

Major Capital Projects¹ - End-of-Project Target Performance

Q3 2023

Project	Description	Direct Capital (\$M) ²			In-Service Date	
		Authorized	Forecast	Actual ³	Authorized	Forecast
Transmission						
Ross-Schultz Fiber	Replace the obsolete and limited 36 strand fiber with standard 72 strand fiber.	\$ 34.0	\$ 44.1	\$ 37.3	09/15/18	11/29/24
MREDI VHF System Replacement P01237	Replace and upgrade the existing VHF radio system.	\$ 96.2	\$ 102.1	\$ 71.2	09/01/26	02/27/26
Spare Transformers at Hub Wind Facilities	Add a spare 500/230 kV single phase transformer at John Day, Rock Creek, Slatt and Central Ferry substations.	\$ 21.4	\$ 23.3	\$ 23.5	04/01/19	06/30/23
Quenett Creek Substation L0380	Construct new substation and associated line work to serve additional N. Wasco PUD load.	\$ 44.9	\$ 58.4	\$ 46.3	06/24/22	03/14/25
Mission Critical IT	Completely replace the Dittmer Data Center IT infrastructure.	\$ 22.5	\$ 21.8	\$ 21.8	12/30/23	07/31/23
Badger Canyon II G0559	Interconnection for Badger Canyon II wind project.	\$ 24.5	\$ 20.1	\$ 2.9	03/11/22	12/25/25
Schultz Wautoma 500kV Series Caps	Install series capacitors	\$ 52.9	\$ 48.0	\$ 14.5	03/15/24	09/27/24
Midway Ashe 230kV Double Circuit	230kV double circuit transmission line from Midway to Ashe Tap	\$ 31.2	\$ 28.5	\$ 10.1	09/30/23	12/01/25
Richland Stevens Dr 115kV Line	Rebuild existing 115kV transmission line, add additional line, rebuild substations	\$ 12.4	\$ 11.2	\$ 3.0	12/18/24	12/18/25
G0367 Avangrid Bakeoven I Wind	Interconnection for Avangrid wind project.	\$ 14.6	\$ 16.8	\$ 16.7	09/01/22	09/01/23
Conkelley Substation Retirement	Retire the Conkelley substation	\$ 29.6	\$ 26.8	\$ 5.0	09/30/25	09/30/25
Columbia Basin Hydro G0560	To interconnect 500 MW to BPA's transmission system at the Grand Coulee 500 kV switchyard.	N/A ⁴	N/A ⁴	\$ -	07/30/26	01/00/00
Ross Station Service	Replacement of the Ross Substation Service	\$ 13.2	\$ 10.2	\$ 2.7	06/30/24	06/30/24
Carlton Sub PCB Bus Tie Addition	Add PCB and bus ties to the Carlton Substation	N/A ⁴	N/A ⁴	\$ 2.5	09/03/24	08/30/24
South Tri Cities Reinforcement	Execute the South Tri-Cities Reinforcement (including building of new Webber Canyon substation)	\$ 112.0	\$ 87.4	\$ 2.4	03/30/25	09/28/25
Big Eddy Station Service	Replacement of the Big Eddy substation station service	N/A ⁴	N/A ⁴	\$ 1.6	08/31/23	03/14/25
Longview Transformer Bank Addition	To install a new 230/115 kV Longview Transformer, bus breaker, and upgrade disconnects.	\$ 12.2	\$ 10.9	\$ 10.3	12/23/22	04/26/24
Longhorn Substation	Build new Longhorn Substation	N/A ⁴	N/A ⁴	\$ 13.0	12/02/24	06/17/25
Schultz Raver Series Cap	Install new capacitors at the Schultz Substation	N/A ⁴	N/A ⁴	\$ 0.0	12/31/25	12/31/25
G0585 G0645 Crider Valley Wind and Solar	Build the Crider Valley Substation to interconnect 513MW of renewable energy (wind and solar)	N/A ⁴	N/A ⁴	\$ -	12/31/25	01/00/00
Jones Canyon 230kV Shunt Reactor Replacement	Replace Jones Canyon 230kV shunt capacitor group 1	N/A ⁴	N/A ⁴	\$ 10.1	05/26/23	05/31/23
Grand Coulee 230kV CLR	To install a current limiting reactor at the GC 230 kV switchyard.	N/A ⁴	N/A ⁴	\$ 0.0	11/30/25	11/30/23
McNary 230 kV Section Bay Addition L0481	To add a new 230 kV section bay at the McNary dam.	N/A ⁴	N/A ⁴	\$ 2.2	01/30/24	12/27/24
McNary Peterson Tap L0405	To install a new 115kV bay at position 11 at McNary substation and installation of new 115kV line segments to existing line.	N/A ⁴	N/A ⁴	\$ 4.1	09/30/24	09/30/24
Bridge Substation	To provide and install a new 230 kV line	N/A ⁴	N/A ⁴	\$ 0.1	08/30/24	08/30/24
Columbia Falls Kalispel-Kerr and Kalispel - Hot Springs fiber	Install fiber optic cable between the Kalispell and Kerr substations, and 22 miles of fiber between the Elmo and Hot Springs substations.	N/A ⁴	N/A ⁴	\$ -	09/30/24	09/30/24
EGP - Buckley Substation	Replace existing Buckley GIS with new AIS 500kV Substation	N/A ⁴	N/A ⁴	\$ -	09/30/27	09/30/27
EGP - West of Boardman	Build a New 500/230kV substation for additional 1000MW of UEC load	N/A ⁴	N/A ⁴	\$ -	12/31/26	12/31/26
EGP - Bonanza Substation	Build a New 500/230/115kV hub substation in Central Oregon	N/A ⁴	N/A ⁴	\$ -	09/30/29	09/30/29
EGP - Tier 1 Transmission Project including: Portland Area, South of Knight, Cross Cascades South, South of Allston, Raver Paul, and Cross Cascades North	Creates capacity on critical Main Grid paths, as well as Portland Area. Project in portfolio will enable 6164 MW of TSRs.	N/A ⁴	N/A ⁴	\$ -	09/30/29	09/30/29
EGP - New La-Pine-Bonanza 23kV Line	New 230kV line to reinforce Central OR grid and enable gen/load interconnections	N/A ⁴	N/A ⁴	\$ -	03/31/29	03/31/29

