

RECLAMATION

Managing Water in the West

Bureau of Reclamation Renewable Energy Update

Fiscal Year (FY) 2017, Q3



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Executive Summary

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

The quarterly update is a compilation of monthly updates submitted by regional offices with area office input. Reclamation personnel, including Daniel Vallejo, Nicholas Williams, Robert Ross, Gary Grassel, and James Stauffer provided essential support in the development of this document.

Renewable Activities

H.R. 1967 – Bureau of Reclamation Pumped Storage Hydropower Development Act

Cited as the *Bureau of Reclamation Pumped Storage Hydropower Development Act*, H.R. 1967 was introduced by Congressman Doug Lamborn (R-CO-5) on April 6, 2017. If enacted, H.R. 1967 would amend section 9(c)(1) of the Reclamation Project Act of 1939 (43 U.S.C. 485h(c)(1)) to authorize non-Federal pumped storage development, utilizing multiple Reclamation reservoirs through a Lease of Power Privilege (LOPP).

H.R. 1967 was reported by the Committee on Natural Resources on June 2, 2017¹ and passed the House by voice vote on June 27, 2017. The bill will now be considered in the Senate. Additional H.R. 1967 information is provided in the FY17 Q2 Renewable Update (Update), see: https://www.usbr.gov/power/FY_2017_Q2_Renewable_Update.pdf.

The Department's testimony, delivered by Special Assistant to the Secretary, Scott Cameron, is available on Reclamation's newsroom website at: <https://www.usbr.gov/newsroom/testimony/detail.cfm?RecordID=3081>.

¹ See H. Rept. 115-158 at: <https://www.congress.gov/115/crpt/hrpt158/CRPT-115hrpt158.pdf>.

Reclamation Renewable Energy Summary

Online Hydropower Facilities

	Great Plains		Lower Colorado		Mid-Pacific		Pacific Northwest		Upper Colorado		Bureau of Reclamation	
	#	MW ²	#	MW	#	MW	#	MW	#	MW	#	MW
Reserved	21	1013	3	2454	10	1910	10	7537	9	1816	53	14730
Transferred	-	-	10	297	3	452	-	-	10	41	23	790
Other	-	-	7	85	-	-	-	-	-	-	7	85
FERC Facilities ³	6	29	-	-	13	60	27	326	5	50	51	466
LOPP Facilities ⁴	2	4	-	-	1	1	-	-	10	41	13	46
Total	29	1046	20	2836	27	2423	37	7863	34	1948	147	16117

In Development – Conventional Hydropower (FERC)

	Great Plains		Lower Colorado		Mid-Pacific		Pacific Northwest		Upper Colorado		Bureau of Reclamation	
	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW
License	2	20	-	-	1	7	1	3	-	-	4	30
Exemption	1	1	-	-	-	-	4	2	-	-	5	3
Preliminary Permit	2	2	-	-	2	5	8	21	-	-	12	28
Total	5	23	-	-	3	12	13	26	-	-	21	61

In Development – Conventional Hydropower (LOPP)

	Great Plains		Lower Colorado		Mid-Pacific		Pacific Northwest		Upper Colorado		Bureau of Reclamation	
	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW
Contract	-	-	-	-	-	-	-	-	1	1	1	1
Preliminary Lease	3	21	-	-	-	-	-	-	-	-	3	21
Posted Solicitation	-	-	-	-	-	-	-	-	1	0.1	1	0.1
Request for Development	3	3	1	2	2	0.4	6	TBD ⁵	2	1	14	6+
Total	6	24	1	2	2	0.4	6	TBD	4	2	19	28+

² Megawatts (MW).

³ Non-Federal hydropower developed on Reclamation infrastructure, licensed by the Federal Energy Regulatory Commission (FERC).

⁴ Non-Federal hydropower developed on Reclamation infrastructure, authorized through a Reclamation LOPP Contract. Reclamation holds title to the Upper Colorado Grand Valley power facility LOPP.

⁵ MW capacity of the six Pacific Northwest LOPP sites to be determined.

In Development – Pump Storage (PS) (FERC and LOPP)

Unlike conventional hydropower facilities that utilize a single waterbody (e.g., a reservoir or conduit), pump storage facilities utilize two waterbodies (e.g., an upper and lower reservoir). Typical pump storage operation consists of pumping water from the lower reservoir to the upper reservoir when electricity demand (and therefore price) is low and releasing water from the upper reservoir to the lower reservoir through a powerhouse to generate electricity when electricity demand (and therefore price) is high. Beyond engaging in arbitrage to maximize facility economic value, pump storage facilities are also fitted to support variable renewable integration through the provision of ancillary (i.e., grid) support services (e.g., energy storage, demand response, contingency reserves, frequency response, etc.).

Non-Federal pump storage development at Reclamation projects may require both a FERC License and Reclamation LOPP if the proposed project utilizes a Reclamation reservoir within Reclamation’s permitting jurisdiction and any second reservoir outside Reclamation’s permitting jurisdiction (i.e., FERC’s jurisdiction). Projects subject to dual FERC/LOPP jurisdiction are identified as “Dual LOPP/FERC PS” projects in the table below and the Appendix – Regional Renewable Energy Portfolios. Additional information regarding non-Federal pumped storage permitting is available on the Reclamation LOPP website, see: <https://www.usbr.gov/power/LOPP>.

