

# Subcommittee on Water, Power and Oceans

Doug Lamborn, Chairman

Hearing Memorandum

March 31, 2017

To: All Subcommittee on Water, Power and Oceans Members

From: Majority Committee Staff  
Subcommittee on Water, Power and Oceans (x5-8331)

Hearing: Legislative hearing on a Discussion Draft of H.R. \_\_\_\_ (Rep. Doug Lamborn), To amend the Reclamation Project Act of 1939 to authorize pumped storage hydropower development utilizing multiple Bureau of Reclamation reservoirs. *“Bureau of Reclamation Pumped Storage Hydropower Development Act.”*  
**April 4, 2017 at 10:00 a.m. in 1324 Longworth HOB**

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## **Bill Summary:**

In order to stimulate non-federal pumped storage hydropower development in the seventeen western states, the Discussion Draft of H.R. \_\_\_\_ (Rep. Lamborn, R-CO) authorizes pumped storage hydropower at Bureau of Reclamation facilities.

## **Invited Witnesses:**

*Mr. Tim Culbertson*  
Secretary-Manager  
Columbia Basin Hydropower  
Ephrata, Washington

U.S. Department of the Interior  
Washington, DC

## **Background:**

### *Overview*

The arid western United States (West), once sparsely populated due in large part to scarce water supplies, is now home to more than 70 million people and is one of the most productive agricultural regions in the world. This transformation of the West primarily occurred due to the development of multi-purpose surface water projects that stored water in mainstem rivers and their tributaries. The Bureau of Reclamation (Reclamation), a federal agency created in 1902, played a pivotal role in developing and maintaining much of the water infrastructure in the West.

Many of Reclamation's projects are multi-purpose in nature, and its reservoirs and dams further generate enough emissions-free electricity to serve at least 3.5 million homes annually.<sup>1</sup> This is accomplished through the operation of 53 hydroelectric power plants that annually produce, on average, 40 billion kilowatt-hours over the last 10 years.<sup>2</sup> It would take approximately 23.5 million barrels of crude oil or 6.8 million tons of coal to produce an equal amount of electricity.<sup>3</sup> Nationally, hydropower accounts for almost 7% of domestic electricity generation, divided equally between federal and non-federal output.<sup>4</sup>

### *Pumped Storage*

Pumped storage hydropower facilities pump water stored at a lower reservoir to an upper reservoir during periods of low electricity demand. During periods of high electricity demand, water is released from the upper reservoir and run through turbines to produce electricity.<sup>5</sup> It not only provides power for baseload (full-time) needs and peak times, but also serves as a backup generation source for intermittent wind and solar power.<sup>6</sup>

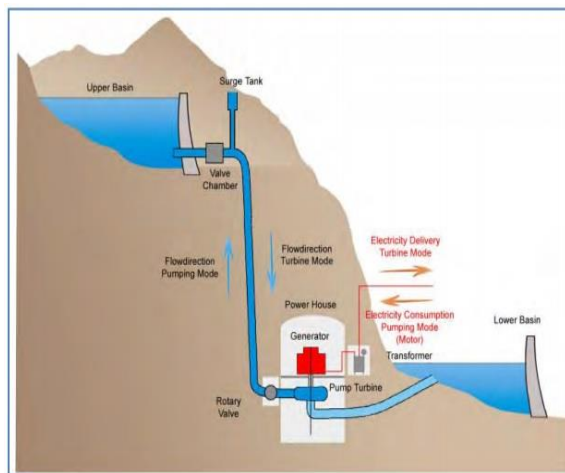


Figure 1 Typical Pumped Storage Facility. Source: Alstom Power

When Reclamation allows non-federal entities to produce hydropower at its facilities, it uses a “lease of power privilege” (LOPP) process. A LOPP is a contractual right given to a non-federal entity to use a Reclamation facility for electric power generation that is consistent with the project’s purposes.<sup>7</sup> As part of this arrangement, the entity pays a fee (commonly referred to as a “falling water charge”) to Reclamation for the use of the facilities and that fee is credited towards the capital repayment of the Reclamation facility. There are currently thirteen LOPP projects at Reclamation facilities: seven dams and six conduits with a combined capacity of nearly 46,000 kW.<sup>8</sup> According to Reclamation, the national potential for new pumped storage is 34,000 MW, although it would be far less at the agency’s facilities.<sup>9</sup>

