

112TH CONGRESS  
1ST SESSION

# S. 629

To improve hydropower, and for other purposes.

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## IN THE SENATE OF THE UNITED STATES

MARCH 17, 2011

Ms. MURKOWSKI (for herself, Mr. BEGICH, Mr. BINGAMAN, Ms. CANTWELL, Mr. CRAPO, Mrs. MURRAY, Mr. RISCH, Mr. WHITEHOUSE, and Mr. WYDEN) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

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## A BILL

To improve hydropower, 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; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the  
5 “Hydropower Improvement Act of 2011”.

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

Sec. 1. Short title; table of contents.

Sec. 2. Findings.

Sec. 3. Definitions.

Sec. 4. Sense of the Senate on the use of hydropower renewable resources.

Sec. 5. Competitive grants for improvements for increased hydropower production.

Sec. 6. Plan for research, development, and demonstration to increase hydropower capacity.

- Sec. 7. Promoting hydropower development at nonpowered dams and closed loop pumped storage projects.
- Sec. 8. Promoting conduit hydropower projects and small hydroelectric power projects.
- Sec. 9. FERC authority to extend preliminary permit terms.
- Sec. 10. Study of non-Federal hydropower development at Bureau of Reclamation projects.
- Sec. 11. Study of potential hydropower from conduits.
- Sec. 12. Study of pumped storage.
- Sec. 13. Report on memorandum of understanding on hydropower.
- Sec. 14. Nonapplication to Federal Power Marketing Administrations.
- Sec. 15. Budgetary effects.

1 **SEC. 2. FINDINGS.**

2 Congress finds that—

3 (1) hydropower is the largest source of clean,  
4 renewable electricity in the United States;

5 (2) as of the date of enactment of this Act, hy-  
6 dropower resources, including pumped storage facili-  
7 ties, provide—

8 (A) nearly 7 percent of the electricity gen-  
9 erated in the United States, avoiding approxi-  
10 mately 200,000,000 metric tons of carbon emis-  
11 sions each year; and

12 (B) approximately 100,000 megawatts of  
13 electric capacity in the United States;

14 (3) only 3 percent of the 80,000 dams in the  
15 United States generate electricity so there is sub-  
16 stantial potential for adding hydropower generation  
17 to nonpower dams;

18 (4) in every State, a tremendous untapped  
19 growth potential exists in hydropower resources, in-  
20 cluding—

1 (A) efficiency improvements and capacity  
2 additions;

3 (B) adding generation to nonpower dams;

4 (C) conduit hydropower;

5 (D) conventional hydropower;

6 (E) pumped storage facilities; and

7 (F) new marine and hydrokinetic re-  
8 sources; and

9 (5) improvements in increased hydropower pro-  
10 duction in the United States have the potential—

11 (A) to increase the clean energy generation  
12 of the United States;

13 (B) to improve project performance and re-  
14 sult in better environmental outcomes; and

15 (C) to provide ancillary benefits that in-  
16 clude grid reliability, energy storage, and inte-  
17 gration services for variable renewable re-  
18 sources.

19 **SEC. 3. DEFINITIONS.**

20 In this Act:

21 (1) CONDUIT.—The term “conduit” means any  
22 tunnel, canal, pipeline, aqueduct, flume, ditch, or  
23 similar manmade water conveyance that is operated  
24 for the distribution of water for agricultural, munic-

1        ipal, or industrial consumption and not primarily for  
2        the generation of electricity.

3            (2) SECRETARY.—The term “Secretary” means  
4        the Secretary of Energy.

5            (3) SMALL HYDROELECTRIC POWER  
6        PROJECT.—The term “small hydroelectric power  
7        project” has the meaning given the term in section  
8        4.30 of title 18, Code of Federal Regulations.

9        **SEC. 4. SENSE OF THE SENATE ON THE USE OF HYDRO-**  
10        **POWER RENEWABLE RESOURCES.**

11        It is the sense of the Senate that the United States  
12        should increase substantially the capacity and generation  
13        of clean, renewable hydropower which will improve the en-  
14        vironmental quality of resources in the United States and  
15        support local job creation and economic investment across  
16        the United States.