	Great Plains		Lower Colorado		Mid-Pacific		Pacific Northwest		Upper Colorado		Bureau of Reclamation	
	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW
FERC PS												
License	-	-	-	-	-	-	-	-	-	-	-	-
Preliminary Permit	2	1732	4	3645	1	1250	2	1200	1	300	10	8127
LOPP PS												
Contract	-	-	-	-	-	-	-	-	-	-	-	-
Preliminary Lease	-	-	-	-	-	-	-	-	-	-	-	-
Dual LOPP/FERC PS⁶												
Preliminary Permit	1	133	-	-	-	-	1	400	1	750	3	1283
Preliminary Lease	-	-	-	-	-	-	-	-	-	-	-	-
Preliminary Lease and Permit	-	-	-	-	-	-	-	-	-	-	-	-
Total	3	1865	4	3645	1	1250	3	1600	2	1050	13	9410

⁶ The proposed Seminole Pumped Storage Project (GP), Anderson Ranch Pumped Storage Project (PN), and Ute Pumped Storage Project (UC) have each received a FERC Preliminary Permit for upper reservoir development, however no project has received a Reclamation Preliminary Lease or LOPP Contract for lower reservoir development.

Capital Improvement Projects at Reclamation Facilities

Turbine Replacements

Replacing an antiquated runner with a more modern design, featuring improved materials can increase unit operating efficiencies - on average, by three percent. At this time, turbine replacements are in progress at Palisades (G2) and Minidoka (G9).

Generator Rewinds

Rewinding a generator with modern windings and insulating materials can increase unit operating efficiencies and provide the opportunity to uprate generator capacity. At this time, rewinds are in progress at Yellowtail (G1) and Glen Canyon (G1). A rewind was completed at Trinity (G1) in April 2017.

Online Solar and Wind Projects

	Great Plains		Lower Colorado		Mid-Pacific		Pacific Northwest		Upper Colorado		Bureau of Reclamation	
	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW
Solar	-	-	4	14.3	-	-	1	.005	2	.035	7	14.4
Wind	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	4	14.3	-	-	1	.005	2	.035	7	14.4

In Development Solar and Wind Projects

	Great Plains		Lower Colorado		Mid-Pacific		Pacific Northwest		Upper Colorado		Bureau of Reclamation	
	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW
Solar	-	-	2	50.02	1	26	-	-	-	-	3	76.02
Wind	-	-	1	500	-	-	-	-	-	-	-	500
Total	-	-	3	550.02	1	26	-	-	-	-	3	576.02

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 carry out water and energy efficiency improvements, including projects that save water; support environmental benefits; facilitate and support water markets; mitigate the risk of future water conflict in areas of high risk; and accomplish other benefits that contribute to water supply sustainability in the western United States. 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. For additional information visit the WaterSMART program website, available at: <https://www.usbr.gov/watersmart>.

WaterSMART Updates

The FY17 WaterSMART Water and Energy Efficiency Grant (WEEG) funding opportunity announcement was posted on <http://www.grants.gov/> in November 2016. Per the announcement, applications were due January 18, 2017. Reclamation expects to announce WEEG project selections in August 2017.

WaterSMART Summary

All active, FY11-16 WaterSMART WEEG projects that feature a renewable energy component are listed in the table below. Project summaries are available on the WaterSMART website: <http://www.usbr.gov/watersmart/weeg/prev.html>.

	Fiscal Year	Recipient and Project Title	Renewable Component Status
1	2011	Three Sisters Irrigation District <i>Main Canal Pipeline Penstock Hydro Project</i>	Online (8/2014)
2	2011	Pershing County Water Conservation District <i>Humboldt River Automation Metering and Hydropower Project</i>	In development, FERC License
3	2011	Boise Project Board of Control <i>Hydroelectric Project</i>	Online (4/2013)
4	2012	Consolidated Irrigation Company <i>Improve Irrigation Efficiencies and Provide Sustainability</i>	Online (9/2015)
5	2014	Nevada Irrigation District <i>Hydroelectric Project</i>	In development
6	2014	Rosedale-Rio Bravo Water Storage District <i>Water Conservation, Energy Efficiency, and Solar Power Project</i>	Online (6/2016)
7	2014	Uncompahgre Valley Water Users Association <i>Shavano Falls Hydropower Development</i>	Online (5/2015)

