RECLAMATION

Managing Water in the West

Bureau of Reclamation Renewable Energy Update

Fiscal Year 2013, Q4

U.S. Department of the Interior
Bureau of Reclamation

December 2013

Contents

Page

Executive Summary **1**

Policy and Legislative Update **2**

Reclamation Renewable Energy Summary **4**

WaterSMART **6**

Great Plains Region **9**

Renewable Energy Summary 9
Project Updates 10

Lower Colorado Region **14**

Renewable Energy Summary 14
Project Updates 15

Mid-Pacific Region **16**

Renewable Energy Summary 16
Project Updates 17

Pacific Northwest Region **19**

Renewable Energy Summary 19
Project Updates 20

Upper Colorado Region **23**

Renewable Energy Summary 23
Project Updates 24

Appendix –Regional Renewable Energy Portfolios **26**

Executive Summary

The Bureau of Reclamation Energy Update identifies Federal and non-Federal renewable energy projects currently online or in development on Reclamation land, facilities, and water bodies. The update provides Reclamation-wide and regional summaries, renewable energy portfolios, and project updates as well as a listing of WaterSMART Grant projects that have a renewable energy component.

The quarterly update is a compilation of monthly updates submitted by regional offices, with input received from area offices. Reclamation personnel, including Steve Melavic, Rick Clayton, Robert Ross, Patrick Fischer, Jeffrey Ticknor, and Donald Bryce were instrumental in developing this document.

South Canal (Drop 1), Montrose County, CO. (Photo credit: Rick Clayton, Upper Colorado Region)

Through a Lease of Power Privilege (LOPP), the Uncompahgre Valley Water Users Association and the Delta-Montrose Electric Association partnered to develop hydropower facilities on South Canal Drop 1 and Drop 3. The Drop 1 facility came online June 3, 2013, and the Drop 3 facility came online August 1, 2013. Combined, the two facilities have an installed capacity of 7.5 megawatts and will generate approximately 26,900 megawatt-hours annually.

Policy and Legislative Update

Reclamation Sustainable Energy Strategy

To support future renewable energy projects, Reclamation released its Sustainable Energy Strategy (Strategy) on November 14, 2013. The Strategy creates a framework that will allow Reclamation to plan for future renewable power development, integration, and production in an environmentally and economically sound manner. The Strategy identifies six long-term strategic objectives to help guide Reclamation in this endeavor:

1. Increase renewable generation from Reclamation projects.
2. Facilitate non-Federal development of renewable energy projects.
3. Increase energy savings and conservation at Reclamation projects.
4. Support integration of variable non-dispatchable renewable resources in the United States electrical grid.
5. Increase benefits of renewable energy through technological innovation.
6. Improve management efficiencies related to the implementation of renewable energy and energy savings projects.

Operating within this framework, Reclamation is poised to play a critical role in achieving key Administrative and Departmental climate change and energy initiatives. The Strategy is available at http://www.usbr.gov/power/.

Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act (Pub. L. 113-24)

On August 9, 2013, H.R. 678, Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act (the Act) became Pub. L. 113-24. The Act amends Section 9(c) of the Reclamation Project Act of 1939 to authorize all Reclamation conduit facilities for Federal hydropower development and non-Federal hydropower development through a LOPP.

The Act also establishes LOPP process requirements in addition to those outlined in the existing LOPP Directive and Standard FAC 04-08, namely that LOPP be offered *first* to the irrigation district(s) or water users association(s) operating or receiving water from the Reclamation transferred or reserved conduit. The Act also codifies the existing National Environmental Policy Act (NEPA) categorical exclusion process established in the existing LOPP Directive and Standard. The Act does not alter or affect existing Federal Energy Regulatory Commission (FERC) permits, licenses, exemptions, or any pending license applications, as of

the date of enactment. These projects would remain within the FERC licensing/exemption process.

Currently, Reclamation is working with FERC to ensure a proper, consistent implementation of the Act across both agencies. Reclamation is also working to revise the FAC 04-08 Directive and Standard to comply with new process requirements set forth in Pub. L. 113-24. The revised Directive and Standard will be released for internal and external review when finished.

Fiscal Year (FY) 2013 Q4 Reclamation Renewable Energy Summary

Online Renewable Energy Projects

Hydropower				
Reclamation Owned and Operated	53	Plants	14,723	MW
Reclamation Owned and Operated by Others[1]	23	Plants	789	MW
Other Plants on Reclamation Facilities	7	Plants	85	MW
FERC Plants on Reclamation Facilities	50	Plants	460	MW
LOPP Plants[2]	8	Plants	27	MW
Total	**141**	**Plants**	**16,084**	**MW**

Other Renewables		
Solar		
Alamosa (UC, New Mexico)	10	kW
Grand Coulee Warehouse (PN, Washington)	5	kW
Boulder City Regional Office Building (LC, Nevada)	276	kW
Boulder City Regional Office Building (Parking) (LC, Nevada)	6	kW
Hoover Spillway House Renovation (LC, Nevada)	48	kW
Total	**345**	**kW**

In-Progress Renewable Energy Projects

Reclamation Hydropower		
Generator Rewinds/Uprates[3]	1	Plant
Turbine Refurbishments/Replacements[4]	5	Plants
Optimization[5]	0	Plants
Total	**6**	**Plants**

[1] Power from 5 of the 23 plants is marketed by the Western Area Power Administration (Western): Deer Creek, Towaoc, McPhee, O'Neill, and San Luis.
[2] Reclamation holds title to the Grand Valley Powerplant LOPP. South Canal Drop 1 and Drop 3 are recorded as two separate plants.
[3] A generator rewind is in progress at Folsom (G1). Generator rewinds were completed at Upper Molina (G1) and Lower Molina (G1) in May and June 2013, respectively.
[4] Turbine Refurbishments/Replacements projects are in progress at Estes (G3), Fremont Canyon (G1), Palisades (G4), Deer Creek (G2), and Glen Canyon (G4). A Turbine Refurbishment project was completed at Palisades (G1) in September 2013.
[5] In August 2013, the first standardized Hydro Optimization System, HydrOS, was brought online at Reclamation's Black Canyon Control Center in Idaho, which oversees operations at Black Canyon, Palisades, Minidoka, and Anderson Ranch plants. By optimization operations, the system will allow Black Canyon Control Center plants to collectively generate an additional 20,000,000 kWh annually – which equates to a 13,410-ton CO_2 offset. HydrOS will be installed at Elephant Butte during the first half of FY 2014 and the Glen Canyon Control Center during the second half of FY 2014.

FERC Licenses on Reclamation Facilities				
FERC Licenses	4	Plants	28	MW
FERC Exemptions	6	Plants	8	MW
FERC Preliminary Permits (Conventional)	21	Plants	62	MW
FERC Preliminary Permits (Pumped-storage)	11	Plants	8,827	MW
Total	**42**	**Plants**	**8,925**	**MW**

Lease of Power Privilege				
LOPP Contracts	2	Plants	9	MW
LOPP Preliminary Leases	4	Plants	21	MW
LOPP Posted Public Solicitations	1	Plant	0.3	MW
LOPP Requests for Development	8	Plants	25	MW
Total	**15**	**Plants**	**55**	**MW**

Other Renewables		
Wind		
Searchlight Wind Energy, LLC (LC, Arizona)	200	MW
Mohave Wind Farm (LC, Arizona)	500	MW
Total	**700**	**MW**
Solar		
San Luis Facility (MP, California)[6]	9-25	MW
Total	**9-25**	**MW**

Pilot Projects

Hydrokinetic Installation on Roza Canal (Hydro Volts)	7	kW
Hydrokinetic Installation on Roza Canal (Instream Energy)	10	kW
Low-head Technology Installation on Monroe Drop[7]	300	kW
Low-head Technology Installation on North Unit Irrigation Canal, Mile 45[8]	5,000	kW
Hydrodynamic Screw Technology Installation on South Canal, Drop 2[9]	850	kW
Total	**6,167**	**kW**

[6] Capacity is dependent upon the amount of land available to be leased.
[7] The Low-head Technology Installation on Monroe Drop has received a FERC Preliminary Permit and is included in the FERC Preliminary Permits (Conventional) statistic.
[8] The Low-head Technology Installation on North Unit Irrigation Canal, Mile 45, has received a FERC Exemption and is included in the FERC Exemptions statistic.
[9] Amendments to the existing South Canal LOPP contract may allow the Hydrodynamic Screw Technology Installation on South Canal, Drop 2, pilot project to proceed under the existing LOPP contract. The amendment has been drafted and reviewed by the Solicitor's Office. This pilot project is included in the LOPP Requests for Development statistic.

WaterSMART

Through WaterSMART Grants (formerly Challenge Grants), Reclamation provides 50/50 cost share funding to irrigation and water districts, tribes, states, and other entities with water or power delivery authority. Projects should seek to conserve and use water more efficiently, increase the use of renewable energy, protect endangered species, or facilitate water markets. Projects are selected through a competitive process and the focus is on projects that can be completed within 24 to 36 months that will help sustainable water supplies in the Western United States. The FY 2014 Funding Opportunity Announcement was posted on November 14, 2013, with applications due on January 23, 2014. Selections will be announced in June 2014 and grants awarded in September 2014. For additional information, visit www.usbr.gov/WaterSMART. FY 2011 – FY 2013 WaterSMART Grant projects that have a renewable energy component are listed below.

