 2003;
- 3 (3) \$124,600,000 for fiscal year 2004;
- 4 (4) \$79,800,000 for fiscal year 2005; and
- 5 (5) \$41,100,000 for fiscal year 2006 for com-
6 pletion of construction.

7 (b) **AUTHORIZATION OF OTHER PROJECT FUND-**
8 **ING.**—There are authorized to be appropriated to the Sec-
9 retary for other project costs (including research and de-
10 velopment necessary to complete the project, preoperations
11 costs, and capital equipment not related to construction)
12 of the Spallation Neutron Source \$15,353,000 for fiscal
13 year 2002 and \$103,279,000 for the period encompassing
14 fiscal years 2003 through 2006, to remain available until
15 expended through September 30, 2006.

16 **SEC. 523. REPORT.**

17 The Secretary shall report on the Spallation Neutron
18 Source as part of the Department's annual budget submis-
19 sion, including a description of the achievement of mile-
20 stones, a comparison of actual costs to estimated costs,
21 and any changes in estimated project costs or schedule.

22 **SEC. 524. LIMITATIONS.**

23 The total amount obligated by the Department, in-
24 cluding prior year appropriations, for the Spallation Neu-
25 tron Source may not exceed—

- 1 (1) \$1,192,700,000 for costs of construction;
- 2 (2) \$219,000,000 for other project costs; and
- 3 (3) \$1,411,700,000 for total project cost.

4 **Subtitle C—Facilities,** 5 **Infrastructure, and User Facilities**

6 **SEC. 541. DEFINITION.**

7 For purposes of this subtitle—

8 (1) the term “nonmilitary energy laboratory”
9 means—

- 10 (A) Ames Laboratory;
- 11 (B) Argonne National Laboratory;
- 12 (C) Brookhaven National Laboratory;
- 13 (D) Fermi National Accelerator Labora-
14 tory;
- 15 (E) Lawrence Berkeley National Labora-
16 tory;
- 17 (F) Oak Ridge National Laboratory;
- 18 (G) Pacific Northwest National Labora-
19 tory;
- 20 (H) Princeton Plasma Physics Laboratory;
- 21 (I) Stanford Linear Accelerator Center;
- 22 (J) Thomas Jefferson National Accelerator
23 Facility; or
- 24 (K) any other facility of the Department
25 that the Secretary, in consultation with the Di-

1 rector, Office of Science and the appropriate
2 congressional committees, determines to be con-
3 sistent with the mission of the Office of
4 Science; and

5 (2) the term “user facility” means—

6 (A) an Office of Science facility at a non-
7 military energy laboratory that provides special
8 scientific and research capabilities, including
9 technical expertise and support as appropriate,
10 to serve the research needs of the Nation’s uni-
11 versities, industry, private laboratories, Federal
12 laboratories, and others, including research in-
13 stitutions or individuals from other nations
14 where reciprocal accommodations are provided
15 to United States research institutions and indi-
16 viduals or where the Secretary considers such
17 accommodation to be in the national interest;
18 and

19 (B) any other Office of Science funded fa-
20 cility designated by the Secretary as a user fa-
21 cility.

1 **SEC. 542. FACILITY AND INFRASTRUCTURE SUPPORT FOR**
2 **NONMILITARY ENERGY LABORATORIES.**

3 (a) FACILITY POLICY.—The Secretary shall develop
4 and implement a least-cost nonmilitary energy laboratory
5 facility and infrastructure strategy for—

6 (1) maintaining existing facilities and infra-
7 structure, as needed;

8 (2) closing unneeded facilities;

9 (3) making facility modifications; and

10 (4) building new facilities.

11 (b) PLAN.—The Secretary shall prepare a com-
12 prehensive 10-year plan for conducting future facility
13 maintenance, making repairs, modifications, and new ad-
14 ditions, and constructing new facilities at each nonmilitary
15 energy laboratory. Such plan shall provide for facilities
16 work in accordance with the following priorities:

17 (1) Providing for the safety and health of em-
18 ployees, visitors, and the general public with regard
19 to correcting existing structural, mechanical, elec-
20 trical, and environmental deficiencies.