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8	2014	Elephant Butte Irrigation District <i>Water-Habitat-Energy-Nexus</i>	In development
9	2014	Davis and Weber Counties Canal Company <i>Main Piping and Small Hydro Project</i>	In development
10	2014	Fremont Irrigation Company <i>Extension to Improve Irrigation Efficiency and Provide Sustainability</i>	In development
11	2014	Richmond Irrigation District <i>Upper High Creek Canal Enclosure and Hydropower Development Project</i>	In development
12	2015	Bella Vista Water District <i>Renewable Energy, Advanced Metering Infrastructure, and Water Conservation Improvements</i>	In development
13	2015	Uncompahgre Valley Water Users Association <i>South Canal Drop 4 Hydropower Development</i>	Online (6/2015)
14	2015	Navajo Agricultural Product Industry <i>Create and Implement a Comprehensive Water Management Web-Based Tool for Ordering and Delivering Irrigation Water</i>	In development
15	2015	Three Sisters Irrigation District <i>Main Canal Pipeline and Micro Hydro Generation Project</i>	In development
16	2015	Cameron County Irrigation District No. 6 <i>Conversion of the Saldana Canal into Pipeline, Elimination of the Saldana Pump by Construction of Aerial Crossing and Solar Powered Second Lift Pump</i>	In development
17	2015	Santa Cruz Irrigation District No. 15 <i>Shotcrete Lining of the N-Canal, Installation of a VFD at Pump-15, and Wind Powered Alternative at Pump 15</i>	In development
18	2015	Davis and Weber Counties Canal Company <i>Canal Piping and Hydro Project</i>	In development
19	2015	Davis and Weber Counties Canal Company <i>Secondary Water Irrigation Metering and Hydro Project</i>	In development
20	2015	Marion Upper Ditch Company <i>Main Canal Pipeline and Micro Hydro Generation Project</i>	In development
21	2016	Uncompahgre Valley Water Users Association <i>South Canal Hydropower Development Project: Drop 5</i>	Online (8/2016)
22	2016	Davis and Weber Counties Canal Company <i>Piping and Hydro Project</i>	In development
23	2016	Hights Creek Irrigation Company <i>Green Road Piping, Metering, and Small Hydro Project</i>	In development
24	2016	Weber Basin Water Conservancy District <i>Uintah Bench Secondary Water Metering & Small Hydro Project</i>	In development
25	2016	Woodruff Irrigation Company <i>Woodruff Hydroelectric Project</i>	In development

Regional Renewable Energy Updates

Great Plains Renewable Energy Updates

FERC Projects

Project: Clark Canyon Dam
Developer: Clark Canyon Hydro, LLC
Status: License (P-14677)

On March 31, 2017 FERC issued a License to developer Clark Canyon Hydro, LLC to construct, operate, and maintain a non-Federal hydroelectric facility on the Reclamation Clark Canyon Dam.

Within the License order FERC rejected a Reclamation 4(e) condition⁷ requiring the developer reimburse Reclamation for services rendered in support of the License (e.g., Reclamation design and study review, inspections, etc. to evaluate project impacts on the Clark Canyon Dam and related, East Bench Unit operations).

The rejection breaks from FERC licensing precedent on Reclamation facilities as FERC has accepted equivalent 4(e) reimbursement conditions for all Licenses issued on Reclamation facilities over the past 20 years, including the former (now expired) License issued at Clark Canyon Dam in 2009 (P-12429).

The License order states that the contemplated reimbursement agreement was redundant with and contrary to requirements set forth in sections 10(e) and 17 of the Federal Power Act (FPA) – which authorize FERC (exclusively) to collect annual charges from licensees to reimburse costs incurred by Federal agencies in administering the FPA.

The Department has requested a meeting with FERC to discuss the matter, explaining that the reimbursement condition is consistent with existing Memorandum of Understanding (MoU) between FERC and Reclamation⁸ and

⁷ Section 4(e) of the FPA provides that FERC can issue a License for a project located within a Federal reservation only if it finds that the License will not interfere or be inconsistent with the purpose for which such reservation was created or acquired. In addition, section 4(e) requires that any License for which a finding is made must include mandatory conditions prescribed by the Secretary under whose supervision the reservation falls (e.g., Secretary of the Interior on behalf of the Bureau of Reclamation). Reclamation conditions were issued to FERC on March 17, 2016.

⁸ See *Memorandum of Understanding Between the Federal Energy Regulatory Commission of the Department of Energy and the Water and Power Resources Service of the Department of the Interior for Joint Participation in Non-Federal Hydropower Development in the Approval of Plans and Drawings, Project Access, Power Lease Charge and use of Lands Administered by the Water and Power Resources Services* (1981), available at: <https://www.usbr.gov/power/LOPP/mou-3.pdf>.

presiding case law⁹ finds that FERC is required to accept Department 4(e) conditions and has no discretion to reject Department 4(e) conditions.

Pertinent to the Clark Canyon Dam project, on June 27, 2017 Reclamation and the developer amended an existing joint MoU and Contributed Funds Agreement (associated with the former Clark Canyon License) to ensure reimbursement for Reclamation services rendered in support of the current License.

Project: McGee Creek Dam
Developer: McGee Creek Authority
Status: Surrendered License (P-8492)

On March 29, 2016 McGee Creek Authority informed FERC of plans to surrender the McGee Creek Dam License. Per McGee Creek Authority Annual Power Generation Reports, the .175 MW facility has been non-operational since FY12 due to “mechanical problems.” The current License was issued on June 23, 1986.

The project has been removed from the FY17 Q3 Update.

