AMENDMENT NO._____ Calendar No._____

Purpose: To promote wind energy research and development.

IN THE SENATE OF THE UNITED STATES—111th Cong., 2d Sess.

S. 1462

To promote clean energy technology development, enhanced energy efficiency, improved energy security, and energy innovation and workforce development, and for other purposes.

Referred to the Committee on _____ and ordered to be printed

Ordered to lie on the table and to be printed

AMENDMENT intended to be proposed by

_____

Viz:

On page 471, between lines 14 and 15, insert the following:

Subtitle F—Wind Energy Research and Development

SEC. 461. WIND ENERGY RESEARCH AND DEVELOPMENT PROGRAM.

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

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

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

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

(b) PROGRAM.—The program under this section shall consider a wide range of technologies (including materials, automation and control systems, computational models, gearing, mitigation of impacts on wildlife and aviation, advanced generators (such as high altitude wind systems), operational impacts in cold regions, and other topics, as determined by the Secretary) to advance the field of wind energy generation.

SEC. 462. WIND ENERGY DEMONSTRATION PROGRAM.

(a) IN GENERAL.—The Secretary shall carry out a wind energy demonstration program to demonstrate highly innovative land-based wind designs, including integrated systems, components, structures, materials, and infrastructure.

(b) REQUIREMENTS.—In carrying out this section, the Secretary shall ensure that—

(1) the demonstration 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 the 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 the program is useful for carrying out section 461(b).

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

SEC. 463. OFFSHORE WIND ENERGY RESEARCH AND DEVELOPMENT PROGRAM.

(a) IN GENERAL.—As soon as practicable after the date of enactment of this Act, in accordance with subsection (b), the Secretary shall carry out an offshore wind energy research and development program to demonstrate highly innovative offshore-based wind designs (including

integrated systems, components, structures, materials, and infrastructure)—

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

(2) to reduce the cost of manufacturing, construction, deployment, generation, and maintenance of offshore wind energy systems.

(b) PROGRAM REQUIREMENTS.—The Secretary shall carry out the program to support—

(1) the design, demonstration, and deployment of advanced wind turbine foundations and support structures, blades, turbine systems, components, and supporting land- and water-based infrastructure for application in—

(A) shallow water;

(B) transitional depths; and

(C) deep offshore water;

(2) the full-scale testing and establishment of regional demonstrations of offshore wind components and systems to validate technology and performance issues relating to the components;

(3) for inclusion in a publically accessible database, assessments of the offshore wind resources of the United States, including—

(A) environmental impacts and benefits;

(B) siting and permitting issues;

(C) exclusion zones; and

(D) transmission needs;

(4) the design, demonstration, and deployment of integrated sensors, actuators, and advanced materials (including composite materials);

(5) advanced blade manufacturing activity (including automation, materials, and the assembly of large-scale components) to stimulate the development of the blade manufacturing capacity of the United States;

(6) methods to assess and mitigate the effects of wind energy systems on marine ecosystems and marine industries; and

(7) other research areas, as determined to be appropriate by the Secretary.

(c) MARINE HYDROKINETIC ENERGY.—Activities carried out under this subsection shall be coordinated and, to the maximum extent practicable, jointly carried out with activities carried out under section 474.

SEC. 464. NATIONAL OFFSHORE WIND ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION CENTERS.

(a) IN GENERAL.—As soon as practicable after the date of enactment of this Act, the Secretary shall award

grants to institutions of higher education (as defined in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))) to establish 1 or more national offshore wind centers.

(b) SELECTION CRITERIA.—In selecting institutions of higher education under subsection (a), the Secretary shall give preference to institutions of higher education that—

(1) agree to cover transitional depth technologies to complement the activities of a national offshore wind center;

(2) agree to host an offshore wind energy research and development program funded by the Department of Energy in coordination with an engineering program of the institution of higher education;

(3) employ individuals who have proven expertise relating to the development of novel materials for commercial applications; and

(4) have access to, and use the resources of—

(A) the Atlantic Ocean;

(B) the Gulf of Mexico;

(C) the Arctic Ocean; or

(D) the Pacific Ocean.

(c) REQUIREMENTS.—A national offshore wind center established with funds provided by the Secretary through a grant under subsection (a) shall be designed—

(1) to focus on deepwater floating offshore wind energy technologies; and

(2) to facilitate the conduct of initiatives to advance 1 or more activities described in section 463(b).

SEC. 465. EQUAL OPPORTUNITY.

In carrying out this Act, the Secretary shall—

(1) coordinate with the Office of Minority Economic Impact and the Office of Small and Disadvantaged Business Utilization of the Department of Energy; 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 Engineering Equal Opportunities Act (42 U.S.C. 1885a, 1885b).

SEC. 466. COMPETITIVE AWARDS.

Awards under this subtitle shall be made on a competitive basis with an emphasis on technical merit.

SEC. 467. COORDINATION AND NONDUPLICATION.

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

SEC. 468. SMALL BUSINESS ALLOCATION.

It is the sense of the Senate that, of the amounts authorized to be appropriated for each fiscal year, the Secretary should ensure that the amount made available for awards under sections 461 and 462 is consistent with the percentage goal for small business concerns (within the meaning of section 3 of the Small Business Act (15 U.S.C. 632)) that the Secretary establishes for each year in conjunction with the Small Business Administration.

SEC. 469. FUNDING.

This subtitle shall be carried out using funds made available under section 401(a).