FY 2011

Recipient: Three Sisters Irrigation District
Capacity: 950 kW

The project is projected to generate 3.1 million kWh annually between April and October. Included is an additional 54" HDPE pipe that will eventually deliver up to 80 cubic feet per second of pressurized water to the 4,000 acres between Watson and McKenzie Reservoirs.

Recipient: Pershing County Water Conservancy District
Capacity: 750 kW

The Pershing County Water District will automate its gates, install solar-powered ultrasonic meters, and install 750 kW capacity hydropower turbines to generate renewable energy at the Rye Patch Dam. The hydropower turbines installed as part of this project are expected to generate 2,900-MWh of electricity annually.

Recipient: Boise Project Board of Control
Capacity: 839 kW

The Boise Project Board of Control will develop and 839-kW capacity powerplant at the "Fargo Drop," which will generate hydroelectric power that will be sold to the Idaho Power Company. The project will also include installation of a Supervisory Control and Data Acquisition system to improve regulation flows below the Fargo Drop diversion, in the Deer Flat Low Line Canal. The project is

expected to result in 3,218 acre-feet of water savings annually that will be transferred to irrigation users to improve reliability in water short years.

FY 2012

Recipient: Consolidated Irrigation Company
Capacity: 500 kW

The Consolidated Irrigation Company will convert six miles of unlined earthen canal with three and half miles of high-pressure pipe to address seepage and evaporation losses. In addition, advanced measuring devices are to be installed at each service connection. Annually, the completed project is expected to conserve 9,484 acre-feet of water. The project includes the installation of a 500-kW hydropower facility, utilizing pipeline drops feeding into the Glendale Reservoir outside Preston, Idaho.

Recipient: Sacramento Suburban Water District
Capacity: 200 kW

The Sacramento Suburban Water District will install a hydroelectric turbine in an existing transmission pipeline. The 200-kW installation will allow the District to generate electricity as deliveries are received from the Folsom Reservoir. The project also includes the installation of a new booster pump, which will allow the District to reverse the flow of water when necessary, providing banked groundwater to other agencies connected to the pipeline. Together, the improvements are expected to increase water management flexibility so that groundwater can be used more effectively during dry periods.

FY 2013

Recipient: Fremont Irrigation Company
Capacity: 2500 kW

The Fremont Irrigation Company in southern Utah will convert 5.8 miles of open ditch and earthen canals to enclosed pipe, an improvement that is expected to result in water savings of 5,352 acre-feet each year by avoiding seepage and evaporation losses. Water conserved as a result of the project will be used to meet the needs of water users during periods of shortage. The project also includes installation of a 2.5-MW capacity hydroplant, taking advantage of the piping improvements to generate renewable energy at the Highline Ditch diversion.

Recipient: Cub River Irrigation Company
Capacity: 456 kW

The Cub River Irrigation Company in northern Utah will convert 6.5 miles of open ditch canal to pipe to address seepage and evaporation losses; improvements expected to result in 2,800 acre-feet of water savings each year. Water conserved as a result of the project will be left in the Bear River and is expected to benefit the Bear River Migratory Bird Refuge downstream. The project also includes installation of a 456-kW capacity hydroplant to generate renewable energy once the pipeline is in place.

FY 2013 Q4 Great Plains Renewable Energy Summary

Online Renewable Energy Projects

Hydropower				
Reclamation Owned and Operated	21	Plants	1,008	MW
Reclamation Owned and Operated by Others	0	Plants	0	MW
Other Plants on Reclamation Facilities	0	Plants	0	MW
FERC Plants on Reclamation Facilities	7	Plants	29	MW
LOPP Plants	1	Plant	3	MW
Total	**29**	**Plants**	**1,040**	**MW**

Other Renewables				
Solar				
Total			**0**	**kW**

In-Progress Renewable Energy Projects

Reclamation Hydropower				
Generator Rewinds/Uprates	0	Plants		
Turbine Refurbishments/Replacements[10]	2	Plants		
Optimization	0	Plants		
Total	**2**	**Plants**		

FERC Licenses on Reclamation Facilities				
FERC Licenses	3	Plants	21	MW
FERC Exemptions	1	Plants	1	MW
FERC Preliminary Permits (Conventional)	6	Plants	18	MW
FERC Preliminary Permits (Pumped-storage)	3	Plants	2,132	MW
Total	**13**	**Plants**	**2,172**	**MW**

Lease of Power Privilege				
LOPP Contracts	0	Plants	0	MW
LOPP Preliminary Leases	2	Plants	7	MW
LOPP Posted Public Solicitations	0	Plant	0	MW
LOPP Requests for Development	2	Plants	14	MW
Total	**4**	**Plants**	**21**	**MW**

Other Renewables				
Wind				
Total			**0**	**MW**

[10] Turbine Refurbishments/Replacements projects are in progress at Estes (G3) and Fremont Canyon (G1).

Solar

Total	**0**	**MW**

Pilot Projects

Total	**0**	**kW**

FY 2013 Q4 Great Plains Project Updates

Federal Energy Regulatory Commission Projects

Project: A-Drop
Developer: Hydrodynamics, Inc.
Status: License (P-12549)

Article 301 of the Order Issuing Minor License for the A-Drop Hydroelectric Project, issued October 19, 2009, and extended by a FERC order issued February 25, 2013, required that construction of the A-Drop project begin October 19, 2013. Hydrodynamics, INC., failed to begin construction by the October 19, 2013 deadline. On October 24, 2013, FERC sent a letter to the licensee providing notice of "probable termination" of the A-Drop license on November 24, 2013 (30 days from the date of the letter).

Project: Clark Canyon
Developer: Clark Canyon Hydro, LLC
Status: License (P-12429)

A revised drawing package was submitted for Reclamation review on September 16, 2013. However, there are still several outstanding deliverables Reclamation will require prior to completing review, including: electrical drawings, HVAC drawings, control drawings, and designer of record approval. Reclamation provided formal comments on the package on October 28, 2013. FERC has indicated they will not begin their 60-day review of the revised package until Reclamation has completed their review and indicated they are willing to accept.

The Construction Operation and Maintenance Contract was originally transmitted to the Developer for signature on April 18, 2013. The Contract has been re-drafted and transmittal letter prepared for Front Office briefing upon resolution of

the Value Engineering (VE) proposals. Once Reclamation receives the revised package and verifies the required changes have been made a briefing will be scheduled to issue the Contract; this could occur as early as the week of November 11, 2013. Reclamation approved the draft bond form on August 21, 2013, subject to minor changes.

The Developer has hired RSCI out of Idaho as their prime contractor. Submittals unaffected by the VE proposals are in the process of being submitted and reviewed.

Reclamation has hired a Quality Assurance Inspector. The Inspector is currently reviewing project documentation and is prepared to mobilize whenever the developer has received Notice to Proceed.

Acceptance of the project and issuance of Notice to Proceed will require a completed and accepted design package and completion of the Contract. Mobilization could follow quickly thereafter as the site-use submittals have been reviewed and approved.

Project: Gibson Dam
Developer: Gibson Dam Hydroelectric Company, LLC
Status: License (P-12478)

FERC issued a license for Gibson Dam on January 12, 2012. On October 18, 2013, FERC granted the licensee a time extension to commence and complete construction to January 12, 2016, and January 12, 2019, respectively.

Project: Johnson Drop
Developer: Hydrodynamics, Inc.
Status: License Terminated (P-12545)

FERC issued the Johnson Drop license on July 17, 2009. On February 25, 2013, FERC issued an order granting the licensee a time extension – the deadline to commence construction was extended to July 17, 2013. On August 22, 2013, FERC issued an "Order Terminating License" due to the licensee's failure to commence construction by the established deadline.

Project: St. Mary Drops
Developer: Sorenson Engineering
Status: Application for Preliminary Permit Denied (P-14519)

On May 1, 2013, Ted P. Sorenson filed a preliminary permit application for the St. Mary Drops Hydroelectric Project. On October 11, 2013, FERC denied the application due to Pub. L. 113-24:

"Because the proposed St. Mary Drops Project would be located on a Reclamation canal and have an installed capacity of less than 5 MW, the Commission would be precluded from issuing an exemption or license for this project."

Project: Woods Drop
Developer: Hydrodynamics, Inc.
Status: License Terminated (P-12540)

FERC issued the Woods Drop license on June 23, 2009. The Licensee requested and was granted a two-year extension to begin construction – the deadline to commence construction was extended to June 23, 2013. On August 9, 2013, FERC issued an "Order Terminating License" due to the Licensee's failure to commence construction in accordance with the license.