Project: Fresno Dam
Developer: Alpine Pacific Utilities Hydro, LLC
Status: Preliminary Permit (P-14751)

Alpine Pacific Utilities Hydro, LLC filed a FERC License application on February 1, 2017. On March 22, 2017 FERC issued a “Deficiency of Application and Request for Additional Information,” requesting Alpine Pacific Utilities Hydro, LLC resolve application deficiencies (noted within the correspondence) within 90 days (June 20, 2017).

Alpine Pacific Utilities Hydro, LLC responded to the request on June 9, 2017. FERC did not post a response to the Fresno Dam docket by the close of FY17 Q3.

LOPP Projects

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

The final draft LOPP Contract was delivered to the Southeastern Colorado Water Conservancy District. The District intends to sign the LOPP Contract subsequent to securing a power purchase agreement.

Project: Helena Valley Pumping Plant
Developer: Helena Valley Irrigation District

⁹ See *City of Tacoma v. Federal Energy Regulatory Commission* 331 F.3d 106 (9th Cir. 2003).

Status: Preliminary Lease

At the request of the Helena Valley Irrigation District, Reclamation extended the Helena Valley Pumping Plant Preliminary Lease for an additional 12 months (May 2018).

Project: Yellowtail Afterbay

Developer: Crow Tribe

Status: Preliminary Lease

A revised, 60% design package was submitted to Reclamation the week of May 15, 2017. Reclamation review is ongoing, with an anticipated July completion date. A revised construction schedule, incorporating proposed design modifications, has been developed with major activities occurring in late summer/fall 2018.

A draft National Environmental Policy Act (NEPA) Environmental Assessment (EA) is scheduled to be complete in late July/early August with public scoping meetings beginning in late August. If the current schedule holds, final NEPA EA and Finding of No Significant Impact documents will be completed by the close of FY17.

Additional non-reimbursable funding has been secured for Reclamation staff through the end of December to conduct design review and support ongoing NEPA compliance. In addition, the Reclamation Montana Area Office is coordinating with the Crow Tribe and the Western Area Power Administration to discuss a number of project items, including Crow Tribe power marketing opportunities.

The next Project Management Team meeting is scheduled for July 14, 2017.

Lower Colorado Renewable Energy Updates

No updates for this quarter.

Mid-Pacific Renewable Energy Updates

Solar Projects

Project: San Luis Facility

Developer: San Luis Renewables, LLC

Status: In Development

San Luis Renewables, LLC and California ISO are developing a process to assess proposed San Luis Facility project impacts on the California transmission grid.

Pacific Northwest Renewable Energy Updates

FERC/LOPP Pumped Storage Projects

Project: Anderson Ranch Pump Storage
Developer: Cat Creek Energy, LLC
Status: Preliminary Permit (P-14655)

A Cost Recovery Agreement was executed on April 30, 2017. The Agreement provides advance funding for Reclamation services rendered in support of the Anderson Ranch Pump Storage project.

As noted in the FY16 Q4 Update, the proposed Anderson Ranch project is subject to dual FERC/LOPP jurisdiction. FERC issued Cat Creek Energy, LLC a Preliminary Permit on November 27, 2015. Whereas a Cost Recovery Agreement is in place, a LOPP Preliminary Lease has not been awarded at this time.

LOPP Projects

Project: North Unit Canal (Mile 43, 48, 50 East, 50 West, 52 North, 53 South)
Developer: To Be Determined
Status: Request for Development

On June 8, 2017 Reclamation received a Formal Request from a private entity to initiate the LOPP process at six sites on the Reclamation North Unit Canal. The North Unit Canal is a transferred work conduit, operated and maintained by the North Unit Irrigation District in Madras, Oregon.

Per the Reclamation Manual Directive and Standard, *Lease of Power Privilege (LOPP) Processes, Responsibilities, Timelines, and Charges*, (FAC 04-08)¹⁰ upon receiving a Formal Request to develop a transferred work conduit from a party other than the operating entity, Reclamation will first offer the LOPP opportunity to the operating entity. Following the offer, Reclamation will allow up to 60 calendar days for the operating entity to either accept or reject, in writing, the opportunity to develop hydropower through a LOPP.

On June 21, 2017 Reclamation contacted the North Unit Irrigation District via letter, requesting the District accept or reject the opportunity to pursue development via a LOPP at any combination of the six sites within 60 calendar days of the correspondence date (August 20, 2017). The District has not formally replied to Reclamation at this time.

Should the District accept the opportunity to develop the site(s) within the defined timeframe, the District will be allotted 150 calendar days (after acceptance) to

¹⁰ See: <https://www.usbr.gov/recman/fac/fac04-08.pdf>.

submit a development proposal that provides all information required in FAC 04-08. During the 150 calendar day timeframe, Reclamation will not solicit proposals from other entities and no other entity is eligible to receive the LOPP. Should the District reject the opportunity to develop the site(s) or fail to submit an acceptable proposal within the 150 calendar day timeframe, Reclamation will solicit proposals through a public process (e.g., a local news publication or Federal Register Notice) to ensure fair and open competition.

