

**Calendar No. 634**113<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION**S. 1419****[Report No. 113–294]**

To promote research, development, and demonstration of marine and hydrokinetic renewable energy technologies, and for other purposes.

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## IN THE SENATE OF THE UNITED STATES

AUGUST 1, 2013

Mr. WYDEN (for himself, Ms. MURKOWSKI, Mr. KING, Mr. MERKLEY, and Mr. SCHATZ) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

DECEMBER 10, 2014

Reported by Ms. LANDRIEU, with an amendment

[Strike out all after the enacting clause and insert the part printed in *italic*]**A BILL**

To promote research, development, and demonstration of marine and hydrokinetic renewable energy technologies, 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; TABLE OF CONTENTS.**

2 (a) **SHORT TITLE.**—This Act may be cited as the  
 3 “Marine and Hydrokinetic Renewable Energy Act of  
 4 2013”.

5 (b) **TABLE OF CONTENTS.**—The table of contents of  
 6 this Act is as follows:

Sec. 1. Short title; table of contents.

**TITLE I—MARINE AND HYDROKINETIC RENEWABLE ENERGY  
 TECHNOLOGIES**

Sec. 101. Definition of marine and hydrokinetic renewable energy.

Sec. 102. Marine and hydrokinetic renewable energy research and development.

Sec. 103. National Marine Renewable Energy Research, Development, and  
 Demonstration Centers.

Sec. 104. Authorization of appropriations.

**TITLE II—MARINE AND HYDROKINETIC RENEWABLE ENERGY  
 REGULATORY EFFICIENCY**

Sec. 201. Marine and hydrokinetic renewable energy projects and facilities.

7 **TITLE I—MARINE AND HYDROKI-**  
 8 **NETIC RENEWABLE ENERGY**  
 9 **TECHNOLOGIES**

10 **SEC. 101. DEFINITION OF MARINE AND HYDROKINETIC RE-**  
 11 **NEWABLE ENERGY.**

12 Section 632 of the Energy Independence and Security  
 13 Act of 2007 (42 U.S.C. 17211) is amended in the matter  
 14 preceding paragraph (1) by striking “electrical”.

15 **SEC. 102. MARINE AND HYDROKINETIC RENEWABLE EN-**  
 16 **ERGY RESEARCH AND DEVELOPMENT.**

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

1 **“SEC. 633. MARINE AND HYDROKINETIC RENEWABLE EN-**  
2 **ERGY RESEARCH AND DEVELOPMENT.**

3 “The Secretary, in consultation with the Secretary of  
4 the Interior, the Secretary of Commerce, and the Federal  
5 Energy Regulatory Commission, shall carry out a program  
6 of research, development, demonstration, and commercial  
7 application to expand marine and hydrokinetic renewable  
8 energy production, including programs—

9 “(1) to assist technology development to im-  
10 prove the components, processes, and systems used  
11 for power generation from marine and hydrokinetic  
12 renewable energy resources;

13 “(2) to establish critical testing infrastructure  
14 necessary—

15 “(A) to cost effectively and efficiently test  
16 and prove marine and hydrokinetic renewable  
17 energy devices; and

18 “(B) to accelerate the technological readi-  
19 ness and commercialization of those devices;

20 “(3) to support efforts to increase the efficiency  
21 of energy conversion, lower the cost, increase the  
22 use, improve the reliability, and demonstrate the ap-  
23 plicability of marine and hydrokinetic renewable en-  
24 ergy technologies by participating in demonstration  
25 projects;

1           “(4) to investigate variability issues and the ef-  
2           ficient and reliable integration of marine and  
3           hydrokinetic renewable energy with the utility grid;

4           “(5) to identify and study critical short- and  
5           long-term needs to create a sustainable marine and  
6           hydrokinetic renewable energy supply chain based in  
7           the United States;

8           “(6) to increase the reliability and survivability  
9           of marine and hydrokinetic renewable energy tech-  
10          nologies, including development of corrosion-resist-  
11          ant and anti-fouling materials;

12          “(7) to verify the performance, reliability, main-  
13          tainability, and cost of new marine and hydrokinetic  
14          renewable energy device designs and system compo-  
15          nents in an operating environment;

16          “(8) to coordinate and avoid duplication of ac-  
17          tivities across programs of the Department and  
18          other applicable Federal agencies, including National  
19          Laboratories;

20          “(9) to identify opportunities for joint research  
21          and development programs and development of  
22          economies of scale between—

23                  “(A) marine and hydrokinetic renewable  
24                  energy technologies; and

1           “(B) other renewable energy and fossil en-  
 2           ergy programs, offshore oil and gas production  
 3           activities, and activities of the Department of  
 4           Defense; and

5           “(10) to support in-water technology develop-  
 6           ment with international partners using existing co-  
 7           operative procedures (including memoranda of un-  
 8           derstanding)—

9           “(A) to allow cooperative funding and  
 10          other support of value to be exchanged and le-  
 11          veraged; and

12          “(B) to encourage the participation of  
 13          international research centers and companies in  
 14          the United States and the participation of re-  
 15          search centers and companies of the United  
 16          States in international projects.”.

