

114TH CONGRESS  
2D SESSION

# H. R. 4423

To provide for a program of wind energy research, development, and demonstration, and for other purposes.

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IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 1, 2016

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

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## A BILL

To provide for a program of wind energy research, development, and demonstration, 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,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Wind Energy Research  
5 and Development Act of 2016”.

6 **SEC. 2. WIND ENERGY RESEARCH AND DEVELOPMENT PRO-**  
7 **GRAM.**

8 (a) IN GENERAL.—The Secretary of Energy shall  
9 carry out a program of research and development to—

1           (1) improve the energy efficiency, reliability,  
2           and capacity of wind energy generation;

3           (2) optimize the design and adaptability of wind  
4           energy systems to the broadest practical range of at-  
5           mospheric conditions; and

6           (3) reduce the cost of permitting, construction,  
7           operation, and maintenance of wind energy systems.

8           (b) PROGRAM.—The program under this section shall  
9           focus on research, development, and testing of—

10           (1) wind power plant performance and oper-  
11           ations including—

12                   (A) wind flows and turbine-to-turbine  
13                   interactions;

14                   (B) energy conversion potential;

15                   (C) turbine control paradigms; and

16                   (D) turbine component and integrated  
17                   plant systems;

18           (2) new materials and designs to make innova-  
19           tive wind turbine rotor and drivetrain concepts in-  
20           cluding—

21                   (A) higher tip speed rotor designs;

22                   (B) low noise rotor designs;

23                   (C) more cost-effective rotor designs that  
24           are able to be integrated into current turbines;

- 1           (D) advanced drivetrain and generator  
2 concepts; and
- 3           (E) modular construction and onsite as-  
4 ssembly techniques;
- 5       (3) offshore wind-specific projects including—
- 6           (A) fixed and floating substructure con-  
7 cepts;
- 8           (B) projects to assess and mitigate the im-  
9 pacts of hurricane wind flow and other United  
10 States-specific conditions;
- 11          (C) innovative operations and maintenance  
12 strategies;
- 13          (D) analysis of offshore meteorological and  
14 oceanographic data collection; and
- 15          (E) offshore infrastructure monitoring;
- 16       (4) wind power forecasting and atmospheric  
17 measurement systems;
- 18       (5) the distributed wind energy sector;
- 19       (6) transformational technologies for harnessing  
20 wind energy, including airborne wind energy con-  
21 cepts; and
- 22       (7) other research areas as determined by the  
23 Secretary.

1 **SEC. 3. WIND ENERGY TECHNOLOGY VALIDATION AND**  
2 **MARKET TRANSFORMATION PROGRAM.**

3 (a) IN GENERAL.—The Secretary of Energy shall  
4 conduct a wind energy technology validation and market  
5 transformation program. In carrying out this section, the  
6 Secretary shall ensure that—

7 (1) the program demonstrates and validates  
8 new wind energy technologies with the potential to  
9 be cost-competitive for land-based, offshore, and dis-  
10 tributed applications; and

11 (2) demonstration projects carried out under  
12 this program are—

13 (A) conducted in collaboration with indus-  
14 try and, as appropriate, with academic institu-  
15 tions; and

16 (B) of sufficient size and geographic diver-  
17 sity to measure wind energy system perform-  
18 ance under the full productive range of wind  
19 conditions in the United States.

20 (b) COST-SHARING.—The Secretary shall carry out  
21 the program under this section in compliance with section  
22 988(a) through (d) and section 989 of the Energy Policy  
23 Act of 2005 (42 U.S.C. 16352(a) through (d) and 16353).

24 **SEC. 4. WIND ENERGY EXPANSION PROGRAM.**

25 (a) IN GENERAL.—The Secretary of Energy shall  
26 conduct a program of research, development, demonstra-

1 tion, and commercial application activities to reduce bar-  
2 riers to the widespread adoption of wind power. Barriers  
3 addressed by this program may include—

4 (1) grid integration challenges; and

5 (2) permitting issues associated with the poten-  
6 tial impacts of wind power systems on wildlife, radar  
7 systems, and airspace.

8 (b) WILDLIFE IMPACT MITIGATION.—The program  
9 described in this section shall support the development of  
10 new wildlife impact mitigation technologies to reduce the  
11 potential impacts of wind energy facilities on—

12 (1) bald and golden eagles;

13 (2) bat species; and

14 (3) other species which may impede the wide-  
15 spread deployment of wind power.

16 (c) EDUCATION AND OUTREACH.—The program de-  
17 scribed in this section shall support education and out-  
18 reach activities to disseminate information and promote  
19 public understanding of wind technologies, including the  
20 Collegiate Wind Competition.

21 **SEC. 5. WIND ENERGY INCUBATOR FUNDING.**

22 The Secretary of Energy shall maintain a wind en-  
23 ergy incubator program to support innovative technologies  
24 that are not represented in a significant way in the De-

1 partment of Energy's current portfolio of wind energy re-  
2 search activities or in current technology roadmaps.

3 **SEC. 6. COORDINATION.**

4 To the maximum extent practicable the Secretary of  
5 Energy shall coordinate activities under this Act with  
6 other relevant programs of the Department of Energy and  
7 other Federal research programs.

8 **SEC. 7. AUTHORIZATION OF APPROPRIATIONS.**

9 There are authorized to be appropriated to the Sec-  
10 retary of Energy to carry out this Act \$200,000,000 for  
11 each of the fiscal years 2017 through 2021.

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