Upper Colorado Renewable Energy Updates

FERC Pumped Storage Projects

Project: Plateau Creek Pumped Storage
Developer: Dolores Water Conservancy District
Status: Terminated (P-14426)

On October 1, 2012, FERC issued a Preliminary Permit to the Dolores Water Conservancy District to study the feasibility of the proposed Plateau Creek Pumped Storage project, sited above the Reclamation Dolores Project McPhee Reservoir.

The Dolores Water Conservancy District is no longer pursuing the project. The project has been removed from the FY17 Q3 Update.

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 (RESERVED WORKS)												
WY	Online	Alcova		Wyoming	Reclamation	Conventional	41,400.00					1955
CO	Online	Big Thompson		Eastern Colorado	Reclamation	Conventional	4,500.00					1959
WY	Online	Boysen		Wyoming	Reclamation	Conventional	15,000.00					1952
WY	Online	Buffalo Bill		Wyoming	Reclamation	Conventional	18,000.00					1992
MT	Online	Canyon Ferry		Montana	Reclamation	Conventional	50,001.00					1953
CO	Online	Estes		Eastern Colorado	Reclamation	Conventional	45,000.00					1950
CO	Online	Flatiron (Unit 1, 2, 3)		Eastern Colorado	Reclamation	Conventional/Pump Storage	94,500.00					1954
WY	Online	Fremont Canyon		Wyoming	Reclamation	Conventional	66,800.00					1960
WY	Online	Glendo		Wyoming	Reclamation	Conventional	38,000.00					1959
CO	Online	Green Mountain		Eastern Colorado	Reclamation	Conventional	26,000.00					1943
WY	Online	Guernsey		Wyoming	Reclamation	Conventional	6,400.00					1928
WY	Online	Heart Mountain		Wyoming	Reclamation	Conventional	5,000.00					1948
WY	Online	Kortes		Wyoming	Reclamation	Conventional	36,000.00					1950
CO	Online	Marys Lake		Eastern Colorado	Reclamation	Conventional	8,100.00					1951
CO	Online	Mt. Elbert PS		Eastern Colorado	Reclamation	Pump Storage	200,000.00					1981
WY	Online	Pilot Butte		Wyoming	Reclamation	Conventional	1,600.00					1929

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
CO	Online	Pole Hill		Eastern Colorado	Reclamation	Conventional	38,238.00					1954
WY	Online	Seminole		Wyoming	Reclamation	Conventional	51,750.00					1939
WY	Online	Shoshone		Wyoming	Reclamation	Conventional	3,000.00					1992
WY	Online	Spirit Mountain		Wyoming	Reclamation	Conventional	4,500.00					1994
MT	Online	Yellowtail		Montana	Reclamation	Conventional	259,374.00					1966
FEDERAL ENERGY REGULATORY COMMISSION PROJECTS												
WY	Online	Garland Canal	3031	Wyoming	Shoshone Irrigation District	Conventional	2,610.00				10/9/1981	~ 1988
MT	Online	Lower Turnbull Drop	12597	Montana	Turnbull Hydro, LLC	Conventional	7,700.00	6/21/2005			7/28/2006	6/22/2011
CO	Online	Ruedi Dam	3603	Western Colorado	City of Aspen	Conventional	3,200.00				9/8/1983	~ 1990
CO	Online	Sugarloaf Dam	3819	Eastern Colorado	STS Hydropower Limited	Conventional	2,800.00				11/18/1982	~ 1987
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	Clark Canyon Dam	14677	Montana	Clark Canyon Hydro, LLC	Conventional	4,700.00	4/20/2015	9/18/2015		3/31/2017	
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		
NE	Preliminary	Medicine Creek Dam	13648	Nebraska-Kansas	Twin Valleys Public Power District	Conventional	800.00	12/30/2009	6/15/2010			

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
MT	Preliminary	Fresno Dam	14751	Montana	Alpine Pacific Utilities Hydro, LLC	Conventional	1,348.00	1/21/2016	4/29/2016			
WY	Preliminary	Black Canyon Pumped Storage Project	14087	Wyoming	Black Canyon Hydro, LLC	Pump Storage	700,000.00	1/25/2011	7/15/2011			
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	Online	Granby Dam	LP11-3	Eastern Colorado	Northern Water Conservancy District	Conventional	1,200.00	4/20/2011	6/26/2012		3/31/2015	5/19/2016
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	7,010.00	4/20/2011	2/27/2012			
MT	Preliminary	Yellowtail Afterbay		Montana	Crow Tribe	Conventional	9,000.00	1/11/2012	3/6/2015			
MT	Preliminary	Helena Valley Pumping Plant		Montana	Helena Valley Irrigation District	Conventional	4,800.00	9/13/2013	8/20/2015			
MT	Request for Development	A Drop		Montana	Turnbull Hydro, LLC	Conventional	1,000.00	6/1/2014				
MT	Request for Development	Johnson Drop		Montana	Turnbull Hydro, LLC	Conventional	700.00	6/1/2014				
MT	Request for Development	Woods Drop		Montana	Turnbull Hydro, LLC	Conventional	900.00	6/1/2014				
FEDERAL ENERGY REGULATORY COMMISSION / LEASE OF POWER PRIVILEGE PUMP STORAGE PROJECTS												
CO	Preliminary	Seminole Pumped Storage Project	14787	Wyoming	Black Canyon Hydro, LLC	Pump Storage	133,300.00	6/13/2016	9/23/2016			

