

111TH CONGRESS
2^D SESSION

H. R. 6344

To promote the research, development, demonstration, and commercial application of marine and hydrokinetic renewable energy technologies, to identify the potential environmental impacts of these technologies and ways to address these impacts, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 29, 2010

Mr. INSLEE (for himself and Mr. BAIRD) introduced the following bill; which was referred to the Committee on Science and Technology

A BILL

To promote the research, development, demonstration, and commercial application of marine and hydrokinetic renewable energy technologies, to identify the potential environmental impacts of these technologies and ways to address these impacts, 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 “Marine and
5 Hydrokinetic Renewable Energy Promotion Act of 2010”.

6 **SEC. 2. DEFINITIONS.**

7 (a) IN GENERAL.—For the purposes of this Act—

1 (1) the term “marine and hydrokinetic renew-
2 able energy” has the meaning given that term in
3 section 632 of the Energy Independence and Secu-
4 rity Act of 2007 (42 U.S.C. 17211); and

5 (2) the term “Secretary” means the Secretary
6 of Energy.

7 (b) AMENDMENT.—Section 632 of the Energy Inde-
8 pendence and Security Act of 2007 (42 U.S.C. 17211) is
9 amended to read as follows:

10 **“SEC. 632. DEFINITION.**

11 “For the purposes of this subtitle the term ‘marine
12 and hydrokinetic renewable energy’ means energy from—

13 “(1) waves, tides, and currents in oceans, estu-
14 aries, and tidal areas;

15 “(2) free flowing water in rivers, lakes, man-
16 made water systems, and streams;

17 “(3) salinity gradients; and

18 “(4) water temperature gradients, including
19 ocean thermal energy conversion.

20 The term ‘marine and hydrokinetic renewable energy’ does
21 not include energy from any source that uses a dam, diver-
22 sionary structure, or impoundment for electric power pur-
23 poses.”.

1 **SEC. 3. RESEARCH, DEVELOPMENT, DEMONSTRATION, AND**
2 **COMMERCIAL APPLICATION PROGRAM.**

3 Section 633(a) of the Energy Independence and Se-
4 curity Act of 2007 (42 U.S.C. 17212(a)) is amended to
5 read as follows:

6 “(a) ESTABLISHMENT OF PROGRAM.—

7 “(1) IN GENERAL.—The Secretary, in consulta-
8 tion with the Secretary of Commerce, acting through
9 the Administrator of the National Oceanic and At-
10 mospheric Administration, shall establish a program
11 of marine and hydrokinetic renewable energy tech-
12 nology research, development, demonstration, and
13 commercial application, which shall include activities
14 to address the following:

15 “(A) Testing technologies, devices, and
16 systems at a variety of scales to facilitate their
17 commercial application.

18 “(B) Identifying, assessing, and finding
19 ways to avoid and minimize environmental im-
20 pacts potentially arising from marine and
21 hydrokinetic renewable energy technologies.

22 “(C) Establishing and expanding test cen-
23 ters and facilities.

24 “(D) Reducing the manufacturing, instal-
25 lation, operation, and maintenance costs of
26 technologies.

1 “(E) Increasing performance, reliability,
2 and survivability of technologies, devices, sys-
3 tems, and facilities.

4 “(F) Integrating technologies into the na-
5 tional electric grid.

6 “(G) Identifying, developing, dem-
7 onstrating, and transferring to the private sec-
8 tor advanced systems engineering and system
9 integration methods to identify critical inter-
10 faces.

11 “(H) Developing numerical and physical
12 tools, including models and monitoring tech-
13 nologies, to assist industry in device and system
14 design and operation.

15 “(I) Determining the potential availability,
16 extractability, and cost-effectiveness of marine
17 and hydrokinetic renewable energy generation
18 in the United States.

19 “(J) Supporting material sciences, includ-
20 ing the development of corrosive-resistant mate-
21 rials.

22 “(K) Designing and developing evaluation
23 and performance standards domestically and
24 with international partners.

1 “(L) Applying model predictions of rel-
2 evant oceanic and atmospheric variables on time
3 scales necessary for development and operation
4 of marine and hydrokinetic renewable energy
5 technologies, including for integration onto the
6 electricity grid.

7 “(M) Identifying opportunities to transfer
8 knowledge from existing marine and other in-
9 dustries to technology developers.

10 “(N) Identifying opportunities and benefits
11 from colocated development of multiple renew-
12 able energy technologies or other activities.

13 “(O) Identifying the potential impacts on
14 navigation of marine and hydrokinetic renew-
15 able energy technologies, and identifying meas-
16 ures to avoid and minimize adverse impacts on
17 these uses.