21 (2) Providing for the repair and rehabilitation
22 of existing facilities to keep them in use and prevent
23 deterioration, if feasible.

24 (3) Providing engineering design and construc-
25 tion services for those facilities that require modi-

1 fication or additions in order to meet the needs of
2 new or expanded programs.

3 (c) REPORT.—

4 (1) TRANSMITTAL.—Within 1 year after the
5 date of the enactment of this Act, the Secretary
6 shall prepare and transmit to the appropriate con-
7 gressional committees a report containing the plan
8 prepared under subsection (b).

9 (2) CONTENTS.—For each nonmilitary energy
10 laboratory, such report shall contain—

11 (A) the current priority list of proposed fa-
12 cilities and infrastructure projects, including
13 cost and schedule requirements;

14 (B) a current ten-year plan that dem-
15 onstrates the reconfiguration of its facilities and
16 infrastructure to meet its missions and to ad-
17 dress its long-term operational costs and return
18 on investment;

19 (C) the total current budget for all facili-
20 ties and infrastructure funding; and

21 (D) the current status of each facilities
22 and infrastructure project compared to the
23 original baseline cost, schedule, and scope.

24 (3) ADDITIONAL ELEMENTS.—The report shall
25 also—

1 (A) include a plan for new facilities and fa-
2 cility modifications at each nonmilitary energy
3 laboratory that will be required to meet the De-
4 partment's changing missions of the twenty-
5 first century, including schedules and estimates
6 for implementation, and including a section out-
7 lining long-term funding requirements con-
8 sistent with anticipated budgets and annual au-
9 thorization of appropriations;

10 (B) address the coordination of moderniza-
11 tion and consolidation of facilities among the
12 nonmilitary energy laboratories in order to meet
13 changing mission requirements; and

14 (C) provide for annual reports to the ap-
15 propriate congressional committees on accom-
16 plishments, conformance to schedules, commit-
17 ments, and expenditures.

18 **SEC. 543. USER FACILITIES.**

19 (a) NOTICE REQUIREMENT.—When the Department
20 makes a user facility available to universities and other
21 potential users, or seeks input from universities and other
22 potential users regarding significant characteristics or
23 equipment in a user facility or a proposed user facility,
24 the Department shall ensure broad public notice of such

1 availability or such need for input to universities and other
2 potential users.

3 (b) COMPETITION REQUIREMENT.—When the De-
4 partment considers the participation of a university or
5 other potential user in the establishment or operation of
6 a user facility, the Department shall employ full and open
7 competition in selecting such a participant.

8 (c) PROHIBITION.—The Department may not redес-
9 igrate a user facility, as defined by section 541(b) as
10 something other than a user facility for avoid the require-
11 ments of subsections (a) and (b).

12 **Subtitle D—Advisory Panel on** 13 **Office of Science**

14 **SEC. 561. ESTABLISHMENT.**

15 The Director of the Office of Science and Technology
16 Policy, in consultation with the Secretary, shall establish
17 an Advisory Panel on the Office of Science comprised of
18 knowledgeable individuals to—

19 (1) address concerns about the current status
20 and the future of scientific research supported by
21 the Office;

22 (2) examine alternatives to the current organi-
23 zational structure of the Office within the Depart-
24 ment, taking into consideration existing structures

1 for the support of scientific research in other Fed-
2 eral agencies and the private sector; and

3 (3) suggest actions to strengthen the scientific
4 research supported by the Office that might be
5 taken jointly by the Department and Congress.

6 **SEC. 562. REPORT.**

7 Within 180 days after the date of the enactment of
8 this Act, the Advisory Panel shall transmit its findings
9 and recommendations in a report to the Director of the
10 Office of Science and Technology Policy and the Sec-
11 retary. The Director and the Secretary shall jointly—

12 (1) consider each of the Panel’s findings and
13 recommendations, and comment on each as they
14 consider appropriate; and

15 (2) transmit the Panel’s report and the com-
16 ments of the Director and the Secretary on the re-
17 port to the appropriate congressional committees
18 within 270 days after the date of the enactment of
19 this Act.

