116TH CONGRESS
1ST SESSION

S. _____

To amend the Energy Independence and Security Act of 2007 to provide for research on, and the development and deployment of, marine energy, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. WYDEN introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

To amend the Energy Independence and Security Act of 2007 to provide for research on, and the development and deployment of, marine energy, 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 ''Marine Energy Research and Development Act of 2019''.

SEC. 2. PURPOSE.

The purpose of this Act is to support marine energy programs that—

(1) promote research on, and the development of, increased energy generation and capacity at reduced costs;

(2) promote research and development activities that improve environmental outcomes of marine energy technologies;

(3) provide grid stability and create new market opportunities; and

(4) promote job creation in the energy sector.

SEC. 3. DEFINITION OF MARINE ENERGY.

(a) IN GENERAL.—Section 632 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17211) is amended to read as follows:

"SEC. 632. DEFINITION OF MARINE ENERGY.

''In this subtitle, the term 'marine energy' means energy from—

''(1) waves, tides, and currents in oceans, estuaries, and tidal areas;

''(2) free-flowing hydrokinetic water in rivers, lakes, and streams;

''(3) free-flowing hydrokinetic water in man-made channels; and

''(4) differentials in ocean temperature or ocean thermal energy conversion.''.

(b) CONFORMING EDITS.—

(1) The subtitle heading for subtitle C of title VI of the Energy Independence and Security Act of 2007 (Public Law 110–440; 121 Stat. 1686) is amended by striking ''**and Hydrokinetic Renewable**''.

(2) Section 631 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17001 note; 121 Stat. 1686) is amended by striking ''and Hydrokinetic Renewable''.

SEC. 4. MARINE ENERGY RESEARCH AND DEVELOPMENT.

Section 633 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17212) is amended to read as follows:

''SEC. 633. MARINE ENERGY RESEARCH AND DEVELOPMENT.

''(a) IN GENERAL.—The Secretary, acting through the Director of the Water Power Technologies Office, in consultation with the Secretary of the Interior, the Secretary of Commerce, and the Federal Energy Regulatory Commission, shall carry out a program to accelerate the introduction of marine energy production into the United States energy supply, giving priority to technologies most likely to lead to commercial utilization, while fostering accelerated research, development, demonstration, and commercial application of technology, including programs—

''(1) to assist technology development on a variety of scales, including full-scale prototypes, to improve the components, processes, and systems used for power generation from marine energy resources;

''(2) to establish and expand critical testing infrastructure and facilities necessary—

''(A) to cost-effectively and efficiently test and prove marine energy devices; and

''(B) to accelerate the technological readiness and commercialization of those devices;

''(3) to support efforts to increase the efficiency of energy conversion, lower the cost, increase the use, improve the reliability, and demonstrate the applicability of marine energy technologies by participating in demonstration projects;

''(4) to investigate variability issues and the efficient and reliable integration of marine energy with the utility grid;

''(5) to identify and study critical short- and long-term needs to create a sustainable marine energy supply chain based in the United States;

''(6) to increase the reliability and survivability of marine energy technologies;

''(7) to verify the performance, reliability, maintainability, and cost of new marine energy device de-

signs and system components in an operating environment;

''(8) to consider the protection of critical infrastructure, such as adequate separation between marine energy devices and projects and submarine telecommunications cables, including consideration of established industry standards;

''(9)(A) to coordinate the programs carried out under this section with, and avoid duplication of activities across, programs of the Department and other applicable Federal agencies, including National Laboratories; and

''(B) to coordinate public-private collaboration in carrying out the programs under this section;

''(10) to identify opportunities for joint research and development programs and the development of economies of scale between—

''(A) marine energy technologies; and

''(B) other renewable energy and fossil energy programs, offshore oil and gas production activities, and activities of the Department of Defense;

''(11) to identify, in conjunction with the Secretary of Commerce, acting through the Under Secretary of Commerce for Oceans and Atmosphere,

and other relevant Federal agencies as appropriate, the potential environmental impacts, including potential impacts on fisheries and other marine resources, of marine energy technologies, measures to prevent adverse impacts, and technologies and other means available for monitoring and determining environmental impacts;

''(12) to identify, in conjunction with the Secretary of the Department in which the United States Coast Guard is operating, acting through the Commandant of the United States Coast Guard, the potential navigational impacts of marine energy technologies and measures to prevent adverse impacts on navigation; and

''(13) to support in-water technology development with international partners using existing cooperative procedures (including memoranda of understanding)—

''(A) to allow cooperative funding and other support of value to be exchanged and leveraged; and

''(B) to encourage international research centers and international companies to participate in the development of marine energy technology in the United States and to encourage

United States research centers and companies to participate in marine energy projects abroad.

''(b) COST SHARING AND MERIT REVIEW.—The Secretary shall carry out the program under this section in accordance with sections 988 and 989 of the Energy Policy Act of 2005 (42 U.S.C. 16352, 16353).''.

SEC. 5. NATIONAL MARINE ENERGY CENTERS.

Section 634 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17213) is amended—

(1) in the section heading, by striking ''**RENEWABLE ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION**'' and inserting ''**ENERGY**'';

(2) by redesignating subsection (c) as subsection (d); and

(3) by striking subsections (a) and (b) and inserting the following:

''(a) CENTERS.—

''(1) IN GENERAL.—The Secretary shall award grants to institutions of higher education for—

''(A) the continuation and expansion of research, development, and testing activities at National Marine Energy Centers established as of January 1, 2019; and

''(B) the establishment of new National Marine Energy Centers.

''(2) CRITERIA.—In selecting locations for new National Marine Energy Centers to be established under paragraph (1)(B), the Secretary shall consider sites that meet 1 of the following criteria:

''(A) The new Center hosts an existing marine energy research and development program in coordination with an engineering program at an institution of higher education.

''(B) The new Center has proven expertise to support environmental and policy-related issues associated with the harnessing of energy in the marine environment.

''(C) The new Center has access to and uses marine resources.

''(b) PURPOSES.—The National Marine Energy Centers shall coordinate with other National Marine Energy Centers, the Department, and the National Laboratories—

''(1) to advance research, development, and demonstration of marine energy technologies;

''(2) to support in-water testing and demonstration of marine energy technologies, including facilities capable of testing—

''(A) marine energy systems of various technology readiness levels and scales;

"(B) a variety of technologies in multiple test berths at a single location; and

"(C) arrays of technology devices; and

"(3) to serve as information clearinghouses for the marine energy industry by collecting and disseminating information on best practices in all areas relating to developing and managing marine energy resources and energy systems.

"(c) COST SHARING.—The Secretary shall carry out the program under this section in accordance with section 988(b)(4) of the Energy Policy Act of 2005 (42 U.S.C. 16352(b)(4)).".

SEC. 6. AUTHORIZATION OF APPROPRIATIONS.

Section 636 of the Energy Independence and Security Act of 2007 (42 U.S.C. 17215) is amended by striking "$50,000,000 for each of the fiscal years 2008 through 2012" and inserting "$150,000,000 for each of fiscal years 2020 and 2021".