18 “(P) Improving interagency collaboration
19 to address challenges associated with the devel-
20 opment of marine and hydrokinetic renewable
21 energy technologies.

22 “(Q) Any other area of marine and
23 hydrokinetic renewable energy technology devel-
24 opment that the Secretary considers appro-
25 priate.

1 “(2) SEPARATION.—The program established
2 under paragraph (1) shall be separate from the
3 Wind and Hydropower Program at the Department
4 of Energy.”.

5 **SEC. 4. ENERGY GENERATION TECHNOLOGY DEMONSTRATION GRANTS.**
6

7 (a) IN GENERAL.—In carrying out section 633 of the
8 Energy Independence and Security Act of 2007 (42
9 U.S.C. 17212), the Secretary shall establish a competitive
10 marine and hydrokinetic renewable energy technology
11 demonstration grant program to—

12 (1) verify the performance, reliability, maintain-
13 ability, environmental impact, and cost of technology
14 components, devices, and system designs in an oper-
15 ating environment; and

16 (2) facilitate the commercial application of tech-
17 nology components, devices, and systems at a variety
18 of scales.

19 (b) ACTIVITIES.—Activities that may be funded
20 under this section include the following:

21 (1) Providing stakeholders and industry with an
22 opportunity to test and evaluate, including by con-
23 necting to the national electrical grid, marine and
24 hydrokinetic renewable energy technologies at a vari-
25 ety of scales, including full-scale prototypes.

1 (2) Documenting and communicating technical,
2 environmental and, economic information from
3 projects for the benefit of utilities, independent
4 power producers, other nonutility generators, device
5 suppliers, and other stakeholders.

6 (3) Obtaining operating, maintenance, and cost
7 data sufficiently rigorous to evaluate demonstrated
8 technologies, components, devices, and systems.

9 (4) Providing information to the public on po-
10 tential positive and negative environmental impacts,
11 effective monitoring techniques, and engineering de-
12 sign improvements to reduce environmental impacts
13 throughout demonstration projects.

14 (5) Conducting research, development, and
15 monitoring activities necessary to support the dem-
16 onstration project.

17 **SEC. 5. ENVIRONMENTAL RESEARCH, DEVELOPMENT, AND**
18 **DEMONSTRATION GRANTS.**

19 In carrying out section 633 of the Energy Independ-
20 ence and Security Act of 2007 (42 U.S.C. 17212), the
21 Secretary shall establish a competitive research, develop-
22 ment, and demonstration grant program to identify, as-
23 sess, and find ways to avoid and minimize environmental
24 impacts potentially arising from marine and hydrokinetic

1 renewable energy technologies, devices, and systems. The
2 program shall—

3 (1) measure such potential impacts;

4 (2) evaluate any environmental risks associated
5 with marine and hydrokinetic renewable energy tech-
6 nologies, devices, and systems;

7 (3) research and evaluate the effectiveness of
8 strategies, including adaptive management, to avoid,
9 minimize, or eliminate such potential impacts;

10 (4) develop and demonstrate monitoring and
11 other technologies needed to identify such potential
12 impacts;

13 (5) support baseline environmental research, in-
14 cluding ecological characterization of marine eco-
15 systems, for specific demonstration projects;

16 (6) facilitate public-private cooperation, includ-
17 ing identification and assessment of relevant existing
18 private sector technologies; and

19 (7) communicate and disseminate to the public
20 information generated from a grant awarded under
21 this section to aid in efficient and environmentally
22 responsible technology development, except to the ex-
23 tent that the information is protected from disclo-
24 sure under applicable law.

1 **SEC. 6. TEST FACILITIES.**

2 (a) **IN GENERAL.**—In carrying out section
3 633(a)(1)(C) of the Energy Independence and Security
4 Act of 2007 (42 U.S.C. 17212(a)(1)(C)), not later than
5 180 days after the date of enactment of this Act, the Sec-
6 retary shall award competitive grants to support 3 or more
7 geographically dispersed marine and hydrokinetic renew-
8 able energy technology research, development, and dem-
9 onstration test facilities for the demonstration of multiple
10 technologies in actual operating environments. These
11 grants may support modification of an existing facility, in-
12 cluding a Center established under section 634 of the En-
13 ergy Independence and Security Act of 2007 (42 U.S.C.
14 17213), or construction of a new test facility.

15 (b) **PROGRAM OBJECTIVES.**—In awarding grants
16 under this section, the Secretary shall provide for—

17 (1) the demonstration of a variety of tech-
18 nologies at each test facility;

19 (2) the demonstration of a variety of tech-
20 nologies among all of the test facilities established;
21 and

22 (3) the demonstration of technologies at a vari-
23 ety of scales.