17        **SEC. 5. COMPETITIVE GRANTS FOR IMPROVEMENTS FOR**  
18        **INCREASED HYDROPOWER PRODUCTION.**

19        (a) IN GENERAL.—As soon as practicable after the  
20        date of enactment of this Act, the Secretary shall establish  
21        in the Department of Energy a program under which the  
22        Secretary shall make competitive grants to eligible entities  
23        (including States and political subdivisions) that—

1           (1) in the case of a hydroelectric power gener-  
2           ating facility in existence on the date of enactment  
3           of this Act—

4                   (A) make efficiency improvements or ca-  
5                   pacity additions at the facility; or

6                   (B) address aging infrastructure at the fa-  
7                   cility;

8           (2) add hydropower generation to a nonpower  
9           dam in existence as of the date of enactment of this  
10          Act;

11          (3) develop hydroelectric generation within ex-  
12          isting conduits;

13          (4) develop and perform studies to meet appli-  
14          cable environmental requirements for increased hy-  
15          dropower production; or

16          (5) carry out necessary environmental mitiga-  
17          tion measures.

18          (b) ADMINISTRATION.—

19                  (1) IN GENERAL.—The Secretary shall establish  
20                  terms and conditions, including eligibility, for the re-  
21                  ceipt of grants under this section.

22                  (2) INCLUSIONS.—In carrying out this section,  
23                  the Secretary shall ensure that powerhouses and  
24                  projects that require new infrastructure are included

1 among the eligible entities that may receive grants  
2 under this section.

3 (c) COST SHARING.—The Secretary shall carry out  
4 the program under this section in compliance with sections  
5 988 and 989 of the Energy Policy Act of 2005 (42 U.S.C.  
6 16352, 16353).

7 (d) FUNDING.—From amounts made available under  
8 section 625(e) of the Energy Independence and Security  
9 Act of 2007 (42 U.S.C. 17204(e)), the Secretary may use  
10 to carry out this section \$50,000,000 for each of fiscal  
11 years 2012 through 2016, of which not more than 20 per-  
12 cent of the amount made available for a fiscal year may  
13 be used to carry out an individual project.

14 **SEC. 6. PLAN FOR RESEARCH, DEVELOPMENT, AND DEM-**  
15 **ONSTRATION TO INCREASE HYDROPOWER**  
16 **CAPACITY.**

17 (a) IN GENERAL.—Not later than 270 days after the  
18 date of enactment of this Act, the Secretary shall establish  
19 and implement a plan—

20 (1) to facilitate through research, development,  
21 and demonstration the increased use and generation  
22 of renewable hydropower; and

23 (2) to coordinate research and development on  
24 innovative technological advancements in hydropower

1 equipment, efficiency, and operations that can sub-  
2 stantially improve environmental quality.

3 (b) ADMINISTRATION.—The Secretary shall—

4 (1) review and update the plan on an annual  
5 basis; and

6 (2) report on progress made pursuant to the  
7 plan on an annual basis to the Committee of Energy  
8 and Natural Resources of the Senate and the Com-  
9 mittee on Energy and Commerce of the House of  
10 Representatives.

11 (c) TECHNICAL ASSISTANCE.—

12 (1) IN GENERAL.—As part of the plan estab-  
13 lished under this section, the Secretary shall provide  
14 technical assistance to applicants and licensees cov-  
15 ered by part I of the Federal Power Act (16 U.S.C.  
16 792 et seq.) to develop and perform environmental  
17 studies, or comply with applicable environmental re-  
18 quirements, to obtain or renew licenses for hydro-  
19 power projects.

20 (2) CONSULTATION.—The Secretary shall carry  
21 out this subsection in consultation with (as appro-  
22 priate)—

23 (A) the Secretary of the Interior;

24 (B) the Secretary of Commerce;

25 (C) the Secretary of Agriculture; and

1 (D) the Administrator of the Environ-  
2 mental Protection Agency.

3 (d) COORDINATION.—The Secretary shall coordinate,  
4 to the maximum extent practicable, activities under this  
5 section with other programs of the Department of Energy  
6 and other Federal research programs.

