

H.R. 364, AS REPORTED

1 SECTION 1. FINDINGS.

2 The Congress finds the following:

3 (1) The United States faces a range of energy
4 challenges that affect our economy, security, and en-
5 vironment. Fundamentally, these challenges involve
6 science and technology.

7 (2) The Department of Energy already has
8 some of the mechanisms necessary to promote long-
9 term research, but it lacks the mechanisms for
10 quickly transforming the results into technology that
11 meets national needs.

12 (3) A recent report of the Secretary of Energy's
13 Advisory Board's Task Force on the Future of
14 Science Programs at the Department of Energy con-
15 cluded that "America can meet its energy needs only
16 if we make a strong and sustained investment in re-
17 search in physical science, engineering, and applica-
18 ble life sciences and if we translate advancing sci-
19 entific knowledge into practice".

20 (4) The Department of Defense, since 1958,
21 has used its Defense Advanced Projects Research
22 Agency (DARPA) for aggressively addressing real-

1 time defense problems through targeted programs of
2 research and technology development that have im-
3 proved our national defense through trans-
4 formational technologies.

5 (5) The National Academy of Sciences' report
6 entitled "Rising Above the Gathering Storm: Ener-
7 gizing and Employing America for a Brighter Eco-
8 nomic Future" recommends creating a new agency
9 within the Department of Energy to sponsor "cre-
10 ative, out-of-the-box, transformational, generic en-
11 ergy research in those areas where industry by itself
12 cannot or will not undertake such sponsorship,
13 where risks and pay-offs are high". Such an organi-
14 zation would be able to accelerate the process by
15 which research is transformed to address energy-re-
16 lated economic, environmental, and security issues to
17 decrease dependence on foreign energy through tar-
18 geted research and technology development.

19 **SEC. 2. ADVANCED RESEARCH PROJECTS AGENCY-ENERGY.**

20 (a) ESTABLISHMENT.—There is established the Ad-
21 vanced Research Projects Agency-Energy (in this Act re-
22 ferred to as "ARPA-E") within the Department of En-
23 ergy.

24 (b) GOALS.—The goals of ARPA-E are to enhance
25 the Nation's economic and energy security through reduc-

1 tions in imports of energy from foreign sources, to reduce
2 emissions of greenhouse gases from the energy and indus-
3 trial sectors, to improve energy efficiency of all economic
4 sectors, and to ensure that the United States maintains
5 a technological lead in developing and deploying energy
6 technologies. ARPA-E will achieve this by—

7 (1) identifying and promoting revolutionary ad-
8 vances in fundamental sciences with potential energy
9 and environmental applications;

10 (2) translating scientific discoveries and cut-
11 ting-edge engineering innovations into technologies
12 that promote energy security and sound environ-
13 mental stewardship; and

14 (3) accelerating the market adoption of trans-
15 formational technological advances in areas such as
16 alternative fuels and transportation technology, en-
17 ergy efficiency, electricity production and infrastruc-
18 ture, and carbon capture and sequestration.

19 (c) DIRECTOR.—ARPA-E shall be headed by a Direc-
20 tor who shall be appointed by the Secretary of Energy.
21 The Director shall report to the Secretary. No other pro-
22 grams within the Department of Energy shall report to
23 the Director of ARPA-E.

24 (d) RESPONSIBILITIES.—The Director shall admin-
25 ister the Fund established under section 3 to award com-

1 petitive grants, cooperative agreements, or contracts to in-
2 stitutions of higher education, companies, research foun-
3 dations, trade and industry research collaborations, or
4 consortia of such entities which may include federally
5 funded research and development centers, to achieve the
6 goals stated in subsection (b) through targeted accelera-
7 tion of—

8 (1) novel early-stage energy research with pos-
9 sible technology applications;

10 (2) development of techniques, processes, and
11 technologies, and related testing and evaluation;

12 (3) development of manufacturing processes for
13 technologies; and

14 (4) demonstration and coordination with non-
15 governmental entities for commercial applications of
16 technologies and research applications.

17 (e) PERSONNEL.—

18 (1) PROGRAM MANAGERS.—The Director shall
19 designate employees to serve as program managers
20 for each of the programs established pursuant to the
21 responsibilities established for ARPA-E under sub-
22 section (d). Program managers shall be responsible
23 for—

24 (A) establishing research and development
25 goals for the program, including through the

1 convening of workshops and conferring with
2 outside experts, as well as publicizing its goals
3 to the public and private sectors;

4 (B) soliciting applications for specific areas
5 of particular promise, especially those which the
6 private sector alone cannot or will not provide
7 funding;

8 (C) building research collaborations for
9 carrying out the program;

10 (D) selecting on the basis of merit, with
11 advice under section 4 as appropriate, each of
12 the projects to be supported under the program
13 following consideration of—

14 (i) the novelty and scientific and tech-
15 nical merit of the proposed projects;

16 (ii) the demonstrated capabilities of
17 the applicants to successfully carry out the
18 proposed research project;

19 (iii) the applicant's consideration of
20 future commercial applications of the
21 project, including the feasibility of
22 partnering with a commercial entity or en-
23 tities to help increase the chances of mar-
24 ket penetration; and

1 (iv) such other criteria as are estab-
2 lished by the Director; and

3 (E) monitoring the progress of projects
4 supported under the program, and prescribing
5 program restructure or termination of research
6 partnerships or whole projects that do not show
7 promise.