20 **Subtitle E—Department of Energy**
21 **Authorization of Appropriations**

22 **SEC. 581. AUTHORIZATION OF APPROPRIATIONS.**

23 (a) OPERATION AND MAINTENANCE.—Including the
24 amounts authorized to be appropriated for fiscal year
25 2002 under section 505 for Fusion Energy Sciences and

1 under section 522(b) for the Spallation Neutron Source,
2 there are authorized to be appropriated to the Secretary
3 for the Office of Science (also including High Energy
4 Physics, Nuclear Physics, Biological and Environmental
5 Research, Basic Energy Sciences (except for the Spall-
6 ation Neutron Source), Advanced Scientific Computing
7 Research, Energy Research Analysis, Multiprogram En-
8 ergy Laboratories-Facilities Support, Facilities and Infra-
9 structure, Safeguards and Security, and Program Direc-
10 tion) operation and maintenance \$3,296,076,000 for fiscal
11 year 2002, to remain available until expended.

12 (b) CONSTRUCTION.—In addition to the amounts au-
13 thorized to be appropriated under section 522(a) for con-
14 struction of the Spallation Neutron Source, there are au-
15 thorized to be appropriated to the Secretary for Science—

16 (1) \$11,400,000 for fiscal year 2002 for com-
17 pletion of construction of Project 98-G-304,
18 Neutrinos at the Main Injector, Fermi National Ac-
19 celerator Laboratory Project;

20 (2) \$10,000,000 for fiscal year 2002 and
21 \$1,405,000 for fiscal year 2003 for completion of
22 construction of Project 01-E-300, Laboratory for
23 Comparative and Functional Genomics, Oak Ridge
24 National Laboratory;

1 (3) \$4,000,000 for fiscal year 2002, \$8,000,000
2 for fiscal year 2003, and \$2,000,000 for fiscal year
3 2004 for completion of construction of Project 02-
4 SC-002, Project Engineering Design (PED), Var-
5 ious Locations;

6 (4) \$3,183,000 for fiscal year 2002 for comple-
7 tion of construction of Project 02-SC-002, Multipro-
8 gram Energy Laboratories Infrastructure Project
9 Engineering Design (PED), Various Locations; and

10 (5) \$18,133,000 for fiscal year 2002 and
11 \$13,029,000 for fiscal year 2003 for completion of
12 construction of Project MEL-001, Multiprogram En-
13 ergy Laboratories, Infrastructure, Various Loca-
14 tions.

15 (c) LIMITS ON USE OF FUNDS.—None of the funds
16 authorized to be appropriated in subsection (b) may be
17 used for construction at any national security laboratory
18 as defined in section 3281(1) of the National Defense Au-
19 thorization Act for Fiscal Year 2000 (50 U.S.C. 2471(1))
20 or at any nuclear weapons production facility as defined
21 in section 3281(2) of the National Defense Authorization
22 Act for Fiscal Year 2000 (50 U.S.C. 2471(2)).

1 **TITLE VI—MISCELLANEOUS**
2 **Subtitle A—General Provisions for**
3 **the Department of Energy**

4 **SEC. 601. RESEARCH, DEVELOPMENT, DEMONSTRATION,**
5 **AND COMMERCIAL APPLICATION OF ENERGY**
6 **TECHNOLOGY PROGRAMS, PROJECTS, AND**
7 **ACTIVITIES.**

8 (a) **AUTHORIZED ACTIVITIES.**—Except as otherwise
9 provided in this Act, research, development, demonstra-
10 tion, and commercial application programs, projects, and
11 activities for which appropriations are authorized under
12 this Act may be carried out under the procedures of the
13 Federal Nonnuclear Energy Research and Development
14 Act of 1974 (42 U.S.C. 5901 et seq.), the Atomic Energy
15 Act of 1954 (42 U.S.C. 2011 et seq.), or any other Act
16 under which the Secretary is authorized to carry out such
17 programs, projects, and activities, but only to the extent
18 the Secretary is authorized to carry out such activities
19 under each such Act.