<sup>1</sup> Id. note 1

<sup>2</sup> <http://www.usbr.gov/main/about/fact.html>

<sup>3</sup> Id. note 1

<sup>4</sup> Congressional Research Service, Relicensing of Nonfederal Hydroelectric Projects, April 25, 2007; Page 1

<sup>5</sup> National Hydropower Association, “Challenges and Opportunities for New Pumped Storage Development,”

[http://www.hydro.org/wp-content/uploads/2014/01/NHA\\_PumpedStorage\\_071212b12.pdf](http://www.hydro.org/wp-content/uploads/2014/01/NHA_PumpedStorage_071212b12.pdf)

<sup>6</sup> <http://www.vox.com/2015/6/19/8808545/wind-solar-grid-integration>

<sup>7</sup> <https://www.usbr.gov/power/LOPP/index.html>

<sup>8</sup> [https://www.usbr.gov/Power/LOPP/LOPP\\_Development\\_11-2016.xlsx](https://www.usbr.gov/Power/LOPP/LOPP_Development_11-2016.xlsx)

<sup>9</sup> <https://www.usbr.gov/power/video/index.html>

Even though the LOPP is used for Reclamation facilities that are authorized for hydropower development, there has been some historic inconsistency over what federal agency would manage hydropower development at Reclamation's facilities. In some cases, Reclamation has clear authority to develop hydropower at a specific project given its legislative history and authorized project purposes. In other cases, the Federal Energy Regulatory Commission (FERC) could have authority if the underlying project's authorization did not specifically include hydropower as a component. Congress cleared up some of this confusion when it passed and President Barack Obama signed the "*Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act*", which explicitly authorized hydropower development at Reclamation's canals and water pipelines (conduits).<sup>10</sup>

There is still some confusion over which agency would oversee pumped storage development at certain Reclamation facilities. As an example, some of Reclamation's water users have expressed a desire to work directly with Reclamation to develop pumped storage hydropower at the agency's facilities but have run into uncertainty.

One such entity is Columbia Basin Hydropower (CBHP), which is looking to develop a pumped storage hydropower project in Washington State rated up to 500 megawatts.<sup>11</sup> CBHP seeks to develop the Banks Lake North Dam Project (Project), located in central Washington State near the Grand Coulee Dam. The Project would utilize two existing Reclamation reservoirs: the Banks Lake upper reservoir and Franklin D. Roosevelt (Roosevelt Lake) lower reservoir.<sup>12</sup> Since April 2012, there has been uncertainty over which federal regulatory process should apply to the Project. CBHP wishes to pursue the LOPP process since the Project would be located on federal lands administered by the Reclamation and operated in coordination with Reclamation's Keys Pumping Plant and Grand Coulee. A CBHP witness will testify on this subject.

To help clarify this process and to bring about certainty, the discussion draft authorizes pumped storage hydropower development that utilizes multiple Reclamation reservoirs. This authorization is intended to make it clear that Reclamation would be the lead agency which would oversee pumped storage hydropower development at these facilities.

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<sup>10</sup> H.R. 678, 113<sup>th</sup> Congress: <https://www.gpo.gov/fdsys/pkg/BILLS-113hr678enr/pdf/BILLS-113hr678enr.pdf> H.R. 678 became P.L. 113-24 in the 113<sup>th</sup> Congress.

<sup>11</sup> [http://www.nwhydro.org/wp-content/uploads/events\\_committees/Docs/2016\\_Pumped\\_Storage\\_Workshop\\_Presentations/7%20-%20Tim%20Culbertson.pdf](http://www.nwhydro.org/wp-content/uploads/events_committees/Docs/2016_Pumped_Storage_Workshop_Presentations/7%20-%20Tim%20Culbertson.pdf)

<sup>12</sup> Id.

**Major Provisions of the Discussion Draft of H.R. \_\_\_\_ :**

*Section 2* amends the Reclamation Project Act of 1939 to authorize pumped storage hydropower development utilizing multiple Bureau of Reclamation reservoirs.

**Cost:**

The Congressional Budget Office has not completed a cost estimate of this draft bill at this time.

**Administration Position:**

Unknown.