Lease of Power Privilege Projects

Project: Carter Lake Outlet
Developer: Northern Water Conservancy District
Status: Online

Facility has generated over 6,300 megawatt-hours through August in calendar year 2013. Operators anticipate generation to end in early October due to low reservoir levels. Generation is to resume in December or January depending on when Flatiron Unit 3 begins pumping. Runner inspections are scheduled for November.

Project: Granby Dam
Developer: Northern Water Conservancy District
Status: Preliminary Lease

A special use permit for non-ground disturbing activities has been executed. Northern will be performing a topographic survey to determine powerhouse location and design. Revised preliminary layout drawings and "Basis of Design" memorandum were received and will be used to complete an internal scoping for NEPA activities.

Project: Pueblo Dam
Developer: Southeastern Colorado Water Conservancy District, Colorado Springs Utilities, and the Board of Water Works of Pueblo, Colorado
Status: Preliminary Release

Intergovernmental Agreement was executed on July 25, 2013. The Contributed Funds Act Agreement has been signed by all partners and resides with the Eastern Colorado Area Office Manager for signature. A meeting between Reclamation and partners was held on August 2, 2013, to discuss project status and next steps.

A request to extend the term of the Preliminary Permit by 6 months was received by Reclamation on August 15, 2013. In the letter of request, the Permit Holder indicated that they are now well positioned to move forward and the extension will provide the time necessary to complete the final LOPP application. Reclamation approved the request to extend the term of the Preliminary Permit through August 27, 2014. The amended Preliminary Permit is currently with the permit holder for signature.

In addition, the Permit Holder has submitted a Standard Form 299 application for a Special Use Permit to complete various surveying activities on site. In review of the application, Reclamation requested additional information regarding proposed geotechnical investigations. This information will be reviewed and approved before a Special Use Permit is issued. The Permit Holder is also preparing a request for a Categorical Exclusion. The request will include supporting information and will be submitted to Reclamation for review and consideration.

Project: Helena Valley Pumping Plant
Developer: Helena Valley Irrigation District
Status: Request for Development

On September 13, 2013, Reclamation received a LOPP request from the Helena Valley Irrigation District to develop the Helena Valley Pumping Plant. On October 11, 2013, FERC issued a determination of jurisdiction that placed the project under Reclamation LOPP authority. On December 2, 2013, a kick-off meeting was held with the District and developer to discuss the LOPP process and other outstanding issues. The District will not be submitting a proposal until it receives answers to availability of Pick-Sloan power, water availability and cost, and other contracting concerns.

FY 2013 Q4 Lower Colorado Renewable Energy Summary

Online Renewable Energy Projects

Hydropower				
Reclamation Owned and Operated	3	Plants	2,454	MW
Reclamation Owned and Operated by Others	10	Plants	297	MW
Other Plants on Reclamation Facilities	7	Plants	85	MW
FERC Plants on Reclamation Facilities	0	Plants	0	MW
LOPP Plants	0	Plant	0	MW
Total	**20**	**Plants**	**2,836**	**MW**

Other Renewables		
Solar		
Boulder City Regional Office Building (LC, Nevada)	276	kW
Boulder City Regional Office Building (Parking) (LC, Nevada)	6	kW
Hoover Spillway House Renovation (LC, Nevada)	48	kW
Total	**330**	**kW**

In-Progress Renewable Energy Projects

Reclamation Hydropower				
Generator Rewinds/Uprates	0	Plants		
Turbine Refurbishments/Replacements	0	Plants		
Optimization	0	Plants		
Total	**0**	**Plants**		

FERC Licenses on Reclamation Facilities				
FERC Licenses	0	Plants	0	MW
FERC Exemptions	0	Plants	0	MW
FERC Preliminary Permits (Conventional)	0	Plants	0	MW
FERC Preliminary Permits (Pumped-storage)	5	Plants	3,945	MW
Total	**5**	**Plants**	**3,945**	**MW**

Lease of Power Privilege				
LOPP Contracts	0	Plants	0	MW
LOPP Preliminary Leases	0	Plants	0	MW
LOPP Posted Public Solicitations	0	Plant	0	MW
LOPP Requests for Development	1	Plants	0.4	MW
Total	**1**	**Plants**	**0.4**	**MW**

Other Renewables		
Wind		
Searchlight Wind Energy, LLC (LC, Arizona)	200	MW
Mohave Wind Farm (LC, Arizona)	500	MW
Total	**700**	**MW**

Solar

Total	**0**	**MW**

Pilot Projects

Total	**0**	**kW**

FY 2013 Q4 Lower Colorado Project Updates

Solar Projects

Project: Hoover Spillway House Renovation
Developer: Boulder City Regional Office Building
Status: Online

Solar PV installation on the Hoover Dam Spillway House came online in August 2013. The total installation is rated at 48 kW. When not needed for building loads, the solar energy will be connected to the grid.

FY 2013 Q4 Mid-Pacific Renewable Energy Summary

Online Renewable Energy Projects

Hydropower				
Reclamation Owned and Operated	10	Plants	1,910	MW
Reclamation Owned and Operated by Others[11]	3	Plants	452	MW
Other Plants on Reclamation Facilities	0	Plants	0	MW
FERC Plants on Reclamation Facilities	13	Plants	60	MW
LOPP Plants	1	Plant	1	MW
Total	**27**	**Plants**	**2,423**	**MW**

Other Renewables				
Solar				
Total			**0**	**kW**

In-Progress Renewable Energy Projects

Reclamation Hydropower				
Generator Rewinds/Uprates[12]	1	Plants		
Turbine Refurbishments/Replacements	0	Plants		
Optimization	0	Plants		
Total	**1**	**Plants**		

FERC Licenses on Reclamation Facilities				
FERC Licenses	1	Plants	7	MW
FERC Exemptions	0	Plants	0	MW
FERC Preliminary Permits (Conventional)	0	Plants	0	MW
FERC Preliminary Permits (Pumped-storage)	1	Plants	1,250	MW
Total	**2**	**Plants**	**1,257**	**MW**

Lease of Power Privilege				
LOPP Contracts	1	Plants	2	MW
LOPP Preliminary Leases	0	Plants	0	MW
LOPP Posted Public Solicitations	0	Plant	0	MW
LOPP Requests for Development	0	Plants	0	MW
Total	**1**	**Plants**	**2**	**MW**

Other Renewables				
Wind				

[11] Power from 2 of the 3 plants is marketed by Western: O'Neill and San Luis.
[12] A generator rewind is in progress at Folsom (G1).

Total	**0**	**MW**
Solar		
San Luis Facility (MP, California)[13]	9-25	MW
Total	**9-25**	**MW**

Pilot Projects

Total	**0**	**kW**

FY 2013 Q4 Mid-Pacific Project Updates

Federal Energy Regulatory Commission Projects

Project: Friant Fishwater Release
Developer: Orange County Irrigation District
Status: License (P-11068)

The existing facilities at the Fishwater Release Project include a 30-foot-long by 24-foot-wide powerhouse containing a 510- kW generating unit. A 2006 Amendment Order authorized the construction of a new powerhouse, located approximately 100 feet northwest of the existing Fishwater Release Powerhouse, containing a single 1.8 megawatt turbine generating unit, thereby increasing the total installed capacity of the project from .51 MW to 2.31 MW. Instead of constructing the powerhouse as authorized in the 2006 amendment order, the Licensee requested a new Amendment Order, authorizing the construction of a new powerhouse (named the New River Outlet Powerhouse) containing a single turbine generating unit with an installed capacity of 7.0 MW. With the proposed change in powerhouse design, the total installed capacity of the project would increase from the currently authorized 2.31 MW to 7.51 MW.

A November 18, 2011, FERC order granted the amendment request. The amended project would take advantage of additional flow releases from Friant Dam, which are controlled by Reclamation, pursuant to the 2006 San Joaquin River Settlement Agreement. The Settlement Agreement requires significantly more discharge from the San Joaquin River than what was contemplated at the time the 2006 license amendment application was prepared and filed.

The Licensee requested and was granted a two-year extension to begin construction. The deadline to commence construction was extended to November 18, 2015.

[13] Capacity is dependent upon the amount of land available to be leased.

Project: Humboldt River Hydropower Project (Rye Patch)
Developer: Pershing County Water Conservation District
Status: Application for Original Minor License Filed (P-14327)

Application for Original Minor License was accepted for filing by FERC on September 20, 2013. The proposed project would utilize the existing Rye Patch dam, gates, and penstocks. The hydropower development would include: (1) a 16-foot by 16-foot powerhouse; (2) a single Kaplan turbine-generator at the end of one of the existing 48-inch-diameter steel penstocks with an installed capacity of 750 kilowatts; (3) a new 13.4-kilovolt transmission line; and (4) appurtenant facilities. The project would be operated in a run-of-release mode and would have an annual generation of 2,900.14 megawatt-hours.

The Humboldt River Hydropower Project received a WaterSMART grant in FY 2011.