20 (b) **AUTHORIZED AGREEMENTS.**—Except as other-
21 wise provided in this Act, in carrying out research, devel-
22 opment, demonstration, and commercial application pro-
23 grams, projects, and activities for which appropriations
24 are authorized under this Act, the Secretary may use, to
25 the extent authorized under applicable provisions of law,

1 contracts, cooperative agreements, cooperative research
2 and development agreements under the Stevenson-Wydler
3 Technology Innovation Act of 1980 (15 U.S.C. 3701 et
4 seq.), grants, joint ventures, and any other form of agree-
5 ment available to the Secretary.

6 (c) DEFINITION.—For purposes of this section, the
7 term “joint venture” has the meaning given that term
8 under section 2 of the National Cooperative Research and
9 Production Act of 1993 (15 U.S.C. 4301), except that
10 such term may apply under this section to research, devel-
11 opment, demonstration, and commercial application of en-
12 ergy technology joint ventures.

13 (d) PROTECTION OF INFORMATION.—Section
14 12(c)(7) of the Stevenson-Wydler Technology Innovation
15 Act of 1980 (15 U.S.C. 3710a(c)(7)), relating to the pro-
16 tection of information, shall apply to research, develop-
17 ment, demonstration, and commercial application of en-
18 ergy technology programs, projects, and activities for
19 which appropriations are authorized under this Act.

20 (e) GUIDELINES AND PROCEDURES.—The Secretary
21 shall provide guidelines and procedures for the transition,
22 where appropriate, of energy technologies from research
23 through development and demonstration to commercial
24 application of energy technology. Nothing in this section
25 shall preclude the Secretary from—

1 (1) entering into a contract, cooperative agree-
2 ment, cooperative research and development agree-
3 ment under the Stevenson-Wydler Technology Inno-
4 vation Act of 1980 (15 U.S.C. 3701 et seq.), grant,
5 joint venture, or any other form of agreement avail-
6 able to the Secretary under this section that relates
7 to research, development, demonstration, and com-
8 mercial application of energy technology; or

9 (2) extending a contract, cooperative agree-
10 ment, cooperative research and development agree-
11 ment under the Stevenson-Wydler Technology Inno-
12 vation Act of 1980, grant, joint venture, or any
13 other form of agreement available to the Secretary
14 that relates to research, development, and dem-
15 onstration to cover commercial application of energy
16 technology.

17 (f) APPLICATION OF SECTION.—This section shall
18 not apply to any contract, cooperative agreement, coopera-
19 tive research and development agreement under the Ste-
20 venson-Wydler Technology Innovation Act of 1980 (15
21 U.S.C. 3701 et seq.), grant, joint venture, or any other
22 form of agreement available to the Secretary that is in
23 effect as of the date of enactment of this Act.

24 **SEC. 602. LIMITS ON USE OF FUNDS.**

25 (a) FEDERAL ACQUISITION REGULATION.—

1 (1) REQUIREMENT.—None of the funds author-
2 ized to be appropriated to the Secretary by this Act
3 may be used to award, amend, or modify a contract
4 of the Department in a manner that deviates from
5 the Federal Acquisition Regulation, unless the Sec-
6 retary grants, on a case-by-case basis, a waiver to
7 allow for such a deviation. The Secretary may not
8 delegate the authority to grant such a waiver.

9 (2) CONGRESSIONAL NOTICE.—At least 60 days
10 before a contract award, amendment, or modifica-
11 tion for which the Secretary intends to grant such
12 a waiver, the Secretary shall submit to the appro-
13 priate congressional committees a report notifying
14 the committees of the waiver and setting forth the
15 reasons for the waiver.