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 Date
RECLAMATION OWNED AND OPERATED (RESERVED WORKS)												
AZ	Online	Davis		Yuma	Reclamation	Conventional	255,000.00					1951
AZ/NV	Online	Hoover		Lower Colorado	Reclamation	Conventional	2,078,800.00					1936
AZ	Online	Parker		Yuma	Reclamation	Conventional	120,000.00					1943
RECLAMATION OWNED AND OPERATED BY OTHERS (TRANSFERRED WORKS)												
AZ	Online	Arizona Falls Powerplant		Phoenix	Salt River Valley Water Users Association	Conventional	750.00					1902
AZ	Online	Cross Cut Powerplant		Phoenix	Salt River Valley Water Users Association	Conventional	3,000.00					1914
AZ	Online	Horse Mesa Powerplant		Phoenix	Salt River Valley Water Users Association	Conventional/Pump Storage	129,000.00					1927
AZ	Online	Mormon Flat Powerplant		Phoenix	Salt River Valley Water Users 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 Users Association	Conventional	4,600.00					1926
AZ	Online	South Consolidated Powerplant		Phoenix	Salt River Valley Water Users Association	Conventional	1,400.00					1912
AZ	Online	Stewart Mountain Powerplant		Phoenix	Salt River Valley Water Users Association	Conventional	10,400.00					1930
AZ	Online	Theodore Roosevelt Powerplant		Phoenix	Salt River Valley Water Users 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

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 Date
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			
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	Laguna Dam		Yuma		Conventional	2,200.00	1/28/2013				
SOLAR PROJECTS												
NV	Online	Boulder City Regional Office Building		Regional Office	Reclamation		276.36					
NV	Online	Boulder City Regional Office Building (parking)		Regional Office	Reclamation		5.97					

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 Date
NV	Online	Hoover Spillway House Renovation		Regional Office	Reclamation		48.00					Aug-13
NV	Online	River Mountains		Regional Office	Southern Nevada Water Authority and SunEdison		14,000.00					Jan-16
NV	In Development	First Solar		Regional Office	First Solar Development, LLC		50,000.00	Jun-14				
CA	In Development	Blythe Office Solar Installation		Regional Office	Reclamation		19.00					
WIND PROJECTS												
AZ	In Development	Mohave County Wind Farm		Regional Office	BP Wind Energy North America		500,000.00					

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 Date
RECLAMATION OWNED AND OPERATED (RESERVED WORKS)												
CA	Online	Folsom		Central California	Reclamation	Conventional	207,000.00					1955
CA	Online	Judge Francis Carr		Northern California	Reclamation	Conventional	154,400.00					1963
CA	Online	Keswick		Northern California	Reclamation	Conventional	117,000.00					1950
CA	Online	Lewiston		Northern California	Reclamation	Conventional	350.00					1964
CA	Online	New Melones		Central California	Reclamation	Conventional	380,000.00					1979
CA	Online	Nimbus		Central California	Reclamation	Conventional	13,500.00					1955
CA	Online	Shasta		Northern California	Reclamation	Conventional	714,000.00					1944
CA	Online	Spring Creek		Northern California	Reclamation	Conventional	180,000.00					1964
CA	Online	Stampede		Lahontan Basin	Reclamation	Conventional	3,650.00					1988
CA	Online	Trinity		Northern California	Reclamation	Conventional	140,000.00					1964
RECLAMATION OWNED AND OPERATED BY OTHERS (TRANSFERRED WORKS)												
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					

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 Date
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	1991
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 and 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 and 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 and 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 and Power Authority	Conventional	2,125.00	11/23/1981			6/8/1982	
CA	Online	Monticello	2780	Central California	Solano Irrigation District	Conventional	11,500.00				1/29/1981	Jun-83
NV	Online	New Lahontan	7828	Lahontan Basin	Truckee-Carson Irrigation District	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	1986
CA	License	Friant Fishwater Release	11068	South Central California	Orange County Irrigation District	Conventional	7,000.00				5/16/1991	
CA	Preliminary	Boca	14728	Lahontan Basin	Pyramid Lake Paiute Tribe	Conventional	1,400.00	11/2/2015	6/8/2016			
CA	Preliminary	Prosser Creek	14726	Lahontan Basin	Pyramid Lake Paiute Tribe	Conventional	3,450.00	11/2/2015	6/8/2016			
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

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 Date
CA	Request for Development	A-C3 (Panicker Drop)		Lahontan Basin	Truckee-Carson Irrigation District	Conventional	125.00	2014				
CA	Request for Development	V-C2 (Lewis Wasteway)		Lahontan Basin	Truckee-Carson Irrigation District	Conventional	250.00	2014				
SOLAR PROJECTS												
CA	In Development	San Luis Facility		South Central California	San Luis Renewables, LLC		26,000.00	8/5/2011				

