

111<sup>TH</sup> CONGRESS  
1<sup>ST</sup> SESSION

# H. R. 3165

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## AN ACT

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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Wind Energy Research  
3 and Development Act of 2009”.

4 **SEC. 2. WIND ENERGY RESEARCH AND DEVELOPMENT PRO-**  
5 **GRAM.**

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

8 (1) improve the energy efficiency, reliability,  
9 and capacity of wind turbines;

10 (2) optimize the design and adaptability of wind  
11 energy systems to the broadest practical range of at-  
12 mospheric conditions; and

13 (3) reduce the cost of construction, generation,  
14 and maintenance of wind energy systems.

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

17 (1) new materials and designs to make larger,  
18 lighter, less expensive, and more reliable rotor  
19 blades;

20 (2) technologies to improve gearbox perform-  
21 ance and reliability;

22 (3) automation, materials, and assembly of  
23 large-scale components to reduce manufacturing  
24 costs;

1           (4) low-cost transportable towers greater than  
2           100 meters in height to capitalize on improved wind  
3           conditions at higher elevations;

4           (5) advanced computational modeling tools to  
5           improve—

6                   (A) the reliability of aeroelastic simulations  
7                   of wind energy systems;

8                   (B) understanding of the interaction be-  
9                   tween each wind turbine component;

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

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

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

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

21           (7) advanced generators, including—

22                   (A) medium-speed and low-speed genera-  
23                   tors;

24                   (B) direct-drive technology; and

1 (C) the use of advanced magnets in gener-  
2 ator rotors;

3 (8) wind technology for offshore applications;

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

7 (10) wind turbines with a maximum electric  
8 power production capacity of 100 kilowatts or less;

9 (11) technical processes to enable—

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

12 and

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

16 (12) other research areas as determined by the  
17 Secretary.

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

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

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

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

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

6           (B) located in various geographic areas  
7 representing various wind class regimes; and

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

11       (b) **COST-SHARING.**—The Secretary shall carry out  
12 the program under this section in compliance with section  
13 988(a) through (d) and section 989 of the Energy Policy  
14 Act of 2005 (42 U.S.C. 16352(a) through (d) and 16353).

15 **SEC. 4. EQUAL OPPORTUNITY.**

16       In carrying out this Act, the Secretary of Energy  
17 shall—

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

21           (2) provide special consideration to applications  
22 submitted by institutions, businesses, or entities con-  
23 taining majority representation by individuals identi-  
24 fied in section 33 or 34 of the Science and Engineer-

1 ing Equal Opportunities Act (42 U.S.C. 1885a or  
2 1885b).

3 **SEC. 5. COMPETITIVE AWARDS.**

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

7 **SEC. 6. COORDINATION AND NONDUPLICATION.**

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

12 **SEC. 7. AUTHORIZATION OF APPROPRIATIONS.**

13 There are authorized to be appropriated to the Sec-  
14 retary of Energy to carry out this Act \$200,000,000 for  
15 each of the fiscal years 2010 through 2014.

Passed the House of Representatives September 9,  
2009.

Attest:

*Clerk.*



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