**Effect on Current Law (Ramseyer):**

**Showing Existing Law As Amended by the Discussion Draft of the Bureau of Reclamation  
Pumped Storage Hydropower Development Act**

*[text to be added highlighted in blue]*

Reclamation Project Act of 1939 (43 U.S.C. 485h)

**§485h. New projects; sale of water and electric power; lease of power privileges**

**(a) Findings of Secretary**

No expenditures for the construction of any new project, new division of a project, or new supplemental works on a project shall be made, nor shall estimates be submitted therefor, by the Secretary until after he has made an investigation thereof and has submitted to the President and to the Congress his report and findings on-

- (1) the engineering feasibility of the proposed construction;
- (2) the estimated cost of the proposed construction;
- (3) the part of the estimated cost which can properly be allocated to irrigation and probably be repaid by the water users;
- (4) the part of the estimated cost which can properly be allocated to power and probably be returned to the United States in net power revenues;
- (5) the part of the estimated cost which can properly be allocated to municipal water supply or other miscellaneous purposes and probably be returned to the United States.

If the proposed construction is found by the Secretary to have engineering feasibility and if the repayable and returnable allocations to irrigation, power, and municipal water supply or other miscellaneous purposes found by the Secretary to be proper, together with any allocation to flood control or navigation made under subsection (b) of this section, equal the total estimated cost of construction as determined by the Secretary, then the new project, new division of a project, or supplemental works on a project, covered by his findings, shall be deemed authorized and may be undertaken by the Secretary. If all such allocations do not equal said total estimated cost, then

said new project, new division, or new supplemental works may be undertaken by the Secretary only after provision therefor has been made by Act of Congress enacted after the Secretary has submitted to the President and the Congress the report and findings involved.

**(b) Allocation of part of cost to flood control or navigation**

In connection with any new project, new division of a project, or supplemental works on a project there may be allocated to flood control or navigation the part of said total estimated cost which the Secretary may find to be proper. Items for any such allocations made in connection with projects which may be undertaken pursuant to subsection (a) of this section shall be included in the estimates of appropriations submitted by the Secretary for said projects, and funds for such portions of the projects shall not become available except as directly appropriated or allotted to the Department of the Interior. In connection with the making of such an allocation, the Secretary shall consult with the Chief of Engineers and the Secretary of the Army, and may perform any of the necessary investigations or studies under a cooperative agreement with the Secretary of the Army. In the event of such an allocation the Secretary of the Interior shall operate the project for purposes of flood control or navigation, to the extent justified by said allocation therefor.

**(c) Furnishing water to municipalities; sale of electric power; lease of power privileges**

(1) The Secretary is authorized to enter into contracts to furnish water for municipal water supply or miscellaneous purposes: *Provided*, That any such contract either (A) shall require repayment to the United States, over a period of not to exceed forty years from the year in which water is first delivered for the use of the contracting party, with interest not exceeding the rate of 3½ per centum per annum if the Secretary determines an interest charge to be proper, of an appropriate share as determined by the Secretary of that part of the construction costs allocated by him to municipal water supply or other miscellaneous purposes; or (B) shall be for such periods, not to exceed forty years, and at such rates as in the Secretary's judgment will produce revenues at least sufficient to cover an appropriate share of the annual operation and maintenance cost and an appropriate share of such fixed charges as the Secretary deems proper, and shall require the payment of said rates each year in advance of delivery of water for said year. Any sale of electric power or lease of power privileges, made by the Secretary in connection with the operation of any project or division of a project, shall be for such periods, not to exceed forty years, and at such rates as in his judgment will produce power revenues at least sufficient to cover an appropriate share of the annual operation and maintenance cost, interest on an appropriate share of the construction investment at not less than 3 per centum per annum, and such other fixed charges as the Secretary deems proper: *Provided further*, That in said sales or leases preference shall be given to municipalities and other public corporations or agencies; and also to cooperatives and other nonprofit organizations financed in whole or in part by loans made pursuant to the Rural Electrification Act of 1936 [7 U.S.C. 901 et seq.]. Nothing in this subsection shall be applicable to provisions in existing contracts, made pursuant to law, for the use of power and miscellaneous revenues of a project for the benefit of users of water from such project. The provisions of this subsection respecting the sales of electric power and leases of power privileges shall be an authorization in addition to and alternative to any authority in existing laws related to particular projects, including small conduit hydropower development and pumped storage hydropower development utilizing multiple Bureau of Reclamation reservoirs. No contract relating to municipal water supply or miscellaneous purposes or to electric power or

power privileges shall be made unless, in the judgment of the Secretary, it will not impair the efficiency of the project for irrigation purposes.