24 (c) **ACTIVITIES.**—Each test facility established under
25 this section shall—

1 (1) provide infrastructure and resources for the
2 evaluation and technical viability testing of marine
3 and hydrokinetic renewable energy technologies; and

4 (2) conduct and support research, development,
5 and demonstration activities with respect to marine
6 and hydrokinetic renewable energy technologies, in-
7 cluding in support of the program and activities de-
8 scribed in sections 4 and 5.

9 (d) APPLICANTS.—An applicant for a grant under
10 this section shall be a nonprofit institution, State or local
11 government, institution of higher education, National Lab-
12 oratory, or Center established under section 634 of the
13 Energy Independence and Security Act of 2007 (42
14 U.S.C. 17213), which can demonstrate to the satisfaction
15 of the Secretary the ability and intention to—

16 (1) combine expertise from relevant academic
17 fields, including those related to the environment,
18 marine sciences, energy, and electrical, mechanical,
19 and civil engineering; and

20 (2) partner with other entities that have exper-
21 tise in advancing marine and hydrokinetic renewable
22 energy technologies.

23 (e) MAXIMUM AMOUNT.—The Secretary shall provide
24 no more than a total of \$50,000,000 in Federal assistance,
25 under this or any other Act, for each test facility.

1 (f) AMENDMENTS.—Section 634 of the Energy Inde-
2 pendence and Security Act of 2007 (42 U.S.C. 17213) is
3 amended—

4 (1) in subsection (a), by striking “marine re-
5 newable energy technologies” and inserting “marine
6 and hydrokinetic renewable energy technologies”;
7 and

8 (2) by amending subsection (b) to read as fol-
9 lows:

10 “(b) PURPOSES.—The Centers shall advance re-
11 search, development, demonstration, and commercial ap-
12 plication of marine and hydrokinetic renewable energy
13 technologies and—

14 “(1) shall serve as information clearinghouses
15 for the marine and hydrokinetic renewable energy
16 industry, collecting and disseminating information
17 on best practices in all areas related to developing
18 and managing marine and hydrokinetic renewable
19 energy technologies; and

20 “(2) may serve as technology test facilities es-
21 tablished under section 6 of the Marine and
22 Hydrokinetic Renewable Energy Promotion Act of
23 2010.”.

1 **SEC. 7. ORGANIZATION AND ADMINISTRATION OF PRO-**
2 **GRAMS.**

3 (a) **COORDINATION AND NONDUPLICATION.**—In car-
4 rying out this Act the Secretary shall coordinate and avoid
5 duplication of activities across programs of the Depart-
6 ment of Energy and with other relevant Federal agencies,
7 including with those of the National Laboratories.

8 (b) **COLLABORATION.**—In carrying out this Act the
9 Secretary shall collaborate with industry, stakeholders, the
10 National Laboratories, other relevant Federal agencies,
11 relevant academic institutions, and international bodies
12 with relevant scientific expertise.

13 (c) **PUBLIC AVAILABILITY.**—The Secretary shall ob-
14 tain from the recipient of assistance under this Act and
15 make available to the public, through Department
16 websites, reports, and databases, any research, develop-
17 ment, demonstration, and commercial application informa-
18 tion generated with respect to the technology supported
19 under this Act, including information discovered after the
20 completion of activities supported under this Act, except
21 to the extent that the information is protected from disclo-
22 sure under section 552(b) of title 5, United States Code.

23 (d) **REPORT TO CONGRESS.**—Not later than 1 year
24 after the date of enactment of this Act, and at least once
25 every 2 years thereafter, the Secretary shall transmit to

1 the Congress a report on the findings and activities under
2 this Act.

3 **SEC. 8. AUTHORIZATION OF APPROPRIATIONS.**

4 There are authorized to be appropriated to the Sec-
5 retary to carry out this Act—

6 (1) \$200,000,000 for fiscal year 2011, to re-
7 main available until expended, of which—

8 (A) \$40,000,000 shall be for carrying out
9 section 4;

10 (B) \$40,000,000 shall be for carrying out
11 section 5; and

12 (C) \$100,000,000 shall be for carrying out
13 section 6; and

14 (2) \$150,000,000 for each of fiscal years 2012
15 through 2015, to remain available until expended, of
16 which—

17 (A) \$70,000,000 shall be for carrying out
18 section 4; and

19 (B) \$60,000,000 shall be for carrying out
20 section 5.

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