16 (b) MANAGEMENT AND OPERATING CONTRACTS.—

17 (1) COMPETITIVE PROCEDURE REQUIRE-
18 MENT.—None of the funds authorized to be appro-
19 priated to the Secretary by this Act may be used to
20 award a management and operating contract for a
21 federally owned or operated nonmilitary energy lab-
22 oratory of the Department unless such contract is
23 awarded using competitive procedures or the Sec-
24 retary grants, on a case-by-case basis, a waiver to

1 allow for such a deviation. The Secretary may not
2 delegate the authority to grant such a waiver.

3 (2) CONGRESSIONAL NOTICE.—At least 60 days
4 before a contract award, amendment, or modifica-
5 tion for which the Secretary intends to grant such
6 a waiver, the Secretary shall submit to the appro-
7 priate congressional committees a report notifying
8 the committees of the waiver and setting forth the
9 reasons for the waiver.

10 (c) PRODUCTION OR PROVISION OF ARTICLES OR
11 SERVICES.—None of the funds authorized to be appro-
12 priated to the Secretary by this Act may be used to
13 produce or provide articles or services for the purpose of
14 selling the articles or services to a person outside the Fed-
15 eral Government, unless the Secretary determines that
16 comparable articles or services are not available from a
17 commercial source in the United States.

18 (d) REQUESTS FOR PROPOSALS.—None of the funds
19 authorized to be appropriated to the Secretary by this Act
20 may be used by the Department to prepare or initiate Re-
21 quests for Proposals for a program, project, or activity if
22 the program, project, or activity has not been specifically
23 authorized by Congress.

24 (e) TRADE ASSOCIATIONS.—None of the funds au-
25 thorized to be appropriated to the Secretary by this Act

1 may be used either directly or indirectly to fund a grant,
2 contract, subcontract, or any other form of financial as-
3 sistance awarded by the Department to a trade association
4 on a noncompetitive basis. As part of the Department's
5 annual budget request submission to the Congress, the
6 Secretary shall submit a report to the appropriate congres-
7 sional committees that identifies—

8 (1) the estimated amount of funds provided by
9 the Department to trade associations, by trade asso-
10 ciation, for the fiscal year of such budget submis-
11 sion, as well as for the 2 previous fiscal years;

12 (2) the services either provided or to be pro-
13 vided by each such trade association; and

14 (3) the sources of funds for services provided by
15 each such trade association.

16 **SEC. 603. COST SHARING.**

17 (a) **RESEARCH AND DEVELOPMENT.**—Except as oth-
18 erwise provided in this Act, the Secretary shall require,
19 for research and development programs, projects, and ac-
20 tivities carried out by industry under this Act, a commit-
21 ment from non-Federal sources of at least 20 percent of
22 the cost of such programs, projects, and activities.

23 (b) **DEMONSTRATION AND COMMERCIAL APPLICA-**
24 **TION.**—Except as otherwise provided in this Act, the Sec-
25 retary shall require a commitment from non-Federal

1 sources of at least 50 percent of the cost of any dem-
2 onstration or commercial application program, project, or
3 activity conducted under this Act.

4 **SEC. 604. LIMITATION ON DEMONSTRATION AND COMMER-**
5 **CIAL APPLICATION OF ENERGY TECH-**
6 **NOLOGY.**

7 Except as otherwise provided in this Act, the Sec-
8 retary shall provide funding for scientific or energy dem-
9 onstration and commercial application of energy tech-
10 nology programs, projects, or activities only for tech-
11 nologies or processes that can be reasonably expected to
12 yield new, measurable benefits to the cost, efficiency, or
13 performance of the technology or process.

14 **SEC. 605. REPROGRAMMING.**

15 (a) **AUTHORITY.**—The Secretary may use amounts
16 appropriated under this Act for a program, project, or ac-
17 tivity other than the program, project, or activity for
18 which such amounts were appropriated only if—

19 (1) the Secretary has transmitted to the appro-
20 priate congressional committees a report described
21 in subsection (b) and a period of 30 days has
22 elapsed after such committees receive the report;

23 (2) amounts used for the program, project, or
24 activity do not exceed—

1 (A) 105 percent of the amount authorized
2 for the program, project, or activity; or

3 (B) \$250,000 more than the amount au-
4 thorized for the program, project, or activity,
5 whichever is less; and

6 (3) the program, project, or activity has been
7 presented to, or requested of, the Congress by the
8 Secretary.