17 **SEC. 103. NATIONAL MARINE RENEWABLE ENERGY RE-**  
 18 **SEARCH, DEVELOPMENT, AND DEMONSTRA-**  
 19 **TION CENTERS.**

20          Section 634 of the Energy Independence and Security  
 21 Act of 2007 (42 U.S.C. 17213) is amended by striking  
 22 subsection (b) and inserting the following:

23          “(b) PURPOSES.—The Centers (in coordination with  
 24 the Department and National Laboratories) shall—

1           “(1) advance research, development, demonstra-  
2           tion, and commercial application of marine and  
3           hydrokinetic renewable energy technologies;

4           “(2) support in-water testing and demonstra-  
5           tion of marine and hydrokinetic renewable energy  
6           technologies, including facilities capable of testing—

7                   “(A) marine and hydrokinetic renewable  
8                   energy systems of various technology readiness  
9                   levels and scales;

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

12                   “(C) arrays of technology devices; and

13           “(3) serve as information clearinghouses for the  
14           marine and hydrokinetic renewable energy industry  
15           by collecting and disseminating information on best  
16           practices in all areas relating to developing and  
17           managing marine and hydrokinetic renewable energy  
18           resources and energy systems.”.

19 **SEC. 104. AUTHORIZATION OF APPROPRIATIONS.**

20           Section 636 of the Energy Independence and Security  
21           Act of 2007 (42 U.S.C. 17215) is amended by striking  
22           “2008 through 2012” and inserting “2014 through  
23           2017”.

1 **TITLE II—MARINE AND HYDRO-**  
 2 **KINETIC RENEWABLE ENER-**  
 3 **GY REGULATORY EFFICIENCY**

4 **SEC. 201. MARINE AND HYDROKINETIC RENEWABLE EN-**  
 5 **ERGY PROJECTS AND FACILITIES.**

6 Part I of the Federal Power Act (16 U.S.C. 792 et  
 7 seq.) is amended by adding at the end the following:

8 **“SEC. 34. PILOT LICENSE FOR MARINE AND HYDROKINETIC**  
 9 **RENEWABLE ENERGY PROJECTS.**

10 **“(a) DEFINITION OF HYDROKINETIC PILOT**  
 11 **PROJECT.—**

12 **“(1) IN GENERAL.—**In this section, the term  
 13 ‘hydrokinetic pilot project’ means a facility that gen-  
 14 erates energy from—

15 **“(A) waves, tides, or currents in an ocean,**  
 16 **estuary, or tidal area; or**

17 **“(B) free-flowing water in a river, lake, or**  
 18 **stream.**

19 **“(2) EXCLUSIONS.—**The term ‘hydrokinetic  
 20 pilot project’ does not include a project that uses a  
 21 dam or other impoundment for electric power pur-  
 22 poses.

23 **“(b) PILOT LICENSES AUTHORIZED.—**The Commis-  
 24 sion may issue a pilot license to construct, operate, and

1 maintain a hydrokinetic pilot project that meets the cri-  
 2 teria listed in subsection (e).

3       “(e) LICENSE CRITERIA.—The Commission may  
 4 issue a pilot license for a hydrokinetic pilot project if the  
 5 project—

6           “(1) will have an installed capacity of not more  
 7 than 10 megawatts;

8           “(2) is for a term of not more than 10 years;

9           “(3) will not cause a significant adverse envi-  
 10 ronmental impact or interfere with navigation;

11           “(4) is removable and can shut down on reason-  
 12 able notice in the event of a significant adverse safe-  
 13 ty, navigation, or environmental impact;

14           “(5) can be removed, and the site can be re-  
 15 stored, by the end of the license term, unless the  
 16 project has obtained a new license or the Commis-  
 17 sion has determined, based on substantial evidence,  
 18 that the project should not be removed because it  
 19 would be preferable for environmental or other rea-  
 20 sons not to; and

21           “(6) is primarily for the purpose of—

22           “(A) testing new hydrokinetic technologies;

23           “(B) locating appropriate sites for new  
 24 hydrokinetic technologies; or

1           “(C) determining the environmental and  
2           other effects of a hydrokinetic technology.