7 (e) FUNDING.—From amounts made available under  
8 section 812(g) of the Energy Policy Act of 2005 (42  
9 U.S.C. 16161(g)), the Secretary may use to carry out this  
10 section \$50,000,000 for each of fiscal years 2012 through  
11 2016.

12 **SEC. 7. PROMOTING HYDROPOWER DEVELOPMENT AT**  
13 **NONPOWERED DAMS AND CLOSED LOOP**  
14 **PUMPED STORAGE PROJECTS.**

15 (a) IN GENERAL.—To improve the regulatory process  
16 and reduce delays and costs for hydropower development  
17 at nonpowered dams and closed loop pumped storage  
18 projects, the Federal Energy Regulatory Commission (re-  
19 ferred to in this section as the “Commission”) shall inves-  
20 tigate the feasibility of the issuance of a license for certain  
21 hydropower development during the 2-year period begin-  
22 ning on the date of commencement of the prefiling licens-  
23 ing process of the Commission (referred to in this section  
24 as a “2-year process”).

1 (b) WORKSHOPS AND PILOTS.—The Commission  
2 shall—

3 (1) not later than 60 days after the date of en-  
4 actment of this Act, hold an initial workshop to so-  
5 licit public comment and recommendations on how  
6 to implement a 2-year process;

7 (2) develop criteria for identifying projects fea-  
8 turing hydropower development at nonpowered dams  
9 and closed loop pumped storage projects that may be  
10 appropriate for licensing within a 2-year process;

11 (3) not later than 180 days after the date of  
12 enactment of this Act, develop and implement pilot  
13 projects to test a 2-year process, if practicable; and

14 (4) not later than 3 years after the date of im-  
15 plementation of any pilot project to test a 2-year  
16 process, hold a final workshop to solicit public com-  
17 ment on the effectiveness of the pilot project.

18 (c) MEMORANDUM OF UNDERSTANDING.—The Com-  
19 mission shall, to the maximum extent practicable, enter  
20 into a memorandum of understanding with any applicable  
21 Federal or State agency to implement a pilot project de-  
22 scribed in subsection (b).

23 (d) REPORTS.—

24 (1) PILOT PROJECTS NOT IMPLEMENTED.—If  
25 the Commission determines that the pilot projects

1 described in subsection (b) are not practicable, not  
2 later than 240 days after the date of enactment of  
3 this Act, the Commission shall submit to the Com-  
4 mittee on Energy and Natural Resources of the Sen-  
5 ate and the Committee on Energy and Commerce of  
6 the House of Representatives a report that—

7 (A) describes the public comments received  
8 as part of the initial workshop held under sub-  
9 section (b)(1); and

10 (B) identifies the process, legal, environ-  
11 mental, economic, and other issues that justify  
12 the determination of the Commission that a 2-  
13 year process is not practicable, with rec-  
14 ommendations on how Congress may address or  
15 remedy the identified issues.

16 (2) PILOT PROJECTS IMPLEMENTED.—If the  
17 Commission develops and implements pilot projects  
18 involving a 2-year process described in subsection  
19 (b), not later than 60 days after the date of comple-  
20 tion of any final workshop held under subsection  
21 (b)(3), the Commission shall submit to the Com-  
22 mittee on Energy and Natural Resources of the Sen-  
23 ate and the Committee on Energy and Commerce of  
24 the House of Representatives a report that—

1 (A) describes the outcomes of the pilot  
2 projects;

3 (B) describes the public comments from  
4 the final workshop on the effectiveness of the  
5 pilot projects; and

6 (C)(i) outlines how the Commission will  
7 adopt policies under existing law (including reg-  
8 ulations) that result in a 2-year process;

9 (ii) outlines how the Commission will pro-  
10 ceed with a rulemaking to adopt a 2-year proc-  
11 ess in the regulations of the Commission; or

12 (iii) identifies the process, legal, environ-  
13 mental, economic, and other issues that justify  
14 the determination of the Commission that a 2-  
15 year process is not practicable, with rec-  
16 ommendations on how Congress may address or  
17 remedy the identified issues.