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 Date
RECLAMATION OWNED AND OPERATED (RESERVED WORKS)												
ID	Online	Anderson Ranch		Snake River	Reclamation	Conventional	40,000.00					1950
ID	Online	Black Canyon		Snake River	Reclamation	Conventional	10,200.00					1925
ID	Online	Boise River Diversion		Snake River	Reclamation	Conventional	3,450.00					1912
WA	Online	Chandler		Columbia Cascades	Reclamation	Conventional	12,000.00					1956
WA	Online	Grand Coulee		Columbia Cascades	Reclamation	Conventional/Pump Storage	6,809,000.00					1941
OR	Online	Green Springs		Columbia Cascades	Reclamation	Conventional	17,290.00					1960
MT	Online	Hungry Horse		Columbia Cascades	Reclamation	Conventional	428,000.00					1952
ID	Online	Minidoka		Snake River	Reclamation	Conventional	27,700.00					1942
ID	Online	Palisades		Snake River	Reclamation	Conventional	176,564.00					1957
WA	Online	Roza		Columbia Cascades	Reclamation	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 Company	Conventional	12,420.00				2/17/1981	3/4/1985
WA	Online	COWICHE	7337	Columbia Cascades	Yakima-Tieton Irrigation District	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

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 Date
WA	Online	ELTOPIA BRANCH CANAL	3842	Columbia Cascades	Columbia Basin Hydropower	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	Columbia Basin Hydropower	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 Irrigation District, 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 Irrigation District	Conventional	1,441.00				7/6/1984	1986
OR	Online	OWYHEE DAM	4354	Snake River	Gem, Owyhee, and Ridgeview Irrigation Districts	Conventional	4,340.00				5/9/1984	1985
OR	Online	OWYHEE TUNNEL NO. 1	4359	Snake River	Gem, Owyhee, and Ridgeview Irrigation Districts	Conventional	8,120.00				2/28/1986	6/1/1983
WA	Online	POTHOLES EAST CANAL	3843	Snake River	Columbia Basin Hydropower	Conventional	2,400.00				12/9/1981	1982
WA	Online	POTHOLES EAST CANAL HEADWORKS	2840	Columbia Cascades	Columbia Basin Hydropower	Conventional	6,500.00				9/21/1982	1991
WA	Online	QUINCY CHUTE	2937	Columbia Cascades	Columbia Basin Hydropower	Conventional	9,367.00				8/20/1982	1983

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 Date
WA	Online	RUSSEL D SMITH PEC 22.7	2926	Columbia Cascades	Columbia Basin Hydropower	Conventional	6,100.00				3/27/1980	1982
WA	Online	SUMMER FALLS	3295	Columbia Cascades	Columbia Basin Hydropower	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	Online	45-Mile	13817	Columbia Cascades	Apple, Inc.	Conventional	5,000.00	7/16/2010		12/17/2010		5/13/2015
OR	Online	Monroe Drop	14430	Columbia Cascades	Apple, Inc.	Conventional	300.00	7/2/2012	3/28/2013	2/18/2015		10/29/2015
ID	License	Mason Dam Hydro	12686	Snake River	Baker County	Conventional	3,400.00	4/25/2006	5/26/2010		9/6/2016	
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	Columbia Basin Hydropower	Conventional	500.00			10/23/1981		
ID	Exemption	MAIN CANAL NO. 6	5038	Snake River	Columbia Basin Hydropower	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	Columbia Basin Hydropower	Conventional	1,750.00	7/29/2011	3/26/2013			
WA	Preliminary	46A Wasteway	14351	Columbia Cascades	Columbia Basin Hydropower	Conventional	1,600.00	7/29/2011	3/26/2013			
WA	Preliminary	McKay Dam	14546	Columbia Cascades	Houtama Hydropower, LLC	Conventional	2,300.00	8/13/2013	2/6/2014			
WA	Preliminary	PEC 1973 Drop	14316	Columbia Cascades	Columbia Basin Hydropower	Conventional	2,200.00	11/8/2011	3/26/2013			
WA	Preliminary	Pinto Dam	14380	Columbia Cascades	Columbia Basin Hydropower	Conventional	3,400.00	4/4/2012	10/10/2012			
WA	Preliminary	Scooteney Inlet Drop	14318	Columbia Cascades	Columbia Basin Hydropower	Conventional	1,700.00	5/31/2011	3/26/2013			
OR	Preliminary	Unity Dam by Warm Springs Hydro	14576	Snake River	Warm Springs Hydro, LLC	Conventional	800.00	1/13/2014	6/16/2014			