3           “(d) LEAD AGENCY.—In carrying out this section,  
4 the Commission shall act as the lead agency—

5           “(1) to coordinate all applicable Federal author-  
6           izations; and

7           “(2) to comply with the National Environ-  
8           mental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

9           “(e) SCHEDULE GOALS.—

10           “(1) IN GENERAL.—Not later than 30 days  
11 after the date on which the Commission receives a  
12 completed application, and following consultation  
13 with Federal, State, and local agencies with jurisdic-  
14 tion over the hydrokinetic pilot project, the Commis-  
15 sion shall develop and issue pilot license approval  
16 process scheduling goals that cover all Federal,  
17 State, and local permits required by law.

18           “(2) COMPLIANCE.—Applicable Federal, State,  
19 and local agencies shall comply with the goals estab-  
20 lished under paragraph (1) to the maximum extent  
21 practicable, consistent with applicable law.

22           “(3) 1-YEAR GOAL.—It shall be the goal of the  
23 Commission and the other applicable agencies to  
24 complete the pilot license process by not later than

1       1 year after the date on which the Commission re-  
2       ceives the completed application.

3       “(f) SIZE LIMITATIONS.—

4               “(1) IN GENERAL.—The Commission may grant  
5       a pilot license for a project located in the ocean if  
6       the project covers a surface area of not more than  
7       1 square nautical mile.

8               “(2) EXCEPTION.—The Commission, at the dis-  
9       cretion of the Commission and for good cause, may  
10      grant a pilot license for a project that covers a sur-  
11      face area of more than 1 square nautical mile.

12              “(3) LIMITATION.—For proposed projects lo-  
13      cated in an estuary, tidal area, river, lake, or  
14      stream, the Commission shall determine the size  
15      limit on a case-by-case basis, taking into account all  
16      relevant factors.

17              “(g) EXTENSIONS AUTHORIZED.—On application by  
18      a project, the Commission may make a 1-time extension  
19      of a pilot license for a term not to exceed 5 years.”.

20      **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

21              (a) *SHORT TITLE.*—*This Act may be cited as the “Ma-*  
22      *rine and Hydrokinetic Renewable Energy Act of 2014”.*

23              (b) *TABLE OF CONTENTS.*—*The table of contents of this*  
24      *Act is as follows:*

*Sec. 1. Short title; table of contents.*

*TITLE I—MARINE AND HYDROKINETIC RENEWABLE ENERGY  
TECHNOLOGIES*

*Sec. 101. Definition of marine and hydrokinetic renewable energy.*

*Sec. 102. Marine and hydrokinetic renewable energy research and development.*

*Sec. 103. National Marine Renewable Energy Research, Development, and Demonstration Centers.*

*Sec. 104. Authorization of appropriations.*

*TITLE II—MARINE AND HYDROKINETIC RENEWABLE ENERGY  
REGULATORY EFFICIENCY*

*Sec. 201. Marine and hydrokinetic renewable energy projects and facilities.*

1 **TITLE I—MARINE AND**  
2 **HYDROKINETIC RENEWABLE**  
3 **ENERGY TECHNOLOGIES**

4 **SEC. 101. DEFINITION OF MARINE AND HYDROKINETIC RE-**  
5 **NEWABLE ENERGY.**

6 *Section 632 of the Energy Independence and Security*  
7 *Act of 2007 (42 U.S.C. 17211) is amended in the matter*  
8 *preceding paragraph (1) by striking “electrical”.*

9 **SEC. 102. MARINE AND HYDROKINETIC RENEWABLE EN-**  
10 **ERGY RESEARCH AND DEVELOPMENT.**

11 *Section 633 of the Energy Independence and Security*  
12 *Act of 2007 (42 U.S.C. 17212) is amended to read as fol-*  
13 *lows:*

14 **“SEC. 633. MARINE AND HYDROKINETIC RENEWABLE EN-**  
15 **ERGY RESEARCH AND DEVELOPMENT.**

16 *“The Secretary, in consultation with the Secretary of*  
17 *the Interior, the Secretary of Commerce, and the Federal*  
18 *Energy Regulatory Commission, shall carry out a program*  
19 *of research, development, demonstration, and commercial*