(2)(A) When carrying out this subsection, the Secretary shall first offer the lease of power privilege to an irrigation district or water users association operating the applicable transferred conduit, or to the irrigation district or water users association receiving water from the applicable reserved conduit. The Secretary shall determine a reasonable time frame for the irrigation district or water users association to accept or reject a lease of power privilege offer for a small conduit hydropower project.

(B) If the irrigation district or water users association elects not to accept<sup>1</sup> a lease of power privilege offer under subparagraph (A), the Secretary shall offer the lease of power privilege to other parties in accordance with this subsection.

(3) The Bureau of Reclamation shall apply its categorical exclusion process under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) to small conduit hydropower development under this subsection, excluding siting of associated transmission facilities on Federal lands.

(4) The Power Resources Office of the Bureau of Reclamation shall be the lead office of small conduit hydropower policy and procedure-setting activities conducted under this subsection.

(5) Nothing in this subsection shall obligate the Western Area Power Administration, the Bonneville Power Administration, or the Southwestern Power Administration to purchase or market any of the power produced by the facilities covered under this subsection and none of the costs associated with production or delivery of such power shall be assigned to project purposes for inclusion in project rates.

(6) Nothing in this subsection shall alter or impede the delivery and management of water by Bureau of Reclamation facilities, as water used for conduit hydropower generation shall be deemed incidental to use of water for the original project purposes. Lease of power privilege shall be made only when, in the judgment of the Secretary, the exercise of the lease will not be incompatible with the purposes of the project or division involved, nor shall it create any unmitigated financial or physical impacts to the project or division involved. The Secretary shall notify and consult with the irrigation district or water users association operating the transferred conduit before offering the lease of power privilege and shall prescribe terms and conditions that will adequately protect the planning, design, construction, operation, maintenance, and other interests of the United States and the project or division involved.

(7) Nothing in this subsection shall alter or affect any existing agreements for the development of conduit hydropower projects or disposition of revenues.

(8) Nothing in this subsection shall alter or affect any existing preliminary permit, license, or exemption issued by the Federal Energy Regulatory Commission under Part I of the Federal Power Act (16 U.S.C. 792 et seq.) or any project for which an application has been filed with the Federal Energy Regulatory Commission as of August 9, 2013.

(9) In this subsection:

(A) Conduit.-The term "conduit" means any Bureau of Reclamation tunnel, canal, pipeline, aqueduct, flume, ditch, or similar manmade water conveyance that is operated for the distribution of water for agricultural, municipal, or industrial consumption and not primarily for the generation of electricity.

(B) Irrigation district.-The term "irrigation district" means any irrigation, water conservation or conservancy, multicounty water conservation or conservancy district, or any separate public

entity composed of two or more such districts and jointly exercising powers of its member districts.

(C) Reserved conduit.-The term "reserved conduit" means any conduit that is included in project works the care, operation, and maintenance of which has been reserved by the Secretary, through the Commissioner of the Bureau of Reclamation.

(D) Transferred conduit.-The term "transferred conduit" means any conduit that is included in project works the care, operation, and maintenance of which has been transferred to a legally organized water users association or irrigation district.

(E) Small conduit hydropower.-The term "small conduit hydropower" means a facility capable of producing 5 megawatts or less of electric capacity.

