111TH CONGRESS
1ST SESSION

H. R. 3165

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 10, 2009

Received; read twice and referred to the Committee on Energy and Natural Resources

AN ACT

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

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Wind Energy Research and Development Act of 2009''.

SEC. 2. WIND ENERGY RESEARCH AND DEVELOPMENT PROGRAM.

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

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

(2) optimize the design and adaptability of wind energy systems to the broadest practical range of atmospheric conditions; and

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

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

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

(2) technologies to improve gearbox performance and reliability;

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

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

(5) advanced computational modeling tools to improve—

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

(B) understanding of the interaction between each wind turbine component;

(C) siting of wind energy systems to maximize efficiency and minimize variable generation;

(D) integration of wind energy systems into the existing electric grid to ensure reliability; and

(E) understanding of the wake effect between upwind and downwind turbine operations;

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

(7) advanced generators, including—

(A) medium-speed and low-speed generators;

(B) direct-drive technology; and

(C) the use of advanced magnets in generator rotors;

(8) wind technology for offshore applications;

(9) methods to assess and mitigate the effects of wind energy systems on radar and electromagnetic fields;

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

(11) technical processes to enable—

(A) scalability of transmission from remotely located renewable resource rich areas; and

(B) optimization of advanced infrastructure design, including high voltage transmission; and

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

SEC. 3. WIND ENERGY DEMONSTRATION PROGRAM.

(a) IN GENERAL.—The Secretary of Energy shall conduct a wind energy demonstration program. In carrying out this section, the Secretary shall ensure that—

(1) the program is of sufficient size and geographic diversity to measure wind energy system performance under the full productive range of wind conditions in the United States;

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

(A) conducted in collaboration with industry and, as appropriate, with academic institutions; and

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

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

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

SEC. 4. EQUAL OPPORTUNITY.

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

(1) coordinate with the Office of Minority Economic Impact and with the Office of Small and Disadvantaged Business Utilization; and

(2) provide special consideration to applications submitted by institutions, businesses, or entities containing majority representation by individuals identified in section 33 or 34 of the Science and Engineer-

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

SEC. 5. COMPETITIVE AWARDS.

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

SEC. 6. COORDINATION AND NONDUPLICATION.

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

SEC. 7. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary of Energy to carry out this Act $200,000,000 for each of the fiscal years 2010 through 2014.

Passed the House of Representatives September 9, 2009.

Attest: LORRAINE C. MILLER,

Clerk.