Lease of Power Privilege Projects

Project: Lewiston Powerplant Replacement
Developer: Trinity Power Authority
Status: Lease Contract

The Trinity Public Utility District (TPUD) is replacing Reclamation's existing powerplant under a LOPP arrangement. Reclamation will continue to receive the 10-year average production of the plant (2,764 megawatt-hours) and TPUD will receive all generation above that amount plus the Renewable Energy Credits of the plant. The existing agreement has been modified and is being reviewed by all parties. Furlough has delayed this review.

FY 2013 Q4 Pacific Northwest Renewable Energy Summary

Online Renewable Energy Projects

Hydropower				
Reclamation Owned and Operated	10	Plants	7,537	MW
Reclamation Owned and Operated by Others	0	Plants	0	MW
Other Plants on Reclamation Facilities	0	Plants	0	MW
FERC Plants on Reclamation Facilities	25	Plants	321	MW
LOPP Plants	0	Plant	0	MW
Total	**35**	**Plants**	**7,858**	**MW**

Other Renewables		
Solar		
Grand Coulee Warehouse (PN, Washington)	5	kW
Total	**5**	**kW**

In-Progress Renewable Energy Projects

Reclamation Hydropower		
Generator Rewinds/Uprates	0	Plants
Turbine Refurbishments/Replacements[14]	1	Plant
Optimization	0	Plants
Total	**1**	**Plants**

FERC Licenses on Reclamation Facilities				
FERC Licenses	0	Plants	0	MW
FERC Exemptions	5	Plants	7	MW
FERC Preliminary Permits (Conventional)	15	Plants	44	MW
FERC Preliminary Permits (Pumped-storage)	1	Plants	1,000	MW
Total	**21**	**Plants**	**1,051**	**MW**

Lease of Power Privilege				
LOPP Contracts	0	Plants	0	MW
LOPP Preliminary Leases	0	Plants	0	MW
LOPP Posted Public Solicitations	0	Plant	0	MW
LOPP Requests for Development	0	Plants	0	MW
Total	**0**	**Plants**	**0**	**MW**

Other Renewables
Wind

[14] A Turbine Refurbishment/Replacements project is in progress at Palisades (G4). A Turbine Refurbishment project was completed at Palisades (G1) in September 2013.

Total	**0**	**MW**

Solar

Total	**0**	**MW**

Pilot Projects

Hydrokinetic Installation on Roza Canal (Hydro Volts)	7	kW
Hydrokinetic Installation on Roza Canal (Instream Energy)	10	kW
Low-head Technology Installation on Monroe Drop[15]	300	kW
Low-head Technology Installation on North Unit Irrigation Canal, Mile 45[16]	5,000	kW
Total	**5,317**	**kW**

FY 2013 Q4 Pacific Northwest Project Updates

Federal Energy Regulatory Commission Projects

Project: Easton Diversion Dam Hydroelectric Project
Developer: Qualified Hydro 25, LLC
Status: Preliminary Permit Surrendered (P-13850)

Qualified Hydro 25, LLC, permittee for the proposed Easton Diversion Dam Hydroelectric Project has requested that the preliminary permit be terminated. The permit was issued on May 10, 2011, and would have expired on April 30, 2014.

Project: McKay Dam Hydroelectric Project
Developer: Houtama Hydropower, LLC
Status: Application for Preliminary Permit Accepted for Filing (P-14546)

On August 14, 2013, Houtama Hydropower, LLC, filed an application for a preliminary permit, pursuant to section 4(f) of the Federal Power Act (FPA), proposing to study the feasibility of the McKay Dam Hydroelectric Project (Project) to be located at McKay Dam near Pendleton in Umatilla County, Oregon.

[15] The Low-head Technology Installation on Monroe Drop has received a FERC Preliminary Permit and is included in the FERC Preliminary Permits (Conventional) statistic.
[16] The Low-head Technology Installation on North Unit Irrigation Canal, Mile 45, has received a FERC Exemption and is included in the FERC Exemptions statistic.

The proposed Project would utilize flows at the existing McKay Reservoir, and would consist of the following new features: (1) a 48-inch diameter, 60-foot-long steel penstock that extends from the existing dam penstock to a powerhouse; (2) a 20-foot by 30-foot powerhouse; (3) a single 2.3-megawatt turbine/generator; (4) a switchyard with a 69-kilovolt step-up transformer; (5) an approximately 3,000-foot-long, 69-kilovolt transmission line interconnecting to the Pacific Power distribution system; and (6) appurtenant facilities. The estimated annual generation of the project would be 5 gigawatt-hours.

Project: Banks Lake Pumped Storage
Developer: Grand Coulee Project Hydroelectric Authority
Status: Preliminary Permit (P-14329)

On November 30, 2011, the Grand Coulee Project Hydroelectric Authority filed an application for a preliminary permit, pursuant to section 4(f) of the FPA, to study the feasibility of the proposed Banks Lake Pumped Storage Project No. 14329 to be located on Banks Lake and Franklin D. Roosevelt Lake, near the town of Grand Coulee, Douglas and Grant Counties, Washington. The project would be located on Federal lands administered by Reclamation.

On August 22, 2013, FERC granted the project a preliminary permit, noting: "If the (Grand Coulee Project Hydroelectric Authority) files a license application, because Roosevelt Lake and Banks Lake are Reclamation facilities, they will not be included within the project boundary." As a result, Reclamation may receive a LOPP request from the Authority.

Project: Deadwood Dam
Developer: Sorenson Engineering
Status: Application for Preliminary Permit Dismissed (P-14517)

On April 26, 2013, Sorenson Engineering, Inc., (Sorenson) filed a preliminary permit to study the feasibility of an 8-megawatt Deadwood Dam Hydroelectric Project located within the Boise National Forest, at the existing Reclamation Deadwood Dam, in Valley County, Idaho.

On August 26, 2013, Commission staff issued a deficiency and additional information request because the application did not include the names of any Indian tribes that may be affected by the project; the dimensions, composition, age, and condition of the proposed penstock; the location, length, voltage, and possible interconnections and routes of the proposed transmission line; the generator rating for each unit; the hydraulic head for the project; the location of Federal lands in relation to project facilities, the required land description form (FERC Form 587), and a map showing all project facilities; the location and ownership of private land within the project area; the presence of irrigation districts, drainage districts, or similar political subdivision located within the project area; and an accurate Township and Range description. On September 23,

2013, Sorenson filed their responses. On October 1, 2013, Commission staff issued a follow-up deficiency letter and additional information request since Sorenson's filing on September 23 did not provide the specific location of Federal lands within the project boundary; the required FERC Form 587; and the location of specific project facilities in relation to the project boundary, Reclamation and National Forest System lands, and private land. The October 1, 2013, letter set a 30-day response date for the deficiency.

The deficiency had not been filed within the 30-day response deadline, causing the Commission to dismiss the permit application on November 8, 2013.

Project: Pinto Dam
Developer: Grand Coulee Project Hydroelectric Authority
Status: Preliminary Permit (P-14380)

On April 4, 2012, Grand Coulee Project Hydroelectric Authority filed an application for a preliminary permit, pursuant to section 4(f) of the FPA, to study the feasibility of the proposed Pinto Dam Hydroelectric Project at Pinto Dam, on Billy Clapp Lake near the City of Moses Lake in Grant County, Washington. The project received a preliminary permit on October 10, 2012.

The proposed project would use the existing Pinto Dam, and would consist of the following new facilities: (1) a 72-inch-diameter penstock connecting the existing Pinto Dam outlet tunnel to a powerhouse located immediately downstream of the dam; (2) a powerhouse containing a 3.4-megawatt Francis turbine/generator unit; (3) a tailrace, discharging flows into the existing feed route between Billy Clapp Lake and Brook Lake; (4) a 7,000-foot-long, 34.5-kilovolt transmission line extending from the project to a 34.5-kilovolt transmission line owned by the Public Utility District No. 1 of Grant County, Washington; and (5) appurtenant facilities. The estimated annual generation of the Pinto Dam Project would be 8.1 gigawatt-hours. The project would utilize approximately 12 acres of land administered by Reclamation.

Pilot Projects

Project: Hydrokinetic Installation on Roza Canal (Instream Energy)
Developer: Instream Energy
Status: Installed

Testing occurred in August –September to predict the possible effects on the hydrodynamic environment of an operating Instream Energy Systems hydrokinetic turbine. Instream tested impacts to the open channel hydraulics of the canal as well as impacts to the existing power plant (Roza).