1 *application to accelerate the introduction of marine and*  
2 *hydrokinetic renewable energy production into the United*  
3 *States energy supply, giving priority to fostering acceler-*  
4 *ated research, development, and commercialization of tech-*  
5 *nology, including programs—*

6           “(1) *to assist technology development to improve*  
7 *the components, processes, and systems used for power*  
8 *generation from marine and hydrokinetic renewable*  
9 *energy resources;*

10           “(2) *to establish critical testing infrastructure*  
11 *necessary—*

12                   “(A) *to cost effectively and efficiently test*  
13 *and prove marine and hydrokinetic renewable*  
14 *energy devices; and*

15                   “(B) *to accelerate the technological readi-*  
16 *ness and commercialization of those devices;*

17           “(3) *to support efforts to increase the efficiency*  
18 *of energy conversion, lower the cost, increase the use,*  
19 *improve the reliability, and demonstrate the applica-*  
20 *bility of marine and hydrokinetic renewable energy*  
21 *technologies by participating in demonstration*  
22 *projects;*

23           “(4) *to investigate variability issues and the effi-*  
24 *cient and reliable integration of marine and*  
25 *hydrokinetic renewable energy with the utility grid;*

1           “(5) to identify and study critical short- and  
2           long-term needs to create a sustainable marine and  
3           hydrokinetic renewable energy supply chain based in  
4           the United States;

5           “(6) to increase the reliability and survivability  
6           of marine and hydrokinetic renewable energy tech-  
7           nologies;

8           “(7) to verify the performance, reliability, main-  
9           tainability, and cost of new marine and hydrokinetic  
10          renewable energy device designs and system compo-  
11          nents in an operating environment;

12          “(8) to coordinate and avoid duplication of ac-  
13          tivities across programs of the Department and other  
14          applicable Federal agencies, including National Lab-  
15          oratories and to coordinate public-private collabora-  
16          tion in all programs under this section;

17          “(9) to identify opportunities for joint research  
18          and development programs and development of econo-  
19          mies of scale between—

20                 “(A) marine and hydrokinetic renewable en-  
21                 ergy technologies; and

22                 “(B) other renewable energy and fossil en-  
23                 ergy programs, offshore oil and gas production  
24                 activities, and activities of the Department of  
25                 Defense; and

1           “(10) to support in-water technology develop-  
 2           ment with international partners using existing coop-  
 3           erative procedures (including memoranda of under-  
 4           standing)—

5                     “(A) to allow cooperative funding and other  
 6           support of value to be exchanged and leveraged;  
 7           and

8                     “(B) to encourage the participation of  
 9           international research centers and companies  
 10          within the United States and the participation  
 11          of United States research centers and companies  
 12          in international projects.”.

13 **SEC. 103. NATIONAL MARINE RENEWABLE ENERGY RE-**  
 14                     **SEARCH, DEVELOPMENT, AND DEMONSTRA-**  
 15                     **TION CENTERS.**

16          Section 634 of the *Energy Independence and Security*  
 17          Act of 2007 (42 U.S.C. 17213) is amended by striking sub-  
 18          section (b) and inserting the following:

19                     “(b) *PURPOSES.*—A Center (in coordination with the  
 20          Department and National Laboratories) shall—

21                     “(1) advance research, development, demonstra-  
 22          tion, and commercial application of marine and  
 23          hydrokinetic renewable energy technologies;

1           “(2) support in-water testing and demonstration  
2 of marine and hydrokinetic renewable energy tech-  
3 nologies, including facilities capable of testing—

4                   “(A) marine and hydrokinetic renewable en-  
5 ergy systems of various technology readiness lev-  
6 els and scales;

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

9                   “(C) arrays of technology devices; and

10           “(3) serve as information clearinghouses for the  
11 marine and hydrokinetic renewable energy industry  
12 by collecting and disseminating information on best  
13 practices in all areas relating to developing and man-  
14 aging marine and hydrokinetic renewable energy re-  
15 sources and energy systems.”.

16 **SEC. 104. AUTHORIZATION OF APPROPRIATIONS.**

17           Section 636 of the Energy Independence and Security  
18 Act of 2007 (42 U.S.C. 17215) is amended by striking  
19 “2008 through 2012” and inserting “2015 through 2018”.