8 (2) HIRING AND MANAGEMENT.—In hiring per-
9 sonnel for ARPA-E, the Secretary shall have the hir-
10 ing and management authorities described in section
11 1101 of the Strom Thurmond National Defense Au-
12 thorization Act for Fiscal Year 1999 (5 U.S.C. 3104
13 note). For purposes of subsection (c)(1) of that sec-
14 tion, the term of appointments for employees may
15 not exceed 3 years before the granting of any exten-
16 sion. In hiring initial staff the Secretary shall give
17 preference to applicants with experience in the De-
18 fense Advanced Research Projects Agency, aca-
19 demia, or private sector technology development.
20 The Secretary or Director may contract with private
21 recruiting firms in hiring qualified technical staff.

22 (3) ADDITIONAL HIRING.—The Director may
23 hire additional technical, financial, managerial, or
24 other staff as needed to carry out the activities of
25 the program.

1 (f) COORDINATION AND NONDUPLICATION.—To the
2 extent practicable, the Director shall ensure that the ac-
3 tivities of ARPA-E are coordinated with, and do not dupli-
4 cate the efforts of, existing programs and laboratories
5 within the Department of Energy and other relevant re-
6 search agencies. Where appropriate, the Director may co-
7 ordinate technology transfer efforts with the Technology
8 Transfer Coordinator established in section 1001 of the
9 Energy Policy Act of 2005 (42 U.S.C. 16391).

10 (g) FEDERAL USE OF TECHNOLOGIES.—The Sec-
11 retary shall seek opportunities to utilize Federal agencies’
12 purchasing and procurement programs to demonstrate
13 technologies resulting from activities funded through
14 ARPA-E and to facilitate their entry into private markets.

15 **SEC. 3. FUND.**

16 (a) ESTABLISHMENT.—There is established in the
17 Treasury the Energy Transformation Acceleration Fund
18 (in this Act referred to as the “Fund”), which shall be
19 administered by the Director of ARPA-E for the purposes
20 of carrying out this Act.

21 (b) AUTHORIZATION OF APPROPRIATIONS.—There
22 are authorized to be appropriated to the Director of
23 ARPA-E for deposit in the Fund \$300,000,000 for fiscal
24 year 2008, \$1,000,000,000 for fiscal year 2009,
25 \$1,100,000,000 for fiscal year 2010, \$1,200,000,000 for

1 fiscal year 2011, and \$1,300,000,000 for fiscal year 2012,
2 to remain available until expended.

3 (c) LIMITATION.—No amounts may be appropriated
4 for the first year of funding for ARPA-E unless the
5 amount appropriated for the activities of the Office of
6 Science of the Department of Energy for that fiscal year
7 exceed the amount appropriated for that Office for fiscal
8 year 2007, as adjusted for inflation according to the Con-
9 sumer Price Index.

10 (d) ALLOCATION.—Of the amounts appropriated for
11 a fiscal year under subsection (b)—

12 (1) not more than 50 percent shall be for activi-
13 ties under section 2(d)(4);

14 (2) not more than 8 percent shall be made
15 available to Federally Funded Research and Devel-
16 opment Centers;

17 (3) not more than 10 percent may be used for
18 administrative expenses;

19 (4) at least 2.5 percent shall be designated for
20 technology transfer and outreach activities; and

21 (5) during the first 5 years of operation of
22 ARPA-E, no funds may be used for construction of
23 new buildings or facilities.

1 **SEC. 4. ADVICE.**

2 (a) **ADVISORY COMMITTEES.**—The Director may seek
3 advice on any aspect of ARPA-E from—

4 (1) existing Department of Energy advisory
5 committees; and

6 (2) new advisory committees organized to sup-
7 port the programs of ARPA-E and to provide advice
8 and assistance on—

9 (A) specific program tasks; or

10 (B) overall direction of ARPA-E.

11 (b) **APPLICABILITY.**—Section 14 of the Federal Advi-
12 sory Committee Act shall not apply to advisory committees
13 organized under subsection (a)(2).

14 (c) **ADDITIONAL SOURCES OF ADVICE.**—The Direc-
15 tor may seek advice and review from the National Acad-
16 emy of Sciences, the National Academy for Engineering,
17 and any other professional or scientific organization with
18 expertise in specific processes or technologies under devel-
19 opment by ARPA-E.

20 **SEC. 5. ARPA-E EVALUATION.**

21 After ARPA-E has been in operation for 54 months,
22 the President's Committee on Science and Technology
23 shall begin an evaluation (to be completed within 12
24 months) of how well ARPA-E is achieving its goals and
25 mission. The evaluation shall include the recommendation
26 of such Committee on whether ARPA-E should be contin-

1 ued or terminated, as well as lessons-learned from its oper-
2 ation. The evaluation shall be made available to Congress
3 and to the public upon completion.

4 **SEC. 6. SAVINGS CLAUSE.**

5 The authorities granted by this Act are in addition
6 to existing authorities granted to the Secretary of Energy,
7 and not intended to supersede or modify any existing au-
8 thorities.