18 **SEC. 8. PROMOTING CONDUIT HYDROPOWER PROJECTS**  
19 **AND SMALL HYDROELECTRIC POWER**  
20 **PROJECTS.**

21 (a) CONDUIT HYDROPOWER PROJECTS.—

22 (1) IN GENERAL.—Section 30 of the Federal  
23 Power Act (16 U.S.C. 823a) is amended—

24 (A) in subsection (a), by striking para-  
25 graphs (1) and (2) and inserting the following:

1           “(1) is located on non-Federal lands or Federal  
2 lands; and

3           “(2) uses for the generation only the hydro-  
4 electric potential of a conduit.”;

5           (B) in subsection (c)—

6           (i) in the matter preceding paragraph  
7 (1), by striking “the United States” and  
8 all that follows through “and the State  
9 agency” and inserting “the Secretary of  
10 the department that supervises the land on  
11 which the facility is or will be located, the  
12 United States Fish and Wildlife Service,  
13 the National Marine Fisheries Service, and  
14 the State agency”; and

15           (ii) in paragraph (1), by striking “the  
16 Fish and Wildlife Service National Marine  
17 Fisheries Service” and inserting “the Sec-  
18 retary of the department that supervises  
19 the land on which the facility is or will be  
20 located, the United States Fish and Wild-  
21 life Service, the National Marine Fisheries  
22 Service,”; and

23           (C) by adding at the end the following:

1       “(f) SAVINGS CLAUSE.—Nothing in this section al-  
2 ters or affects the authority of the Secretary of the Inte-  
3 rior under the reclamation laws—

4               “(1) to authorize private hydropower develop-  
5 ment under a lease of power privilege; or

6               “(2) to develop other hydropower generation at  
7 facilities of the Bureau of Reclamation.

8       “(g) DEFINITION OF CONDUIT.—In this section, the  
9 term ‘conduit’ means any tunnel, canal, pipeline, aque-  
10 duct, flume, ditch, or similar manmade water conveyance  
11 that is operated for the distribution of water for agricul-  
12 tural, municipal, or industrial consumption and not pri-  
13 marily for the generation of electricity.”.

14               (2) MEMORANDUM OF UNDERSTANDING ON  
15 CONDUIT HYDROPOWER PROJECTS.—Not later than  
16 180 days after the date of enactment of this Act, the  
17 Federal Energy Regulatory Commission shall enter  
18 into a memorandum of understanding with relevant  
19 Federal agencies that have conditioning authority  
20 under section 30(c)(1) of the Federal Power Act (16  
21 U.S.C.823a(c)(1))—

22               (A) to establish a coordinated and more ef-  
23 ficient approach to any environmental impact  
24 statement or similar analysis required under the  
25 National Environmental Policy Act of 1969 (42

1 U.S.C. 4321 et seq.) relating to the consider-  
2 ation of conduit hydropower projects;

3 (B) to develop and carry out an expedited  
4 approval process for conduit hydropower  
5 projects, including using existing authority—

6 (i) to aggregate appropriate conduit  
7 projects for consideration in a consolidated  
8 license or exemption; and

9 (ii) to remove a conduit project from  
10 the aggregated projects if the removal is  
11 necessary to facilitate approval of the con-  
12 solidated license or exemption.

13 (3) PUBLIC WORKSHOPS AND PILOT PROJECTS  
14 ON CONDUIT HYDROPOWER PROJECTS.—

15 (A) IN GENERAL.—As soon as practicable  
16 after the date of enactment of this Act, the  
17 Commissioner of Reclamation and the Federal  
18 Energy Regulatory Commission shall conduct 3  
19 regional public workshops with relevant stake-  
20 holders, including water users and the environ-  
21 mental community, to identify ways in which  
22 the conduit approval process may be modified—

23 (i) to reduce barriers to conduit hy-  
24 dropower projects, including barriers cre-  
25 ated by project costs or the timeframe to

1 approve and maintain adequate environ-  
2 mental, health, and safety protections;

3 (ii) to develop pilot projects in con-  
4 junction with voluntary participants to  
5 demonstrate flexible and innovative ways  
6 to reduce barriers to conduit hydropower  
7 while maintaining adequate environmental,  
8 health, and safety protections; and

9 (iii) to develop a category of micro-  
10 hydropower conduit projects, such as  
11 projects involving municipal pressure re-  
12 duction valves and the pressurization of ex-  
13 isting irrigation conveyances, that may be  
14 approved through a simple application  
15 process while maintaining adequate envi-  
16 ronmental, health, and safety protections.