**(d) Delivery of water for irrigation; repayment contract prerequisites**

No water may be delivered for irrigation of lands in connection with any new project, new division of a project, or supplemental works on a project until an organization, satisfactory in form and powers to the Secretary, has entered into a repayment contract with the United States, in a form satisfactory to the Secretary, providing among other things-

(1) That the Secretary may fix a development period for each irrigation block, if any, of not to exceed ten years from and including the first calendar year in which water is delivered for the lands in said block; and that during the development period water shall be delivered to the lands in the irrigation block involved at a charge per annum per acre-foot, or other charge, to be fixed by the Secretary each year and to be paid in advance of delivery of water: *Provided*, That where the lands included in an irrigation block are for the most part lands owned by the United States, the Secretary, prior to execution of a repayment contract, may fix a development period, but in such case execution of such a contract shall be a condition precedent to delivery of water after the close of the development period: *Provided further*, That when the Secretary, by contract or by notice given thereunder, shall have fixed a development period of less than ten years, and at any time thereafter but before commencement of the repayment period conditions arise which in the judgment of the Secretary would have justified the fixing of a longer period, he may amend such contract or notice to extend such development period to a date not to exceed ten years from its commencement, and in a case where no development period was provided, he may amend such contract within the same limits: *Provided further*, That when the Secretary shall have deferred the payment of all or any part of any installments of construction charges under any repayment contract pursuant to the authority of the Act of September 21, 1959 (73 Stat. 584), he may, at any time prior to the due date prescribed for the first installment not reduced by such deferment, and by agreement with the contracting organization, terminate the supplemental contract by which such deferment was effected, credit the construction payments made, and exercise the authority granted in this section. After the close of the development period, any such charges collected and which the Secretary determines to be in excess of the cost of the operation and maintenance during the development period shall be credited to the construction cost of the project in the manner determined by the Secretary.

(2) That the part of the construction costs allocated by the Secretary to irrigation shall be included in a general repayment obligation of the organization; and that the organization may vary its distribution of construction charges in a manner that takes into account the productivity of the various classes of lands and the benefits accruing to the lands by reason of the construction: *Provided*, That no distribution of construction charges over the lands

included in the organization shall in any manner be deemed to relieve the organization or any party or any land therein of the organization's general obligation to the United States.

(3) That the general repayment obligation of the organization shall be spread in annual installments, of the number and amounts fixed by the Secretary, over a period of not more than 40 years, exclusive of any development period fixed under paragraph (1) of this subsection, for any project contract unit or, if the project contract unit be divided into two or more irrigation blocks, for any such block, or as near to said period of not more than forty years as is consistent with the adoption and operation of a variable payment formula which, being based on full repayment within such period under average conditions, permits variance in the required annual payments in the light of economic factors pertinent to the ability of the organization to pay.

(4) That the first annual installment for any project contract unit, or for any irrigation block, as the case may be, shall accrue, on the date fixed by the Secretary, in the year after the last year of the development period or, if there be not development period, in the calendar year after the Secretary announces that the construction contemplated in the repayment contract is substantially completed or is advanced to a point where delivery of water can be made to substantially all of the lands in said unit or block to be irrigated; and if there be no development period fixed, that prior to and including the year in which the Secretary makes said announcement water shall be delivered only on the toll charge basis hereinbefore provided for development periods.

**(e) Contracts to furnish water**

In lieu of entering into a repayment contract pursuant to the provisions of subsection (d) of this section to cover that part of the cost of the construction of works connected with water supply and allocated to irrigation, the Secretary, in his discretion, may enter into either short- or long-term contracts to furnish water for irrigation purposes. Each such contract shall be for such period, not to exceed forty years, and at such rates as in the Secretary's judgment will produce revenues at least sufficient to cover an appropriate share of the annual operation and maintenance cost and an appropriate share of such fixed charges as the Secretary deems proper, due consideration being given to that part of the cost of construction of works connected with water supply and allocated to irrigation; and shall require payment of said rates each year in advance of delivery of water for said year. In the event such contracts are made for furnishing water for irrigation purposes, the costs of any irrigation water distribution works constructed by the United States in connection with the new project, new division of a project, or supplemental works on a project, shall be covered by a repayment contract entered into pursuant to said subsection (d).

**(f) Public participation**

No less than sixty days before entering into or amending any repayment contract or any contract for the delivery of irrigation water (except any contract for the delivery of surplus or interim irrigation water whose duration is for one year or less) the Secretary shall-

(1) publish notice of the proposed contract or amendment in newspapers of general circulation in the affected area and shall make reasonable efforts to otherwise notify interested parties which may be affected by such contract or amendment, together with information indicating to whom comments or inquiries concerning the proposed actions can be addressed; and

(2) provide an opportunity for submission of written data, views and arguments, and shall consider all substantive comments so received.