9 (b) REPORT.—(1) The report referred to in sub-
10 section (a) is a report containing a full and complete state-
11 ment of the action proposed to be taken and the facts and
12 circumstances relied upon in support of the proposed ac-
13 tion.

14 (2) In the computation of the 30-day period under
15 subsection (a), there shall be excluded any day on which
16 either House of Congress is not in session because of an
17 adjournment of more than 3 days to a day certain.

18 (c) LIMITATIONS.—(1) In no event may the total
19 amount of funds obligated by the Secretary pursuant to
20 this Act exceed the total amount authorized to be appro-
21 priated to the Secretary by this Act.

22 (2) Funds appropriated to the Secretary pursuant to
23 this Act may not be used for an item for which Congress
24 has declined to authorize funds.

1 **Subtitle B—Other Miscellaneous**
2 **Provisions**

3 **SEC. 611. NOTICE OF REORGANIZATION.**

4 The Secretary shall provide notice to the appropriate
5 congressional committees not later than 15 days before
6 any reorganization of any environmental research or devel-
7 opment, scientific or energy research, development, or
8 demonstration, or commercial application of energy tech-
9 nology program, project, or activity of the Department.

10 **SEC. 612. LIMITS ON GENERAL PLANT PROJECTS.**

11 If, at any time during the construction of a civilian
12 environmental research and development, scientific or en-
13 ergy research, development, or demonstration, or commer-
14 cial application of energy technology project of the Depart-
15 ment for which no specific funding level is provided by
16 law, the estimated cost (including any revision thereof) of
17 the project exceeds \$2,000,000, the Secretary may not
18 continue such construction unless the Secretary has fur-
19 nished a complete report to the appropriate congressional
20 committees explaining the project and the reasons for the
21 estimate or revision.

22 **SEC. 613. LIMITS ON CONSTRUCTION PROJECTS.**

23 (a) LIMITATION.—Except as provided in subsection
24 (b), construction on a civilian environmental research and
25 development, scientific or energy research, development, or

1 demonstration, or commercial application of energy tech-
2 nology project of the Department for which funding has
3 been specifically provided by law may not be started, and
4 additional obligations may not be incurred in connection
5 with the project above the authorized funding amount,
6 whenever the current estimated cost of the construction
7 project exceeds by more than 10 percent the higher of—

8 (1) the amount authorized for the project, if the
9 entire project has been funded by the Congress; or

10 (2) the amount of the total estimated cost for
11 the project as shown in the most recent budget jus-
12 tification data submitted to Congress.

13 (b) NOTICE.—An action described in subsection (a)
14 may be taken if—

15 (1) the Secretary has submitted to the appro-
16 priate congressional committees a report on the pro-
17 posed actions and the circumstances making such
18 actions necessary; and

19 (2) a period of 30 days has elapsed after the
20 date on which the report is received by the commit-
21 tees.

22 (c) EXCLUSION.—In the computation of the 30-day
23 period described in subsection (b)(2), there shall be ex-
24 cluded any day on which either House of Congress is not

1 in session because of an adjournment of more than 3 days
2 to a day certain.

3 (d) EXCEPTION.—Subsections (a) and (b) shall not
4 apply to any construction project that has a current esti-
5 mated cost of less than \$2,000,000.

6 **SEC. 614. AUTHORITY FOR CONCEPTUAL AND CONSTRUC-**
7 **TION DESIGN.**

8 (a) REQUIREMENT FOR CONCEPTUAL DESIGN.—(1)
9 Subject to paragraph (2) and except as provided in para-
10 graph (3), before submitting to Congress a request for
11 funds for a construction project that is in support of a
12 civilian environmental research and development, scientific
13 or energy research, development, or demonstration, or
14 commercial application of energy technology program,
15 project, or activity of the Department, the Secretary shall
16 complete a conceptual design for that project.