17 (B) REPORT.—Not later than 180 days  
18 after the date of completion of the regional  
19 workshops under subparagraph (A), the Com-  
20 missioner of Reclamation and the Federal En-  
21 ergy Regulatory Commission shall submit to the  
22 appropriate committees of Congress a report  
23 that describes any recommendations for the  
24 conduit approval process developed in the work-

1 shops and pilot projects described in subpara-  
2 graph (A).

3 (C) FUNDING.—From amounts made  
4 available under section 812(g) of the Energy  
5 Policy Act of 2005 (42 U.S.C. 16161(g)), the  
6 Commissioner of Reclamation and the Federal  
7 Energy Regulatory Commission may use to  
8 carry out pilot projects described in subpara-  
9 graph (A)(ii) \$5,000,000 for the period of fiscal  
10 years 2012 through 2016, to remain available  
11 until expended.

12 (b) SMALL HYDROELECTRIC POWER PROJECTS.—

13 (1) IN GENERAL.—As soon as practicable after  
14 the date of enactment of this Act, the Federal En-  
15 ergy Regulatory Commission shall conduct 3 re-  
16 gional public workshops with relevant stakeholders,  
17 including States and the environmental commu-  
18 nity—

19 (A) to reduce barriers for small hydro-  
20 electric power projects, including barriers cre-  
21 ated by project costs or the timeframe to ap-  
22 prove and maintain adequate environmental,  
23 health, and safety protections;

24 (B) to develop pilot projects in conjunction  
25 with voluntary participants to demonstrate

1 flexible and innovative ways to reduce barriers  
2 for small hydroelectric power projects while  
3 maintaining adequate environmental, health,  
4 and safety protections;

5 (C) to use existing authority—

6 (i) to aggregate appropriate small hy-  
7 droelectric power projects for consideration  
8 in a consolidated license or exemption; and

9 (ii) to remove a small hydroelectric  
10 power project from the aggregated projects  
11 if the removal is necessary to facilitate ap-  
12 proval of the consolidated license or exemp-  
13 tion; and

14 (D) to determine whether the rated capac-  
15 ity for small hydroelectric power projects estab-  
16 lished by the Commission should be increased  
17 from 5 electrical megawatts.

18 (2) REPORT.—Not later than 180 days after  
19 the date of completion of the workshops under para-  
20 graph (1), the Federal Energy Regulatory Commis-  
21 sion shall submit to the appropriate committees of  
22 Congress a report that describes any recommenda-  
23 tions developed in the workshops and pilot projects  
24 described in paragraph (1).

1           (3) FUNDING.—From amounts made available  
2           under section 812(g) of the Energy Policy Act of  
3           2005 (42 U.S.C. 16161(g)), the Federal Energy  
4           Regulatory Commission may use to carry out pilot  
5           projects described in paragraph (1)(B) \$5,000,000  
6           for the period of fiscal years 2012 through 2016, to  
7           remain available until expended.

8   **SEC. 9. FERC AUTHORITY TO EXTEND PRELIMINARY PER-**  
9                           **MIT TERMS.**

10          Section 5 of the Federal Power Act (16 U.S.C. 798)  
11          is amended—

12                 (1) by designating the first, second, and third  
13                 sentences as subsections (a), (c), and (d), respec-  
14                 tively; and

15                 (2) by inserting after subsection (a) (as so des-  
16                 ignated) the following:

17                 “(b) EXTENSION.—The Commission may extend the  
18                 term of a preliminary permit once for not more than 2  
19                 additional years if the Commission finds that the per-  
20                 mittee has carried out activities under the permit in good  
21                 faith and with reasonable diligence.”.