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 Date
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	Columbia Basin Hydropower	Pump Storage	1,000,000.00	11/30/2011	8/22/2013			
OR	Preliminary	Prineville Pumped Storage Project	14553	Columbia Cascades	Prineville Energy Storage, LLC	Pump Storage	200,000.00	8/31/2012	7/19/2013			
LEASE OF POWER PRIVILEGE PROJECTS												
OR	Request for Development	43-Mile		Columbia Cascades	TBD	Conventional	TBD	6/8/2017				
OR	Request for Development	48-Mile		Columbia Cascades	TBD	Conventional	TBD	6/8/2017				
OR	Request for Development	50 East		Columbia Cascades	TBD	Conventional	TBD	6/8/2017				
OR	Request for Development	50 West		Columbia Cascades	TBD	Conventional	TBD	6/8/2017				
OR	Request for Development	52 North		Columbia Cascades	TBD	Conventional	TBD	6/8/2017				
OR	Request for Development	53 South		Columbia Cascades	TBD	Conventional	TBD	6/8/2017				
FEDERAL ENERGY REGULATORY COMMISSION / LEASE OF POWER PRIVILEGE PUMP STORAGE PROJECTS												
ID	Preliminary	Anderson Ranch Pump Storage	14655	Snake River	Cat Creek Energy, LLC	Pump Storage	400,000.00	11/5/2014	11/27/2015			
SOLAR PROJECTS												
WA	Online	Grand Coulee Solar		Columbia Cascades	Reclamation		4.70					Oct-12

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 Date
RECLAMATION OWNED AND OPERATED (RESERVED WORKS)												
CO	Online	Blue Mesa		Western Colorado	Reclamation	Conventional	86,400.00					1967
CO	Online	Crystal		Western Colorado	Reclamation	Conventional	31,500.00					1978
NM	Online	Elephant Butte		Albuquerque	Reclamation	Conventional	27,945.00					1940
UT	Online	Flaming Gorge		Provo	Reclamation	Conventional	151,500.00					1963
WY	Online	Fontenelle		Provo	Reclamation	Conventional	10,000.00					1968
AZ	Online	Glen Canyon		Western Colorado	Reclamation	Conventional	1,320,000.00					1965
CO	Online	Lower Molina		Western Colorado	Reclamation	Conventional	5,589.00					1962
CO	Online	Morrow Point		Western Colorado	Reclamation	Conventional	173,334.00					1971
CO	Online	Upper Molina		Western Colorado	Reclamation	Conventional	9,936.00					1962
RECLAMATION OWNED AND OPERATED BY OTHERS (TRANSFERRED WORKS)												
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	4,275.00					1958
UT	Online	Lower Spanish Fork Powerplant		Provo	Strawberry Water Users 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	Central Utah Water Conservancy District	Conventional	10,300.00					1904

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 Date
UT	Online	Payson Powerplant		Provo	Strawberry Water Users 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 Users 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	1987
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	1991
CO	Online	Vallecito Dam	3174	Western Colorado	Ptarmigan Resources and Energy, Inc.	Conventional	5,880.00				10/5/1983	5/1/1989
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			
LEASE OF POWER PRIVILEGE PROJECTS												
CO	Online	Grand Valley Project		Western Colorado	Grand Valley Water Users Association and the Orchard Mesa Irrigation District	Conventional	3,000.00				1933	1938
CO	Online	Jackson Gulch Dam		Western Colorado	Mancos Water Conservancy District	Conventional	260.00				1995	1995
UT	Online	Jordanelle Dam		Provo	Central Utah Water Conservancy District, 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				1988	9/1/1988

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 Date
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	Online	Ridgway Dam		Western Colorado	Tri-County Water Conservancy District	Conventional	7,000.00	6/2/2010			2/6/2012	4/3/2014
CO	Online	Shavano Falls		Western Colorado	Uncompahgre Valley Water Users Association	Conventional	2,800.00	8/21/2013	1/27/2014		6/18/2014	6/24/2015
CO	Online	South Canal (Drop 4)		Western Colorado	Uncompahgre Valley Water Users Association	Conventional	4,800.00	8/21/2013	5/14/2014		9/8/2014	6/24/2015
CO	Online	South Canal (Drop 5)		Western Colorado	Uncompahgre Valley Water Users Association	Conventional	2,400.00	3/3/2015	6/18/2015		11/5/2015	8/12/2016
CO	Contract	South Canal (Drop 2)		Western Colorado	Percheron Power, LLC, Uncompahgre Valley Water Users Association	Hydrodynamic Screw	987.00	5/27/2014	7/29/2014	9/17/2014	12/17/2014	
NM	Posted Solicitation	San Juan Chama Project	LP12-1-000	Albuquerque	Albuquerque Bernalillo County Water Utility Authority	Conventional	100.00	7/6/2012				
CO	Request for Development	Rifle Gap Dam		Western Colorado		Conventional	341.00	4/1/2013				
UT	Request for Development	Mancos Project Outlet Canal		Western Colorado	Mancos Water Conservancy District	Conventional	415.00	3/22/2016				
FEDERAL ENERGY REGULATORY COMMISSION / LEASE OF POWER PRIVILEGE PUMP STORAGE PROJECTS												
UT	Preliminary	Ute Pumped Storage Project	14742	Provo	Ute Tribe	Pump Storage	750,000.00	12/4/2015	9/8/2016			
SOLAR PROJECTS												
UC	Online	Provo Area Office Solar		Provo	Reclamation		24.80					May-16
UC	Online	Alamosa Solar Project		Albuquerque	Reclamation		9.84					Jul-10