1 **TITLE II—MARINE AND**  
 2 **HYDROKINETIC RENEWABLE**  
 3 **ENERGY REGULATORY EFFI-**  
 4 **CIENCY**

5 **SEC. 201. MARINE AND HYDROKINETIC RENEWABLE EN-**  
 6 **ERGY PROJECTS AND FACILITIES.**

7 *Part I of the Federal Power Act (16 U.S.C. 792 et seq.)*  
 8 *is amended by adding at the end the following:*

9 **“SEC. 34. PILOT LICENSE FOR MARINE AND HYDROKINETIC**  
 10 **RENEWABLE ENERGY PROJECTS.**

11 *“(a) DEFINITION OF HYDROKINETIC PILOT*  
 12 *PROJECT.—*

13 *“(1) IN GENERAL.—In this section, the term*  
 14 *‘hydrokinetic pilot project’ means a facility that gen-*  
 15 *erates energy from—*

16 *“(A) waves, tides, or currents in an ocean,*  
 17 *estuary, or tidal area; or*

18 *“(B) free-flowing water in a river, lake, or*  
 19 *stream.*

20 *“(2) EXCLUSIONS.—The term ‘hydrokinetic pilot*  
 21 *project’ does not include a project that uses a dam or*  
 22 *other impoundment for electric power purposes.*

23 *“(b) PILOT LICENSES AUTHORIZED.—The Commis-*  
 24 *sion may issue a pilot license to construct, operate, and*

1 *maintain a hydrokinetic pilot project that meets the criteria*  
2 *listed in subsection (c).*

3 “(c) *LICENSE CRITERIA.—The Commission may issue*  
4 *a pilot license for a hydrokinetic pilot project if the*  
5 *project—*

6 “(1) *will have an installed capacity of not more*  
7 *than 10 megawatts;*

8 “(2) *is for a term of not more than 10 years;*

9 “(3) *will not cause a significant adverse environ-*  
10 *mental impact or interfere with navigation;*

11 “(4) *is removable and can shut down on reason-*  
12 *able notice in the event of a significant adverse safety,*  
13 *navigation, or environmental impact;*

14 “(5) *can be removed, and the site can be restored,*  
15 *by the end of the license term, unless the project has*  
16 *obtained a new license or the Commission has deter-*  
17 *mined, based on substantial evidence, that the project*  
18 *should not be removed because it would be preferable*  
19 *for environmental or other reasons not to; and*

20 “(6) *is primarily for the purpose of—*

21 “(A) *testing new hydrokinetic technologies,*  
22 *both single devices and in arrays of devices;*

23 “(B) *locating appropriate sites for new*  
24 *hydrokinetic technologies; or*

1           “(C) *determining the environmental and*  
2           *other effects of a hydrokinetic technology.*

3           “(d) *LEAD AGENCY.—In carrying out this section, the*  
4           *Commission shall act as the lead agency—*

5           “(1) *to coordinate all applicable Federal author-*  
6           *izations; and*

7           “(2) *to comply with the National Environmental*  
8           *Policy Act of 1969 (42 U.S.C. 4321 et seq.).*

9           “(e) *SCHEDULE GOALS.—*

10           “(1) *IN GENERAL.—Not later than 30 days after*  
11           *the date on which the Commission receives a com-*  
12           *pleted application, and following consultation with*  
13           *Federal, State, and local agencies with jurisdiction*  
14           *over the hydrokinetic pilot project, the Commission*  
15           *shall develop and issue pilot license approval process*  
16           *scheduling goals that cover all Federal, State, and*  
17           *local permits required by law.*

18           “(2) *COMPLIANCE.—Applicable Federal, State,*  
19           *and local agencies shall comply with the goals estab-*  
20           *lished under paragraph (1) to the maximum extent*  
21           *practicable, consistent with applicable law.*

22           “(3) *1-YEAR GOAL.—It shall be the goal of the*  
23           *Commission and the other applicable agencies to com-*  
24           *plete the pilot license process by not later than 1 year*

1       *after the date on which the Commission receives the*  
2       *completed application.*

3       “(f) *SIZE LIMITATION.*—*For proposed projects located*  
4       *in an estuary, tidal area, river, lake, or stream, the Com-*  
5       *mission shall determine the size limit on a case-by-case*  
6       *basis, taking into account all relevant factors.*

7       “(g) *EXTENSIONS AUTHORIZED.*—*On application by*  
8       *a project, the Commission may make a 1-time extension*  
9       *of a pilot license for a term not to exceed 5 years.”.*

Calendar No. 634

113<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

**S. 1419**

[Report No. 113-294]

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## **A BILL**

To promote research, development, and demonstration of marine and hydrokinetic renewable energy technologies, and for other purposes.

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DECEMBER 10, 2014

Reported with an amendment