

112TH CONGRESS
1ST SESSION

H. R. 301

To ensure the energy independence of the United States by promoting research, development, demonstration, and commercial application of technologies through a system of grants and prizes on the scale of the original Manhattan Project.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 18, 2011

Mr. FORBES introduced the following bill; which was referred to the
Committee on Science, Space, and Technology

A BILL

To ensure the energy independence of the United States by promoting research, development, demonstration, and commercial application of technologies through a system of grants and prizes on the scale of the original Manhattan Project.

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

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “New Manhattan
5 Project for Energy Independence”.

6 **SEC. 2. DEFINITIONS.**

7 In this Act—

1 (1) COMMISSION.—The term “Commission”
2 means the Commission established under section 7.

3 (2) RESEARCH.—The term “research” includes
4 research on the technologies, materials, and manu-
5 facturing processes required to achieve the goals de-
6 scribed in section 3.

7 **SEC. 3. GOALS.**

8 (a) IN GENERAL.—The purpose of this Act is to en-
9 able the achievement of each of the following goals:

10 (1) VEHICLE FUEL EFFICIENCIES AND ALTER-
11 NATIVE FUEL SOURCES.—Development and manu-
12 facturing of a plug-in hybrid vehicle, alternative fuel
13 vehicle, electric vehicle, hydrogen fuel cell vehicle, or
14 other alternative technology vehicle—

15 (A) that is not more than 10 percent more
16 expensive than a comparable model vehicle of
17 the same model year;

18 (B) with—

19 (i) equal acceleration, horsepower, and
20 top speed performance; and

21 (ii) not more than 20 percent reduc-
22 tion in cargo space,

23 as compared to a comparable model vehicle of
24 the same model year;

1 (C) that meets or exceeds Federal safety
2 standards;

3 (D) that can travel at least 750 miles be-
4 tween refueling; and

5 (E) in the case of a gasoline-powered vehi-
6 cle, that can travel at least 70 miles per gallon
7 of gasoline.

8 (2) GREEN BUILDINGS.—Develop and build an
9 energy efficient residential or commercial building
10 that—

11 (A) uses no more than 50 percent of the
12 energy of the average new building of similar
13 size and type;

14 (B) costs no more than 15 percent more to
15 construct than the cost of a building of similar
16 size and type; and

17 (C) can be effectively reproduced in a vari-
18 ety of climate environments found in the United
19 States.

20 (3) SOLAR POWER.—Construction of a large
21 scale solar thermal power plant or solar photovoltaic
22 power plant capable of generating 300 megawatts or
23 more at a cost of 10 cents or less per kilowatt-hour
24 when all capital and operating expenses are cal-
25 culated into the cost.

1 (4) BIOFUELS.—Development and production
2 of a biofuel that, when mass produced, does not ex-
3 ceed 105 percent of the cost for the energy equiva-
4 lent of unleaded gasoline when all capital and oper-
5 ating expenses are calculated into the cost of the
6 biofuel.

7 (5) CARBON SEQUESTRATION.—Development
8 and implementation of a carbon capture and storage
9 system for a large scale coal-burning power plant
10 that does not increase operating costs more than 15
11 percent compared to a baseline design without car-
12 bon capture and storage while providing an esti-
13 mated chance of carbon dioxide escape no greater
14 than 1 percent over 5,000 years.

15 (6) NUCLEAR WASTE.—Development of both—

16 (A) a validated process for remediation of
17 the radioactive waste form so it is no longer
18 harmful to the health or welfare of the environ-
19 ment or individuals for a period to be deter-
20 mined by the Commission, which shall be not
21 less than 5,000 years; and

22 (B) a model that accounts for all the ef-
23 fects of nuclear waste in that process.

24 (7) NUCLEAR FUSION.—Development of a sus-
25 tainable nuclear fusion reaction capable of providing

1 a large-scale (greater than 300 megawatts), sustain-
2 able source of electricity for residential, commercial,
3 or government entities.

4 (b) AMENDMENT OF GOALS.—The Secretary of En-
5 ergy may amend a goal described in subsection (a) pursu-
6 ant to a recommendation from the Commission under sec-
7 tion 7(b)(5), or on his own initiative, if such amendment
8 serves the purpose of achieving the goal of United States
9 energy independence through the development of tech-
10 nologies that lead to the widespread adoption of improve-
11 ments that increase energy supply or energy efficiency.

12 **SEC. 4. SUMMIT.**

13 (a) IN GENERAL.—Not later than 60 days after the
14 date of enactment of this Act, the President shall convene
15 a summit that includes—

16 (1) the principal advisors and directors of all
17 programs in the Federal Government related to the
18 achievement of the goals described in section 3;

19 (2) the members of the Commission; and

20 (3) leading researchers at the Federal labora-
21 tories and representatives of private sector partners
22 engaged in the production and manufacturing of
23 technologies necessary to achieve the goals described
24 in section 3.