FY 2013 Q4 Upper Colorado Renewable Energy Summary

Online Renewable Energy Projects

Hydropower				
Reclamation Owned and Operated	9	Plants	1,814	MW
Reclamation Owned and Operated by Others[17]	10	Plants	40	MW
Other Plants on Reclamation Facilities	0	Plants	0	MW
FERC Plants on Reclamation Facilities	5	Plants	50	MW
LOPP Plants[18]	6	Plant	24	MW
Total	**30**	**Plants**	**1,928**	**MW**

Other Renewables		
Solar		
Alamosa (UC, New Mexico)	10	kW
Total	**10**	**kW**

In-Progress Renewable Energy Projects

Reclamation Hydropower		
Generator Rewinds/Uprates[19]	0	Plants
Turbine Refurbishments/Replacements[20]	2	Plants
Optimization	0	Plants
Total	**2**	**Plants**

FERC Licenses on Reclamation Facilities				
FERC Licenses	0	Plants	0	MW
FERC Exemptions	0	Plants	0	MW
FERC Preliminary Permits (Conventional)	0	Plants	0	MW
FERC Preliminary Permits (Pumped-storage)	1	Plants	500	MW
Total	**1**	**Plants**	**500**	**MW**

Lease of Power Privilege				
LOPP Contracts	1	Plants	7	MW
LOPP Preliminary Leases	2	Plants	14	MW
LOPP Posted Public Solicitations	1	Plant	0.3	MW
LOPP Requests for Development	5	Plants	11	MW
Total	**9**	**Plants**	**32.3**	**MW**

[17] Power from 5 of the 23 plants is marketed by Western: Deer Creek, Towaoc, McPhee, O'Neill, and San Luis.
[18] Reclamation holds title to the Grand Valley Powerplant LOPP. South Canal (Drop 1) and South Canal (Drop 3) are recorded as two separate plants.
[19] A generator rewind is in progress at Folsom (G1). Generator rewinds were completed at Upper Molina (G1) and Lower Molina (G1) in May and July 2013, respectively.
[20] Turbine Refurbishments/Replacements projects are in progress at Estes (G3), Fremont Canyon (G1), Palisades (G4), Deer Creek (G2), and Glen Canyon (G4). A Turbine Refurbishment project was completed at Palisades (G1) in September 2013.

Other Renewables		
Wind		
Total	**0**	**MW**
Solar		
Total	**0**	**MW**

Pilot Projects

Hydrodynamic Screw Technology Installation on South Canal, Drop 2[21]	850	kW
Total	**850**	**kW**

FY 2013 Q4 Upper Colorado Project Updates

Lease of Power Privilege Projects

Project: San Juan Chama Project
Developer: N/A
Status: Posted Public Solicitation

A notice of intent to accept proposals, select lessee, and contract for hydroelectric power development on the Reclamation San Juan-Chama Project was posted to the Federal Register on August 7, 2013. Written proposals are due January 6, 2014 (150 days removed from the posting). Following the January 6 due date, a Reclamation selection team will award the preliminary lease within 30 days.

The Public Solicitation applies to four conduit drops along the project – the Azotea Tunnel Outlet Drop and Station 1565+00, 1702+75, and 1831+17 Drops.

Project: Shavano Falls
Developer: Uncompahgre Valley Water Users Association
Status: Request for Development

On August 21, 2013, Reclamation received a request from the Uncompahgre Valley Water Users Association (UVWUA) to develop hydropower on the

[21] Amendments to the existing South Canal LOPP contract may allow the Hydrodynamic Screw Technology Installation on South Canal, Drop 2, pilot project to proceed under the existing LOPP contract. The amendment has been drafted and reviewed by the Solicitor's Office. This pilot project is included in the LOPP Requests for Development statistic.

Shavano Falls conduit drop site. Pursuant to Pub. L. 113-24, Reclamation responded by letter from the Regional Director requesting proposal information (as described in the LOPP Directive and Standard, FAC 04-08). UVWUA provided the information requested on October 14, 2013.

Reclamation is now in the process of reviewing the information to determine if it is sufficient to issue a Preliminary Lease to UVWUA.

Project: South Canal (Drops 1 and 3)
Developer: Uncompahgre Valley Water Users Association
Status: Online

Commercial operations commenced June 3, 2013, for Drop 1 and August 1, 2013, for Drop 3. Combined, the average annual generation for the two drops is estimated at 26.9 gigawatt-hours.

Project: South Canal (Drop 4)
Developer: Uncompahgre Valley Water Users Association
Status: Request for Development

Reclamation received a request from UVWUA to develop hydropower on a conduit drop site at Drop 4 on the South Canal. This letter was received in August 21, 2013. Pursuant to the new legislation for conduit hydropower development Pub. L. 113-24, Reclamation responded by letter from the Regional Director requesting the information described in the LOPP Directive and Standard that normally is included in a LOPP proposal.

Project: South Canal (Drop 5)
Developer: Uncompahgre Valley Water Users Association
Status: Request for Development

Reclamation received a request from UVWUA to develop hydropower on a conduit drop site named Drop 5 on the South Canal. This letter was received in August 21, 2013. Pursuant to the new legislation for conduit hydropower development Pub. L. 113-24, Reclamation responded by letter from the Regional Director requesting the information described in the LOPP Directive and Standard that normally is included in a LOPP proposal.

Appendix – Regional Renewable Energy Portfolios

Great Plains Renewable Portfolio

State	Project Status	Project Name	FERC ID	Area Office	Operating Entity	Hydropower Type	Capacity (kW)	Project Initiation Date	Preliminary Permit or Lease Date	Exemption or CE Date	License or Lease Date	Online Date
RECLAMATION OWNED AND OPERATED												
WY	Online	Alcova		Wyoming	USBR	Conventional	41,400.00					1955
CO	Online	Big Thompson		Eastern Colorado	USBR	Conventional	4,500.00					1959
WY	Online	Boysen		Wyoming	USBR	Conventional	15,000.00					1952
WY	Online	Buffalo Bill		Wyoming	USBR	Conventional	18,000.00					1992
MT	Online	Canyon Ferry		Montana	USBR	Conventional	50,001.00					1953
CO	Online	Estes		Eastern Colorado	USBR	Conventional	45,000.00					1950
CO	Online	Flatiron (Unit 1, 2, 3)		Eastern Colorado	USBR	Conventional/Pump Storage	98,500.00					1954
WY	Online	Fremont Canyon		Wyoming	USBR	Conventional	66,800.00					1960
WY	Online	Glendo		Wyoming	USBR	Conventional	38,000.00					1959
CO	Online	Green Mountain		Eastern Colorado	USBR	Conventional	26,000.00					1943
WY	Online	Guernsey		Wyoming	USBR	Conventional	6,400.00					1928
WY	Online	Heart Mountain		Wyoming	USBR	Conventional	5,000.00					1948
WY	Online	Kortes		Wyoming	USBR	Conventional	36,000.00					1950
CO	Online	Marys Lake		Eastern Colorado	USBR	Conventional	8,100.00					1951
CO	Online	Mt. Elbert PS		Eastern Colorado	USBR	Pump Storage	200,000.00					1981
WY	Online	Pilot Butte		Wyoming	USBR	Conventional	1,600.00					1929
CO	Online	Pole Hill		Eastern Colorado	USBR	Conventional	38,238.00					1954
WY	Online	Seminoe		Wyoming	USBR	Conventional	51,750.00					1939
WY	Online	Shoshone		Wyoming	USBR	Conventional	3,000.00					1992
WY	Online	Spirit Mountain		Wyoming	USBR	Conventional	4,500.00					1994
MT	Online	Yellowtail		Montana	USBR	Conventional	250,000.00					1966
FEDERAL ENERGY REGULATORY COMMISSION PROJECTS												
WY	Online	Garland Canal	3031	Wyoming	Shoshone I.D.	Conventional	2,610.00				10/9/1981	1980
MT	Online	Lower Turnbull Drop	12597	Montana	Turnbull Hydro, LLC	Conventional	7,700.00	6/21/2005			7/28/2006	6/22/2011
OK	Online	McGee Creek Dam	8492	Oklahoma Texas	McGee Creek Authority	Conventional	175.00	7/26/1984	3/14/1985		6/23/1986	1980
CO	Online	Ruedi Dam	3603	Western Colorado	City of Aspen	Conventional	3,200.00				9/8/1983	1980
CO	Online	Sugarloaf Dam	3819	Eastern Colorado	STS Hydropower Ltd.	Conventional	2,800.00				11/18/1982	1980
MO	Online	Tiber Dam	3574	Montana	Tiber Montana LLC	Conventional	7,500.00		11/20/1990		6/2/1997	6/14/2004
MT	Online	Upper Turnbull Drop	12598	Montana	Turnbull Hydro, LLC	Conventional	5,300.00	6/24/2005			7/28/2006	6/24/2011
MT	License	A Drop	12549	Montana	Hydrodynamics, Inc.	Conventional	1,000.00	9/19/2004	4/1/2005		10/19/2009	
MT	License	Clark Canyon Dam	12429	Montana	Clark Canyon Hydro, LLC	Conventional	4,700.00	1/1/2003	8/15/2003		8/26/2009	
MT	License	Gibson Dam	12478	Montana	Gibson Dam Hydroelectric Company, LLC.	Conventional	15,000.00	10/28/2003	4/20/2004		1/12/2012	
MT	Exemption	Mary Taylor Drop	14294	Montana	Turnbull Hydro, LLC	Conventional	890.00	9/23/2011		6/28/2012		
WY	Preliminary	Deer Creek Drop	14370	Wyoming	Willwood Irrigation District	Conventional	780.00	3/6/2012	9/19/2012			
MT	Preliminary	Fresno Dam	13474	Montana	Hydrodynamics, Inc.	Conventional	2,000.00	5/21/2009	12/7/2009			
NE	Preliminary	Medicine Creek Dam	13648	Nebraska-Kansas	Twin Valleys Public Power District	Conventional	800.00	12/30/2009	6/15/2010			
MT	Preliminary	Mill Coulee	13700	Montana	Hydrodynamics, Inc.	Conventional	900.00	4/5/2010	11/30/2010			
MT	Preliminary	Sun River Diversion Dam	13161	Montana	Hydrodynamics, Inc.	Conventional	12,000.00	3/31/2008	10/28/2008			
WY	Preliminary	Willwood Diversion Dam	13423	Wyoming	Willwood Irrigation District	Conventional	2,000.00	4/6/2009	7/7/2009			
WY	Preliminary	Black Canyon Pumped Storage Project	14087	Wyoming	Black Canyon Hydro, LLC	Pump Storage	700,000.00	1/25/2011	7/15/2011			
WY	Preliminary	Medicine Bow Pumped Storage	13836	Wyoming	Medicine Bow Hydro, LLC	Pump Storage	400,000.00	8/30/2010	12/3/2010			
MT	Preliminary	Square Butte Pumped Storage	13349	Montana	Square Butte Hydro LLC	Pump Storage	1,032,000.00	12/23/2008	7/23/2012			
LEASE OF POWER PRIVILEGE PROJECTS												
CO	Online	Carter Lake Outlet		Eastern Colorado	Northern Water Conservancy District	Conventional	2,600.00	5/7/2009	11/24/2009		4/22/2011	5/18/2012
CO	Preliminary	Granby Dam	LP11-3	Eastern Colorado	Northern Water Conservancy District	Conventional	700.00	4/20/2011	6/26/2012			
CO	Preliminary	Pueblo Dam	LP11-4	Eastern Colorado	Southeastern Colorado Water Conservancy District, Colorado Springs Utilities, and Board of Water Works of Pueblo, Colorado	Conventional	5,800.00	4/20/2011	2/27/2012			
MT	Request for Development	Helena Valley Pumping Plant		Montana	Helena Valley Irrigation District	Conventional	4,800.00	9/13/2013				
MT	Request for Development	Yellowtail Afterbay		Montana	Crow Tribe	Conventional	9,000.00	1/11/2012				