17 (2) If the estimated cost of completing a conceptual
18 design for a construction project exceeds \$750,000, the
19 Secretary shall submit to Congress a request for funds for
20 the conceptual design before submitting a request for
21 funds for the construction project.

22 (3) The requirement in paragraph (1) does not apply
23 to a request for funds for a construction project, the total
24 estimated cost of which is less than \$2,000,000.

1 (b) AUTHORITY FOR CONSTRUCTION DESIGN.—(1)
2 The Secretary may carry out construction design (includ-
3 ing architectural and engineering services) in connection
4 with any proposed construction project that is in support
5 of a civilian environmental research and development, sci-
6 entific or energy research, development, and demonstra-
7 tion, or commercial application of energy technology pro-
8 gram, project, or activity of the Department if the total
9 estimated cost for such design does not exceed \$250,000.

10 (2) If the total estimated cost for construction design
11 in connection with any construction project described in
12 paragraph (1) exceeds \$250,000, funds for such design
13 must be specifically authorized by law.

14 **SEC. 615. NATIONAL ENERGY POLICY DEVELOPMENT**
15 **GROUP MANDATED REPORTS.**

16 (a) THE SECRETARY'S REVIEW OF ENERGY EFFI-
17 CIENCY RENEWABLE ENERGY, AND ALTERNATIVE EN-
18 ERGY RESEARCH AND DEVELOPMENT.—Upon completion
19 of the Secretary's review of current funding and historic
20 performance of the Department's energy efficiency, renew-
21 able energy, and alternative energy research and develop-
22 ment programs in response to the recommendations of the
23 May 16, 2001, Report of the National Energy Policy De-
24 velopment Group, the Secretary shall transmit a report

1 containing the results of such review to the appropriate
2 congressional committees.

3 (b) REVIEW AND RECOMMENDATIONS ON USING THE
4 NATION'S ENERGY RESOURCES MORE EFFICIENTLY.—
5 Upon completion of the Office of Science and Technology
6 Policy and the President's Council of Advisors on Science
7 and Technology reviewing and making recommendations
8 on using the Nation's energy resources more efficiently,
9 in response to the recommendation of the May 16, 2001,
10 Report of the National Energy Policy Development Group,
11 the Director of the Office of Science and Technology Pol-
12 icy shall transmit a report containing the results of such
13 review and recommendations to the appropriate congres-
14 sional committees.

15 **SEC. 616. INDEPENDENT REVIEWS AND ASSESSMENTS.**

16 (a) PERIODIC REVIEWS AND ASSESSMENTS.—The
17 Secretary shall enter into appropriate arrangements with
18 the National Academies of Sciences and Engineering to
19 ensure that there be periodic reviews and assessments of
20 the programs, projects, and activities authorized by this
21 Act, as well as the goals for such programs, projects, and
22 activities as established under section 4. Such reviews and
23 assessments shall be conducted at least biennially, and the
24 Secretary shall transmit to the appropriate congressional

1 committees reports containing the results of such reviews
2 and assessments.

3 (b) INDEPENDENT ASSESSMENT OF ACCOMPLISH-
4 MENTS.—Not later than 180 days after the date of the
5 enactment of this Act, the Administrator and the Sec-
6 retary shall jointly prepare and transmit to the appro-
7 priate congressional committees a report on the Environ-
8 mental Protection Agency Office of Air and Radiation pro-
9 grams authorized under this Act, all programs of the Of-
10 fice of Energy Efficiency and Renewable Energy, and any
11 programs of other appropriate offices of the Department
12 that may duplicate the programs of those 2 offices, that
13 delineates the similarities and differences between the pro-
14 grams. Such report shall also provide for an independent,
15 peer-reviewed assessment of the performance goals of
16 these programs, the progress being made in meeting those
17 goals, and the accomplishments of these programs.

○