1 (b) PURPOSE.—The summit shall be for the purpose
2 of reviewing the progress and promise for each of these
3 technologies, the interrelationship of these technologies to
4 each other, and additional funding resources needed to ac-
5 celerate the progress of these programs toward achieving
6 the goals described in section 3.

7 **SEC. 5. GRANT PROGRAM.**

8 (a) IN GENERAL.—The Secretary of Energy, in con-
9 sultation with the Secretary of Defense, the Secretary of
10 Transportation, the Administrator of the Environmental
11 Protection Agency, and other Federal agencies as appro-
12 priate, shall carry out a program consisting of a collabo-
13 rative effort with industry, government, and academia to
14 support research, development, demonstration, and com-
15 mercial application activities related to achieving the goals
16 described in section 3.

17 (b) GRANTS.—Such program shall consist of grants
18 to researchers, large and small businesses, National Lab-
19 oratories, institutions of higher education, or any other
20 qualified applicant, including veterans.

21 (c) LIMITATION ON AMOUNT.—No grant shall be
22 made under this section in an amount that exceeds 5 per-
23 cent of the amount authorized under section 8(1) for
24 prizes for the achievement of the same goal.

1 (d) COST SHARING.—The Federal share of the costs
2 of a project for which a grant is made under this section
3 shall not exceed 15 percent.

4 **SEC. 6. PRIZE PROGRAM.**

5 (a) PRIZE AUTHORITY.—

6 (1) IN GENERAL.—The Secretary of Energy
7 shall carry out a program to competitively award
8 cash prizes in conformity with this section to ad-
9 vance the research, development, demonstration, and
10 commercial application necessary to achieve the
11 goals described in section 3.

12 (2) ADVERTISING AND SOLICITATION OF COM-
13 PETITORS.—

14 (A) ADVERTISING.—The Secretary shall
15 widely advertise prize competitions under this
16 section to encourage broad participation by re-
17 searchers, large and small businesses, institu-
18 tions of higher education, and any other quali-
19 fied applicants, including veterans.

20 (B) ANNOUNCEMENT THROUGH FEDERAL
21 REGISTER NOTICE.—The Secretary shall an-
22 nounce each prize competition under this sec-
23 tion by publishing a notice in the Federal Reg-
24 ister. This notice shall include essential ele-
25 ments of the competition such as the subject of

1 the competition, the duration of the competi-
2 tion, the eligibility requirements for participa-
3 tion in the competition, the process for partici-
4 pants to register for the competition, the
5 amount of the prize, and the criteria for award-
6 ing the prize, which shall include, at a min-
7 imum, the achievement of one of the goals de-
8 scribed in section 3.

9 (3) ANNOUNCEMENT OF PRIZES.—The Sec-
10 retary may not issue a notice required by paragraph
11 (2)(B) until all the funds needed to pay out the an-
12 nounced amount of the prize have been appro-
13 priated.

14 (b) PRIZE CATEGORIES.—

15 (1) CATEGORIES.—The Secretary of Energy
16 shall establish a single prize under this section for
17 each of the goals described in paragraphs (1)
18 through (7) of section 3.

19 (2) CRITERIA.—In establishing the criteria re-
20 quired by this section, the Secretary—

21 (A) shall consult with other Federal agen-
22 cies, including the National Science Founda-
23 tion; and

24 (B) may consult with other experts such as
25 private organizations, including professional so-

1 cieties, industry associations, and the National
2 Academy of Sciences and the National Academy
3 of Engineering.

4 (c) ELIGIBILITY.—To be eligible to win a prize under
5 this section, an individual or entity—

6 (1) shall have complied with all the require-
7 ments in accordance with the Federal Register no-
8 tice required under subsection (a)(2)(B);

9 (2) in the case of a private entity, shall be in-
10 corporated in and maintain a primary place of busi-
11 ness in the United States, and in the case of an in-
12 dividual, whether participating singly or in a group,
13 shall be a citizen of, or an alien lawfully admitted
14 for permanent residence in, the United States; and

15 (3) shall not be a Federal entity, a Federal em-
16 ployee acting within the scope of his employment, or
17 an employee of a national laboratory acting within
18 the scope of his employment.

19 (d) AWARD SELECTION.—

20 (1) IN GENERAL.—The Secretary of Energy
21 shall award prizes under this section on the basis of
22 the criteria published in the notice required under
23 subsection (a)(2)(B), after receiving the rec-
24 ommendations of the Commission under section
25 7(b)(3).

1 (2) CONGRESSIONAL NOTIFICATION.—If the
2 Secretary awards a prize under paragraph (1) in a
3 manner that does not conform to the recommenda-
4 tions of the Commission, the Secretary shall trans-
5 mit a report to the Congress explaining the reasons
6 for such action.

