

112TH CONGRESS  
1ST SESSION

# H. R. 2782

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

AUGUST 1, 2011

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 2011”.

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 turbines;

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 construction, generation,  
7           and maintenance of wind energy systems.

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

10           (1) new materials and designs to make larger,  
11           lighter, less expensive, and more reliable and longer  
12           lifecycle rotor blades;

13           (2) technologies to improve gearbox perform-  
14           ance, reliability, and lifecycle;

15           (3) automation, materials, and assembly of  
16           large-scale components to reduce manufacturing  
17           costs;

18           (4) low-cost transportable towers greater than  
19           100 meters in height to capitalize on improved wind  
20           conditions at higher elevations;

21           (5) wind technology for offshore applications,  
22           including improvement of analysis, testing,  
23           verification, and certification to reduce up front time  
24           and cost;

1           (6) advanced computational modeling tools to  
2 improve—

3           (A) the reliability of aeroelastic simulations  
4 of wind energy systems;

5           (B) understanding of the interaction be-  
6 tween each wind turbine component;

7           (C) understanding the loads and lifecycle  
8 of each wind turbine component;

9           (D) siting of wind energy systems to maxi-  
10 mize efficiency and minimize variable genera-  
11 tion;

12           (E) integration of wind energy systems  
13 into the existing electric grid to ensure reli-  
14 ability; and

15           (F) understanding of the wake effect be-  
16 tween upwind and downwind turbine operations;

17           (7) advanced control systems and blade sensors  
18 to improve performance and reliability under a wide  
19 variety of wind conditions;

20           (8) advanced generators, including—

21           (A) automated system and drive train sen-  
22 sors to predict and manage maintenance proc-  
23 ess;

24           (B) medium-speed and low-speed genera-  
25 tors;

1 (C) direct-drive technology; and

2 (D) the use of advanced magnets in gener-  
3 ator rotors;

4 (9) methods to assess and mitigate the effects  
5 of wind energy systems on radar and electro-  
6 magnetic fields;

7 (10) technical processes to enable—

8 (A) scalability of transmission from re-  
9 motely located renewable resource rich areas;  
10 and

11 (B) optimization of advanced infrastruc-  
12 ture design, including high voltage trans-  
13 mission; and

14 (11) other research areas as determined by the  
15 Secretary.

16 **SEC. 3. WIND ENERGY DEMONSTRATION PROGRAM.**

17 (a) IN GENERAL.—The Secretary of Energy shall  
18 conduct a wind energy demonstration program. In car-  
19 rying out this section, the Secretary shall ensure that—

20 (1) the program is of sufficient size and geo-  
21 graphic diversity to measure wind energy system  
22 performance under the full productive range of wind  
23 conditions in the United States;

24 (2) demonstration projects carried out under  
25 this program are—

1 (A) conducted in collaboration with indus-  
2 try and, as appropriate, with academic institu-  
3 tions; and

4 (B) located in various geographic areas  
5 representing various wind class regimes; and

6 (3) data collected from demonstration projects  
7 carried out under this program is useful for carrying  
8 out section 2(b).

9 (b) COST-SHARING.—The Secretary shall carry out  
10 the program under this section in compliance with section  
11 988(a) through (d) and section 989 of the Energy Policy  
12 Act of 2005 (42 U.S.C. 16352(a) through (d) and 16353).

13 **SEC. 4. EQUAL OPPORTUNITY.**

14 In carrying out this Act, the Secretary of Energy  
15 shall—

16 (1) coordinate with the Office of Minority Eco-  
17 nomic Impact and with the Office of Small and Dis-  
18 advantaged Business Utilization; and

19 (2) provide special consideration to applications  
20 submitted by institutions, businesses, or entities con-  
21 taining majority representation by individuals identi-  
22 fied in section 33 or 34 of the Science and Engineer-  
23 ing Equal Opportunities Act (42 U.S.C. 1885a or  
24 1885b).

1 **SEC. 5. COMPETITIVE AWARDS.**

2 Awards under section 2 and section 3 shall be made  
3 on a competitive basis with an emphasis on technical  
4 merit.

5 **SEC. 6. COORDINATION AND NONDUPLICATION.**

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

10 **SEC. 7. AUTHORIZATION OF APPROPRIATIONS.**

11 There are authorized to be appropriated to the Sec-  
12 retary of Energy to carry out this Act \$200,000,000 for  
13 each of the fiscal years 2012 through 2016.

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