Lower Colorado Renewable Portfolio

State	Project Status	Project Name	FERC ID	Area Office	Operating Entity	Hydropower Type	Capacity (kW)	Project Initiation Date	Preliminary Permit or Lease Date	Exemption or CE Date	License or Lease Date	Online
RECLAMATION OWNED AND OPERATED												
AZ	Online	Davis		Yuma	USBR	Conventional	255,000.00					1951
AZ/NV	Online	Hoover		Lower Colorado	USBR	Conventional	2,078,800.00					1936
AZ	Online	Parker		Yuma	USBR	Conventional	120,000.00					1943
RECLAMATION OWNED AND OPERATED BY OTHERS												
AZ	Online	Arizona Falls Powerplant		Phoenix	Salt River Valley Water User's Association	Conventional	750.00					1902
AZ	Online	Cross Cut Powerplant		Phoenix	Salt River Valley Water User's Association	Conventional	3,000.00					1914
AZ	Online	Horse Mesa Powerplant		Phoenix	Salt River Valley Water User's Association	Conventional/Pump Storage	129,000.00					1927
AZ	Online	Mormon Flat Powerplant		Phoenix	Salt River Valley Water User's Association	Conventional/Pump Storage	60,000.00					1926
AZ	Online	New Waddell Pump/Generating Plant		Phoenix	Central Arizona Water Conservation District	Pump Storage	45,000.00					1993
CA	Online	Senator Wash Pump/Generating Plant		Yuma	Imperial Irrigation District	Pump Storage	7,200.00					1966
AZ	Online	Siphon Drop Powerplant		Yuma	Yuma County Water User's Association	Conventional	4,600.00					1926
AZ	Online	South Consolidated Powerplant		Phoenix	Salt River Valley Water User's Association	Conventional	1,400.00					1912
AZ	Online	Stewart Mountain Powerplant		Phoenix	Salt River Valley Water User's Association	Conventional	10,400.00					1930
AZ	Online	Theodore Roosevelt Powerplant		Phoenix	Salt River Valley Water User's Association	Conventional	36,020.00					1973
OTHER PLANTS ON RECLAMATION FACILITIES												
AZ	Online	C.C. Craigin Dam and Powerplant	2304	Phoenix	Salt River Project	Conventional	3,000.00					1965
AZ	Online	Drop Five Powerplant		Yuma	Imperial Irrigation District	Conventional	4,000.00					1982
AZ	Online	Drop Four Powerplant		Yuma	Imperial Irrigation District	Conventional	19,600.00					1941
AZ	Online	Drop One Powerplant		Yuma	Imperial Irrigation District	Conventional	6,000.00					1984
AZ	Online	Drop Three Powerplant		Yuma	Imperial Irrigation District	Conventional	9,800.00					1941
AZ	Online	Drop Two Powerplant		Yuma	Imperial Irrigation District	Conventional	10,000.00					1953
AZ	Online	Pilot Knob Powerplant		Yuma	Imperial Irrigation District	Conventional	33,000.00					1961
FEDERAL ENERGY REGULATORY COMMISSION PROJECTS												
NV	Preliminary	Blue Diamond Pumped Storage Project	14344	Regional Office	The International Consortium of Energy Managers	Pump Storage	450,000.00	1/6/2012	7/11/2012			
NV	Preliminary	Eldorado Pumped Storage Project	13861	Regional Office	Eldorado Pumped Storage, LLC	Pump Storage	400,000.00	10/13/2010	2/3/2012			
AZ	Preliminary	Longview Pumped Storage Project	14341	Regional Office	Longview Energy Exchange, LLC	Pump Storage	2,000,000.00	1/3/2012	5/4/2012			
UT	Preliminary	Lake Powel Hurricane Cliffs Pumping Plant	12966	Regional Office	State of Utah	Pump Storage	300,000.00	8/21/2007	5/20/2011			
AZ	Preliminary	Verde Pumped Storage Project	14061	Phoenix	Arizona Independent Power	Pump Storage	795,000.00	1/12/2011	8/15/2011			
LEASE OF POWER PRIVILEGE PROJECTS												
AZ	Request for Development	Santa Rosa Canal		Phoenix	Maricopa-Stanfield Irrigation and Drainage District	Conventional	375.00	9/4/2012				
SOLAR PROJECTS												
NV	Online	Boulder City Regional Office Building		Regional Office	Boulder City Regional Office Building		276.36					
NV	Online	Boulder City Regional Office Building (parking)		Regional Office	Boulder City Regional Office Building		5.97					
NV	Online	Hoover Spillway House Renovation		Regional Office	Boulder City Regional Office Building		48.00					Aug-13
WIND PROJECTS												
AZ	In Development	Mohave County Wind Farm		Regional Office	Mohave County		500,000.00					
AZ	In Development	Searchlight Wind Energy LLC		Regional Office	Searchlight Wind Energy LLC		200,000.00					