1 **SEC. 10. STUDY OF NON-FEDERAL HYDROPOWER DEVELOP-**  
2 **MENT AT BUREAU OF RECLAMATION**  
3 **PROJECTS.**

4 (a) STUDY OF NON-FEDERAL HYDROPOWER DEVEL-  
5 OPMENT AT BUREAU OF RECLAMATION PROJECTS.—Not  
6 later than 180 days after the date of enactment of this  
7 section, the Commissioner of Reclamation (in consultation  
8 with the Federal Energy Regulatory Commission, pref-  
9 erence power customers, water users, and other interested  
10 stakeholders) shall—

11 (1) conduct a study of barriers to non-Federal  
12 hydropower development at Bureau of Reclamation  
13 projects; and

14 (2) report to Congress the results of the study.

15 (b) MEMORANDUM OF UNDERSTANDING.—

16 (1) IN GENERAL.—Not later than 180 days  
17 after the date of enactment of this section, the Com-  
18 missioner of Reclamation and the Federal Energy  
19 Regulatory Commission shall develop and issue an  
20 interagency memorandum of understanding to im-  
21 prove the coordination and timeliness of the non-  
22 Federal development of hydropower resources at Bu-  
23 reau of Reclamation projects.

24 (2) CONTENT.—The memorandum of under-  
25 standing described in paragraph (1) shall identify—

1 (A) which agency has responsibility for  
2 permitting and licensing non-Federal develop-  
3 ment of hydropower at each Bureau of Rec-  
4 lamation project; and

5 (B) the process or procedure to be followed  
6 for non-Federal hydropower development, in-  
7 cluding conduit hydroelectric power, at each  
8 Bureau of Reclamation project.

9 (c) ADMINISTRATION.—Nothing in this section alters  
10 or affects the authority of the Secretary of the Interior  
11 under the reclamation laws—

12 (1) to authorize private hydropower develop-  
13 ment under a lease of power privilege; or

14 (2) to develop other hydropower generation at  
15 facilities of the Bureau of Reclamation.

16 **SEC. 11. STUDY OF POTENTIAL HYDROPOWER FROM CON-**  
17 **DUITS.**

18 (a) IN GENERAL.—The Secretary shall conduct a  
19 study of the potential quantity of hydropower that may  
20 be obtained from conduits in the United States.

21 (b) REPORT.—Not later than 1 year after the date  
22 of enactment of this Act, the Secretary shall submit to  
23 the Committee on Energy and Natural Resources of the  
24 Senate and the Committee on Energy and Commerce of  
25 the House of Representatives a report that describes the

1 results of the study conducted under subsection (a), in-  
2 cluding any recommendations.

3 **SEC. 12. STUDY OF PUMPED STORAGE.**

4 (a) IN GENERAL.—The Secretary, in coordination  
5 with the Director of the United States Geological Survey,  
6 shall conduct a study (including identification) of Federal  
7 and non-Federal land that is well-suited for pumped stor-  
8 age sites and is located near existing or potential sites of  
9 intermittent renewable resource development, such as  
10 wind farms.

11 (b) REPORT.—Not later than 1 year after the date  
12 of enactment of this Act, the Secretary shall submit to  
13 the Committee on Energy and Natural Resources of the  
14 Senate and the Committee on Energy and Commerce of  
15 the House of Representatives a report that describes the  
16 results of the study conducted under subsection (a), in-  
17 cluding any recommendations.

18 **SEC. 13. REPORT ON MEMORANDUM OF UNDERSTANDING**  
19 **ON HYDROPOWER.**

20 Not later than 180 days after the date of enactment  
21 of this Act, the President shall submit to the Committee  
22 on Energy and Natural Resources of the Senate and the  
23 Committee on Energy and Commerce of the House of  
24 Representatives a report on actions taken by the Depart-  
25 ment of Energy, the Department of the Interior, and the



1 Act, submitted for printing in the Congressional Record  
2 by the Chairman of the Senate Budget Committee, pro-  
3 vided that such statement has been submitted prior to the  
4 vote on passage.

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