7 (e) INTELLECTUAL PROPERTY.—The Federal Gov-
8 ernment shall not, by virtue of offering or awarding a
9 prize under this section, be entitled to any intellectual
10 property rights derived as a consequence of, or direct rela-
11 tion to, the participation by a registered participant in a
12 competition authorized by this section. This subsection
13 shall not be construed to prevent the Federal Government
14 from negotiating a license for the use of intellectual prop-
15 erty developed for a prize competition under this section.

16 (f) LIABILITY.—

17 (1) WAIVER OF LIABILITY.—The Secretary of
18 Energy may require registered participants to waive
19 claims against the Federal Government (except
20 claims for willful misconduct) for any injury, death,
21 damage, or loss of property, revenue, or profits aris-
22 ing from the registered participants' participation in
23 a competition under this section. The Secretary shall
24 give notice of any waiver required under this para-
25 graph in the notice required by subsection (a)(2)(B).

1 (2) LIABILITY INSURANCE.—

2 (A) REQUIREMENTS.—Registered partici-
3 pants in a prize competition under this section
4 shall be required to obtain liability insurance or
5 demonstrate financial responsibility, in amounts
6 determined by the Secretary, for claims by—

7 (i) a third party for death, bodily in-
8 jury, or property damage or loss resulting
9 from an activity carried out in connection
10 with participation in a competition under
11 this section; and

12 (ii) the Federal Government for dam-
13 age or loss to Government property result-
14 ing from such an activity.

15 (B) FEDERAL GOVERNMENT INSURED.—

16 The Federal Government shall be named as an
17 additional insured under a registered partici-
18 pant's insurance policy required under subpara-
19 graph (A) with respect to claims described in
20 clause (i) of that subparagraph, and registered
21 participants shall be required to agree to in-
22 demnify the Federal Government against third-
23 party claims for damages arising from or re-
24 lated to competition activities under this sec-
25 tion.

1 (g) NONSUBSTITUTION.—The programs created
2 under this section shall not be considered a substitute for
3 Federal research and development programs.

4 **SEC. 7. COMMISSION.**

5 (a) ESTABLISHMENT.—There shall be established the
6 New Manhattan Project Commission on Energy Independ-
7 ence.

8 (b) FUNCTIONS.—The Commission shall—

9 (1) not later than 1 year after the date of en-
10 actment of this Act, submit to Congress and the
11 President a report containing—

12 (A) recommendations on steps that must
13 be taken in order for the United States to
14 achieve 50 percent energy independence within
15 10 years and 100 percent energy independence
16 within 20 years; and

17 (B) an assessment of the impact of foreign
18 energy dependence on United States national
19 security;

20 (2) advise the Secretary of Energy on the de-
21 sign and operation of the grant program established
22 under section 5;

23 (3) make recommendations to the Secretary of
24 Energy on the design and operation, including selec-

1 tion criteria, of the prize program carried out under
2 section 6;

3 (4) make recommendations to the Secretary of
4 Energy selecting participants who have achieved a
5 goal for which a prize will be awarded under section
6 6; and

7 (5) submit recommendations to Congress for
8 any amendments to make the goals described in sec-
9 tion 3 more stringent, as appropriate because of
10 changing circumstances, if such amendments serve
11 the purpose of achieving the goal of United States
12 energy independence through the development of
13 technologies that lead to the widespread adoption of
14 improvements that increase energy supply or energy
15 efficiency.

16 (c) MEMBERSHIP.—The Commission shall be com-
17 posed of 13 members as follows:

18 (1) The Under Secretary for Science of the De-
19 partment of Energy.

20 (2) The Administrator of the Research and In-
21 novative Technology Administration.

22 (3) The Director of the National Science Foun-
23 dation.

24 (4) The Chairman of the Federal Laboratory
25 Consortium for Technology Transfer.

1 (5) The President of the National Academy of
2 Sciences.

3 (6) Two members appointed by the Speaker of
4 the House of Representatives.

5 (7) Two members appointed by the minority
6 leader of the House of Representatives.

7 (8) Two members appointed by the majority
8 leader of the Senate.

9 (9) Two members appointed by the minority
10 leader of the Senate.

11 (d) TERMS OF MEMBERSHIP.—Each member of the
12 Commission appointed under subsection (c) (6) through
13 (9) shall be appointed for a term of two years, except that
14 of the members first appointed, one under each of those
15 paragraphs shall be appointed for a term of one year. A
16 member of the Commission may serve after the expiration
17 of the member's term until a successor has taken office.

18 (e) VACANCIES.—A vacancy in the Commission shall
19 not affect its powers but, in the case of a member ap-
20 pointed under subsection (c) (6) through (9), shall be
21 filled in the same manner as the original appointment was
22 made. Any member appointed to fill a vacancy for an un-
23 expired term shall be appointed for the remainder of such
24 term.