Mid-Pacific Renewable Portfolio

State	Project Status	Project Name	FERC ID	Area Office	Operating Entity	Hydropower Type	Capacity (kW)	Project Initiation Date	Preliminary Permit or Lease Date	Exemption or CE Date	License or Lease Date	Online
RECLAMATION OWNED AND OPERATED												
CA	Online	Folsom		Central California	USBR	Conventional	207,000.00					1955
CA	Online	Judge Francis Carr		Northern California	USBR	Conventional	154,400.00					1963
CA	Online	Keswick		Northern California	USBR	Conventional	117,000.00					1950
CA	Online	Lewiston		Northern California	USBR	Conventional	350.00					1964
CA	Online	New Melones		Central California	USBR	Conventional	380,000.00					1979
CA	Online	Nimbus		Central California	USBR	Conventional	13,500.00					1955
CA	Online	Shasta		Northern California	USBR	Conventional	714,000.00					1944
CA	Online	Spring Creek		Northern California	USBR	Conventional	180,000.00					1964
CA	Online	Stampede		Lahontan Basin	USBR	Conventional	3,650.00					1988
CA	Online	Trinity		Northern California	USBR	Conventional	140,000.00					1964
RECLAMATION OWNED AND OPERATED BY OTHERS												
CA	Online	San Luis/Gianelli Pumping-Generating Plant		South Central California	California Department of Water Resources	Pump Storage	424,000.00					1968
NV	Online	Lahontan Powerplant		Lahontan Basin	Truckee-Carson Irrigation District	Conventional	2,400.00					1911
CA	Online	O'Neill Pumping-Generating Plant		South Central California	San Luis Delta-Mendota Water Authority	Pump Storage	25,200.00					1967
FEDERAL ENERGY REGULATORY COMMISSION PROJECTS												
OR	Online	East Side	2082	Klamath Basin	Scottish Power (PacifiCorp)	Conventional	3,200.00					
CA	Online	Friant Fishwater Release	11068	South Central California	Orange County Irrigation District	Conventional	510.00				5/16/1991	
CA	Online	Friant Power	2892	South Central California	Friant Power Authority	Conventional	27,360.00				9/30/1982	6/13/1905
CA	Online	High Line Canal	7252	Northern California	Santa Clara	Conventional	530.00				7/17/1984	
CA	Online	Madera Canal	5765	South Central California	Madera-Chowchilla Water & Power Authority	Conventional	440.00	11/16/1981	4/27/1982		9/8/1983	
CA	Online	Madera Canal Water Power STA 1174+84	2958	South Central California	Madera-Chowchilla Water & Power Authority	Conventional	563.00	11/23/1981			6/8/1982	
CA	Online	Madera Canal Water Power STA 1923+10	2958	South Central California	Madera-Chowchilla Water & Power Authority	Conventional	916.00	11/23/1981			6/8/1982	
CA	Online	Madera Canal Water Power STA 980+65	2958	South Central California	Madera-Chowchilla Water & Power Authority	Conventional	2,125.00	11/23/1981			6/8/1982	
CA	Online	Monticello	2780	Central California	Solano I.D.	Conventional	11,500.00				1/29/1981	Jun-83
NV	Online	New Lahontan	7828	Lahontan Basin	Truckee-Carson I.D.	Conventional	4,000.00				12/26/1985	6/12/1989
CA	Online	Stony Gorge Hydroelectric	3193	Northern California	Santa Clara, City of	Conventional	4,900.00				8/31/1982	Apr-86
OR	Online	West Side	2082	Klamath Basin	Scottish Power (PacifiCorp)	Conventional	600.00					
CA	Online	Whiskey Dam Power Project	2888	Northern California	City of Redding	Conventional	3,530.00	2/17/1982			3/10/1983	6/8/1905
CA	License	Friant Fishwater Release	11068	South Central California	Orange County Irrigation District	Conventional	7,000.00				5/16/1991	
OR	Preliminary	Bryant Mountain (Pumped Storage)	13680	Klamath Basin	Bryant Mountain LLC	Pump Storage	1,250,000.00	3/1/2010	9/24/2010			
LEASE OF POWER PRIVILEGE PROJECTS												
OR	Online	Klamath Canal Drop C		Klamath Basin	Klamath Irrigation District	Conventional	900.00	2/8/2011			11/8/2011	5/3/2012
CA	Lease Contract	Lewiston Powerplant Replacement		Northern California	Trinity Power Authority	Conventional	1,900.00				6/5/2009	
SOLAR PROJECTS												
CA	In Development	San Luis Facility		South Central California			9,000.00 - 25,000.00	8/5/2011	12/13/2011			

Pacific Northwest Renewable Portfolio

State	Project Status	Project Name	FERC ID	Area Office	Operating Entity	Hydropower Type	Capacity (kW)	Project Initiation Date	Preliminary Permit or Lease Date	Exemption or CE Date	License or Lease Date	Online
RECLAMATION OWNED AND OPERATED												
ID	Online	Anderson Ranch		Snake River	USBR	Conventional	40,000.00					1950
ID	Online	Black Canyon		Snake River	USBR	Conventional	10,200.00					1925
ID	Online	Boise River Diversion		Snake River	USBR	Conventional	3,450.00					1912
WA	Online	Chandler		Columbia Cascades	USBR	Conventional	12,000.00					1956
WA	Online	Grand Coulee		Columbia Cascades	USBR	Conventional/Pump Storage	6,809,000.00					1941
OR	Online	Green Springs		Columbia Cascades	USBR	Conventional	17,290.00					1960
MT	Online	Hungry Horse		Columbia Cascades	USBR	Conventional	428,000.00					1952
ID	Online	Minidoka		Snake River	USBR	Conventional	27,700.00					1942
ID	Online	Palisades		Snake River	USBR	Conventional	176,564.00					1957
WA	Online	Roza		Columbia Cascades	USBR	Conventional	12,937.00					1958
FEDERAL ENERGY REGULATORY COMMISSION PROJECTS												
ID	Online	American Falls	2736	Snake River	Idaho Power Co	Conventional	92,400.00				3/31/1975	1975
ID	Online	ARROWROCK DAM	4656	Snake River	Big Bend Irrigation District, et. al.	Conventional	15,000.00		8/15/1983		3/27/1989	Mar-10
ID	Online	CASCADE	2848	Snake River	Idaho Power Co.	Conventional	12,420.00				2/17/1981	3/4/1985
WA	Online	COWICHE	7337	Columbia Cascades	Yakima-Tieton ID	Conventional	1,470.00				7/6/1984	1986
ID	Online	Dietrich Drop	8909	Snake River	Big Wood Canal Company	Conventional	4,770.00	3/7/1985			5/22/1987	1989
WA	Online	ELTOPIA BRANCH CANAL	3842	Columbia Cascades	East, Quincy, & South, Columbia Basin ID's	Conventional	2,200.00				12/9/1981	1982
WA	Online	ESQUATZEL POWER	12638	Columbia Cascades	Green Energy Today LLC	Conventional	900.00	1/4/2006		6/6/2008		Apr-12
ID	Online	FARGO DROP NO. 1	5042	Snake River	Boise Project Board of Control	Conventional	1,100.00			10/23/1981		Jun-13
ID	Online	FELT HYDRO	5089	Snake River	Fall River Rural Cooperative	Conventional	7,450.00				9/9/1983	1985
ID	Online	ISLAND PARK	2973	Snake River	Fall River Rural Electric	Conventional	4,800.00		7/8/1983		10/19/1988	1982
ID	Online	Little Wood Reservoir	7427	Snake River	Little Wood Irrigation District	Conventional	3,000.00			4/13/1984		1989
ID	Online	LOW LINE NO. 8 ARENA DROP	5056	Snake River	Boise Project Board of Control	Conventional	385.00	6/10/1981		10/23/1981		Apr-12
WA	Online	MAIN CANAL HEADWORKS	2849	Columbia Cascades	East, Quincy, & South, Columbia Basin I.D.'s	Conventional	26,000.00				11/16/1981	1987
ID	Online	Mile 28	10552	Snake River	Contractor's Power Group	Conventional	1,500.00	12/2/1987	9/15/1988		8/12/1992	1996
OR	Online	MITCHELL BUTTE LATERAL	5357	Snake River	Owyhee ID et. al.	Conventional	1,880.00		2/26/1982		12/14/1984	1990
ID	Online	Mora Drop Hydro	3403	Snake River	Boise Kuna Irrigation District et. Al	Conventional	1,900.00			12/18/1980		9/15/2006
WA	Online	ORCHARD AVENUE	7338	Columbia Cascades	Yakima-Tieton ID	Conventional	1,441.00				7/6/1984	1986
OR	Online	OWYHEE DAM	4354	Snake River	Gem I.D., Owyhee I.D., & Ridgeview I.D	Conventional	4,340.00				5/9/1984	1985
OR	Online	OWYHEE TUNNEL NO. 1	4359	Snake River	Gem ID et. al.	Conventional	8,120.00				2/28/1986	6/1/1983
WA	Online	POTHOLES EAST CANAL	3843	Snake River	East, Quincy, & South, Columbia Basin ID's	Conventional	2,400.00				12/9/1981	1982
WA	Online	POTHOLES EAST CANAL HEADWORKS	2840	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Conventional	6,500.00				9/21/1982	1991
WA	Online	QUINCY CHUTE	2937	Columbia Cascades	East, Quincy, & South, Columbia Basin I.D.'s	Conventional	9,367.00				8/20/1982	1983
WA	Online	RUSSEL D SMITH PEC 22.7	2926	Columbia Cascades	East, Quincy, & South, Columbia Basin I.D.'s	Conventional	6,100.00				3/27/1980	1982
WA	Online	SUMMER FALLS	3295	Columbia Cascades	East, Quincy, & South, Columbia Basin I.D.'s	Conventional	92,000.00				8/14/1981	1983
WA	Online	TIETON DAM	3701	Columbia Cascades	Yakima-Tieton Irrigation District	Conventional	13,600.00				6/27/1991	2007
OR	Exemption	45-Mile	13817	Columbia Cascades	Earth by Design	Conventional	5,000.00	7/16/2010		12/17/2010		
ID	Exemption	FARGO DROP NO. 2	5040	Snake River	Boise Project Board of Control	Conventional	175.00			10/23/1981		
ID	Exemption	MAIN CANAL NO. 10	5041	Snake River	East, Quincy, & South, Columbia Basin I.D.'s	Conventional	500.00			10/23/1981		
ID	Exemption	MAIN CANAL NO. 6	5038	Snake River	East, Quincy, & South, Columbia Basin I.D.'s	Conventional	1,055.00			10/23/1981		
ID	Exemption	WALDVOGEL BLUFF	5043	Snake River	Boise Project Board of Control	Conventional	300.00	6/30/1981		12/23/1981		
WA	Preliminary	16.4 Wasteway	14349	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Conventional	1,750.00	7/29/2011	3/26/2013			
WA	Preliminary	46A Wasteway	14351	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Conventional	1,600.00	7/29/2011	3/26/2013			
WA	Preliminary	Amnor Clear Creek Hydro	14065	Columbia Cascades	Big Bend Irrigation District, et. al.	Conventional	920.00	1/24/2011	12/16/2011			
WA	Preliminary	Keechelus Hydro Power	14116	Columbia Cascades	Keechelus Hydro Power	Conventional	500.00	3/16/2011	9/23/2011			
ID	Preliminary	Mason Dam Hydro	12686	Snake River	Baker County	Conventional	3,400.00	4/25/2006	5/26/2010			
OR	Preliminary	Monroe Drop	14430	Columbia Cascades	Natel	Conventional	300.00	7/2/2012	3/28/2013			
WA	Preliminary	PEC 1973 Drop	14316	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Conventional	2,200.00	11/8/2011	3/26/2013			
WA	Preliminary	Pinto Dam	14380	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Conventional	3,400.00	4/4/2012	10/10/2012			