1 (f) QUORUM.—Seven members of the Commission
2 shall constitute a quorum.

3 (g) MEETINGS.—The Commission shall meet at the
4 call of the Chairman or a majority of its members.

5 (h) COMPENSATION.—(1) Each member of the Com-
6 mission shall serve without compensation.

7 (2) While away from their homes or regular places
8 of business in the performance of duties for the Commis-
9 sion, members of the Commission shall be allowed travel
10 expenses, including per diem in lieu of subsistence, at
11 rates authorized for employees of agencies under sections
12 5702 and 5703 of title 5, United States Code.

13 (i) STAFF.—Subject to rules prescribed by the Com-
14 mission, the Commission may appoint personnel as it con-
15 siders appropriate.

16 (j) APPLICABILITY OF CERTAIN CIVIL SERVICE
17 LAWS.—The staff of the Commission shall be appointed
18 subject to the provisions of title 5, United States Code,
19 governing appointments in the competitive service, and
20 shall be paid in accordance with the provisions of chapter
21 51 and subchapter III of chapter 53 of that title relating
22 to classification and General Schedule pay rates.

23 (k) EXPERTS AND CONSULTANTS.—The Commission
24 may procure temporary and intermittent services under
25 section 3109(b) of title 5, United States Code.

1 (l) HEARINGS AND SESSIONS.—The Commission
2 may, for the purpose of carrying out this Act, hold hear-
3 ings, sit and act at times and places, take testimony, and
4 receive evidence as the Commission considers appropriate.

5 (m) POWERS OF MEMBERS AND AGENTS.—Any
6 member or agent of the Commission may, if authorized
7 by the Commission, take any action which the Commission
8 is authorized to take by this section.

9 (n) OBTAINING OFFICIAL DATA.—The Commission
10 may secure directly from any department or agency of the
11 United States information necessary to enable it to carry
12 out this Act. Upon request of the Commission, the head
13 of that department or agency shall furnish that informa-
14 tion to the Commission.

15 (o) SUBPOENA POWER.—

16 (1) IN GENERAL.—The Commission may issue
17 subpoenas requiring the attendance and testimony of
18 witnesses and the production of any evidence relat-
19 ing to any matter under investigation by the Com-
20 mission. The attendance of witnesses and the pro-
21 duction of evidence may be required from any place
22 within the United States at any designated place of
23 hearing within the United States.

24 (2) FAILURE TO OBEY A SUBPOENA.—If a per-
25 son refuses to obey a subpoena issued under para-

1 graph (1), the Commission may apply to a United
2 States district court for an order requiring that per-
3 son to appear before the Commission to give testi-
4 mony, produce evidence, or both, relating to the
5 matter under investigation. The application may be
6 made within the judicial district where the hearing
7 is conducted or where that person is found, resides,
8 or transacts business. Any failure to obey the order
9 of the court may be punished by the court as civil
10 contempt.

11 (3) SERVICE OF SUBPOENAS.—The subpoenas
12 of the Commission shall be served in the manner
13 provided for subpoenas issued by a United States
14 district court under the Federal Rules of Civil Pro-
15 cedure for the United States district courts.

16 (4) SERVICE OF PROCESS.—All process of any
17 court to which application is made under paragraph
18 (2) may be served in the judicial district in which
19 the person required to be served resides or may be
20 found.

21 (p) FEDERAL ADVISORY COMMITTEE ACT.—Section
22 14 of the Federal Advisory Committee Act (5 U.S.C.
23 App.) shall not apply to the Commission.

1 **SEC. 8. AUTHORIZATION OF APPROPRIATIONS.**

2 There are authorized to be appropriated to the Sec-
3 retary of Energy—

4 (1) for the period encompassing fiscal years
5 2012 through 2021—

6 (A) \$500,000,000 for awarding the prize
7 under section 6 for meeting the goal described
8 in section 3(1);

9 (B) \$250,000,000 for awarding the prize
10 under section 6 for meeting the goal described
11 in section 3(2);

12 (C) \$250,000,000 for awarding the prize
13 under section 6 for meeting the goal described
14 in section 3(3);

15 (D) \$1,000,000,000 for awarding the prize
16 under section 6 for meeting the goal described
17 in section 3(4);

18 (E) \$1,000,000,000 for awarding the prize
19 under section 6 for meeting the goal described
20 in section 3(5);

21 (F) \$1,000,000,000 for awarding the prize
22 under section 6 for meeting the goal described
23 in section 3(6);

24 (G) \$10,000,000,000 for awarding the
25 prize under section 6 for meeting the goal de-
26 scribed in section 3(7); and

1 (H) \$10,000,000,000 for carrying out the
2 grant program under section 5; and
3 (2) such sums as may be necessary for carrying
4 out this Act for subsequent fiscal years.

○