Pacific Northwest Renewable Portfolio

WA	Preliminary	Rocky Coulee Wasteway	14372	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Conventional	12,000.00	3/13/2012	7/11/2012			
WA	Preliminary	Scooteney Outlet Drop	14317	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Conventional	1,300.00	5/31/2011	3/26/2013			
WA	Preliminary	Scooteney Wasteway	14352	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Conventional	1,110.00	7/28/2011	3/26/2013			
WA	Preliminary	Scooteney Inlet Drop	14318	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Conventional	1,700.00	5/31/2011	3/26/2013			
OR	Preliminary	Unity Dam Hydro	13834	Snake River	Amnor Hydro	Conventional	4,000.00	7/23/2010	5/5/2011			
ID	Preliminary	Warm Springs Dam	13570	Snake River	Ted Sorenson	Conventional	2,500.00	8/12/2009	2/22/2010			
WA	Preliminary	Wickiup Dam Hydro	12965	Columbia Cascades	Symbiotics	Conventional	7,150.00	8/17/2007	5/15/2008			
WA	Preliminary	Banks Lake Pumped Storage Project	14329	Columbia Cascades	Grand Coulee Project Hydroelectric Authority	Pump Storage	1,000,000.00	11/30/2011	8/22/2013			
SOLAR PROJECTS												
WA	Online	Grand Coulee Solar		Columbia Cascades	Grand Coulee		4.70					Oct-12
PILOT PROJECTS												
WA	In Development	Hydrovolts Roza Canal Hydrokinetics		Columbia Cascades	Hydrovolts	Hydrokinetics	7.00					
WA	Testing	Instream Energy Roza Division Hydrokinetics		Columbia Cascades	Instream Energy	Hydrokinetics	10.00					Aug-13

Upper Colorado Renewable Portfolio

State	Project Status	Project Name	FERC ID	Area Office	Operating Entity	Hydropower Type	Capacity (kW)	Project Initiation Date	Preliminary Permit or Lease Date	Exemption or CE Date	License or Lease Date	Online
RECLAMATION OWNED AND OPERATED												
CO	Online	Blue Mesa		Western Colorado	USBR	Conventional	86,400.00					1967
CO	Online	Crystal		Western Colorado	USBR	Conventional	31,500.00					1978
NM	Online	Elephant Butte		Albuquerque	USBR	Conventional	27,945.00					1940
UT	Online	Flaming Gorge		Provo	USBR	Conventional	151,500.00					1963
WY	Online	Fontenelle		Provo	USBR	Conventional	10,000.00					1968
AZ	Online	Glen Canyon		Western Colorado	USBR	Conventional	1,320,000.00					1965
CO	Online	Lower Molina		Western Colorado	USBR	Conventional	4,860.00					1962
CO	Online	Morrow Point		Western Colorado	USBR	Conventional	173,334.00					1971
CO	Online	Upper Molina		Western Colorado	USBR	Conventional	8,640.00					1962
RECLAMATION OWNED AND OPERATED BY OTHERS												
UT	Online	Causey Powerplant		Provo	Weber Basin Water Conservancy District	Conventional	1,900.00					1999
UT	Online	Deer Creek Powerplant		Provo	Provo River Water Users Association	Conventional	4,950.00					1958
UT	Online	Gateway Powerplant		Provo	Weber Basin Water Conservancy District	Conventional	4,000.00					1958
UT	Online	Lower Spanish Fork Powerplant		Provo	Strawberry Water User's Association	Conventional	250.00					1937
CO	Online	McPhee Powerplant		Western Colorado	Dolores Water Conservancy District	Conventional	1,283.00					1992
UT	Online	Olmsted Powerplant		Provo	Purchased from PacifiCorp in 1990	Conventional	10,300.00					1904
UT	Online	Payson Powerplant		Provo	Strawberry Water User's Association	Conventional	400.00					1941
CO	Online	Towaoc Powerplant		Western Colorado	Dolores Water Conservancy District	Conventional	11,495.00					1994
UT	Online	Upper Spanish Fork		Provo	Strawberry Water User's Association	Conventional	3,900.00					1909
UT	Online	Wanship Powerplant		Provo	Weber Basin Water Conservancy District	Conventional	1,900.00					1958
FEDERAL ENERGY REGULATORY COMMISSION PROJECTS												
UT	Online	Echo Dam	3755	Provo	City of Bountiful	Conventional	4,500.00		11/30/1981		12/7/1984	6/9/1905
NM	Online	El Vado Dam	5226	Albuquerque	County of Los Alamos	Conventional	8,000.00		1/4/1982		10/31/1985	7/1/1988
CO	Online	Navajo Dam	4720	Western Colorado	City of Farmington	Conventional	30,000.00				10/15/1985	2/1/1988
UT	Online	Pineview Dam	4597	Provo	Weber-Box Elder Conservancy District	Conventional	1,800.00				3/16/1984	6/13/1905
CO	Online	Vallecito Dam	3174	Western Colorado	Ptarmigan Resources & Energy, Inc.	Conventional	5,880.00				10/5/1983	5/1/1989
CO	Preliminary	Plateau Creek Pumped Storage	14426	Western Colorado	Dolores Water Conservancy District	Pump Storage	500,000.00	5/10/2012	10/1/2012			
LEASE OF POWER PRIVILEGE PROJECTS												
CO	Online	Grand Valley Project		Western Colorado	Grand Valley Water Users Assoc., Orchard Mesa Irrigation Dist., PSCO	Conventional	3,000.00				1933	1938
CO	Online	Jackson Gulch Dam		Western Colorado	Mancos Water Conservancy Dist.	Conventional	260.00				1955	1995
UT	Online	Jordanelle Dam		Provo	Central Utah Water Conservancy Dist., Heber Light and Power	Conventional	13,000.00	7/2/1999			2008	7/1/2008
CO	Online	Lemon Dam		Western Colorado	Florida Water Conservancy District	Conventional	120.00				1989	9/1/1988
CO	Online	South Canal (Drop 1)		Western Colorado	Uncompahgre Valley Water Users and the Delta-Montrose Electric Association	Conventional	4,000.00	8/26/2009			3/16/2012	6/3/2013
CO	Online	South Canal (Drop 3)		Western Colorado	Uncompahgre Valley Water Users and the Delta-Montrose Electric Association	Conventional	3,500.00	8/26/2009			3/16/2012	8/1/2013
CO	License	Ridgway Dam		Western Colorado	Tri-County Water Conservancy District	Conventional	7,000.00	6/2/2010			2/6/2012	
NM	Preliminary	Caballo Dam		Albuquerque	HydroPower Capital	Conventional	5,900.00	9/22/2011	12/4/2012			
UT	Preliminary	Spanish Fork Flow Control Structure	LP11-2	Provo	Central Utah Water Conservancy District, Strawberry Water Users Association and South Utah Valley Electric Service District	Conventional	8,000.00	5/11/2011	3/9/2012			
NM	Posted Solicitation	San Juan Chama Project	LP12-1-000	Albuquerque	Albuquerque Bernalillo County Water Utility Authority	Conventional	286.00	7/6/2012				
CO	Request for Development	Rifle Gap Dam		Western Colorado		Conventional	341.00					
CO	Request for Development	Shavano Falls		Western Colorado	Uncompahgre Valley Water Users Association	Conventional	5,168.00	8/21/2013				
CO	Request for Development	South Canal (Drop 4)		Western Colorado	Uncompahgre Valley Water Users Association	Conventional	4,242.00	8/21/2013				
CO	Request for Development	South Canal (Drop 5)		Western Colorado	Uncompahgre Valley Water Users Association	Conventional	291.00	8/21/2013				
PILOT PROJECTS												

Upper Colorado Renewable Portfolio												
CO	Request for Development	South Canal (Drop 2)		Western Colorado	Percheron Power, LLC, Delta-Montrose Electric Association, Uncompahgre Valley Water Users Association	Hydrodynamic Screw	850.00					