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Transmission - continued						
Tucannon River 115 kV Shunt Reactor	This is a compliance project. Project will keep the voltages at Tucannon River, Walla Walla and Dayton Substations at or below 1.0 PU for all non outage conditions and at or below 1.05 PU at least 25% of the time in general.	N/A ⁴	N/A ⁴	\$ -	11/29/24	11/29/24
FY22-23 Steel Lines Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 46.8	\$ 34.0	\$ 26.2	09/30/23	09/30/23
FY22-23 Wood Lines Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 64.4	\$ 51.0	\$ 39.7	09/30/24	09/30/24
FY22-23 Access Roads Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 28.3	\$ 42.8	\$ 23.0	09/30/24	09/30/24
FY22-23 Real Property	Two-year asset replacement plan based on asset strategy analysis.	\$ 5.4	\$ 8.8	\$ 3.5	09/30/24	09/30/24
FY22-23 Subs AC Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 84.7	\$ 157.5	\$ 131.1	09/30/24	09/30/24
FY22-23 Line Ratings Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 4.0	\$ 7.0	\$ 5.8	09/30/24	09/30/24
FY22-23 DC Substation Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 4.0	\$ 6.6	\$ 5.7	09/30/24	09/30/24
FY22-23 System Telecom Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 44.5	\$ 30.5	\$ 21.2	09/30/24	09/30/24
FY22-23 PSC Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 49.3	\$ 74.0	\$ 63.1	09/30/24	09/30/24
FY22-23 SPC Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 41.0	\$ 52.7	\$ 44.8	09/30/24	09/30/24
FY22-23 Control Centers Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 10.8	\$ 25.5	\$ 17.3	09/30/24	09/30/24
FY22-23 TEAP Tools Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 2.0	\$ 2.2	\$ 2.3	09/30/24	09/30/24
FY22-23 Aircraft Sustain	Two-year asset replacement plan based on asset strategy analysis.	\$ 7.0	\$ 17.3	\$ 7.1	09/30/24	09/30/24

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Federal Hydro						
Hungry Horse // HGH Cranes and Controls	Replace two powerhouse bridge cranes, forebay gantry crane, machine shop crane and valve house crane.	\$ 17.1	\$ 18.2	\$ 18.2	04/30/21	08/01/23
Libby // LIB Intake Gantry Crane	Replace Intake Gantry Crane	\$ 12.8	\$ 17.8	\$ 2.7	11/30/22	12/29/23
Libby // Libby Unit 6	Complete the sixth generating unit at Libby dam.	N/A ⁴	N/A ⁴	\$ 3.6	08/30/27	08/30/27
Grand Coulee // GCL Units G11-G18 Transformer Replacements	Replace 24 single-phase transformers in the Right Powerhouse.	N/A ⁴	N/A ⁴	\$ 1.0	03/20/19	04/30/27
Grand Coulee John W. Keys PGP // Keys PGP Reliability Replacements	Replacements and upgrades to maintain current station capability.	\$ 66.3	\$ 72.1	\$ 38.3	09/30/24	03/31/24
Grand Coulee // GCL Firehouse	Build a stand-alone fire station to replace the facility currently housed in the pump-generating plant.	\$ 15.1	\$ 17.6	\$ 12.7	05/14/18	12/31/22
Grand Coulee // GCL LPH/RPH Bridge Crane Replacements	Replace the four bridge cranes in the left and right powerhouses.	\$ 25.2	\$ 34.4	\$ 2.8	07/03/20	05/31/24
Chief Joseph // CHJ Intake Gantry Crane	Replace the intake gantry crane	\$ 19.2	\$ 19.2	\$ 5.1	01/31/23	08/30/24
Chief Joseph // CHJ Station Service Units	Rehabilitate the Station Service units.	\$ 12.8	\$ 20.0	\$ 4.6	09/30/24	03/31/26
Chief Joseph // CHJ Powerbus Units 1-16	Refurbish and replace portions of the power bus	N/A ⁴	N/A ⁴	\$ 0.9	12/01/25	12/01/25
McNary // MCN Governors	Upgrade the 14 governors in the McNary powerhouse with digital controls.	\$ 21.2	\$ 20.8	\$ 6.0	02/22/24	12/31/26
McNary // MCN Exciters	Replace the exciters to ensure reliability and support the other electrical powertrain upgrades.	\$ 25.6	\$ 23.6	\$ 8.7	08/24/24	12/31/26
McNary // MCN Powerhouse Control System Upgrade	Replace the generally original controls to improve reliability and performance.	\$ 17.2	\$ 15.3	\$ 9.8	05/26/24	12/31/26
McNary // MCN Turbine Design and Replacement	Replace turbine runners 1 - 14 and rewind units 5, 13 and 14.	\$ 533.1	\$ 500.2	\$ 22.0	10/07/33	12/07/32
McNary // MCN Intake Gantry Crane	Replace the 1953 vintage intake gantry crane. Upgrade the hoist capability to match current needs.	N/A ⁴	N/A ⁴	\$ 14.2	04/23/24	09/29/23
McNary // MCN Governor Mechanical System Rehabilitation	Upgrade the governor mechanical system	\$ 12.5	\$ 9.9	\$ 3.8	10/31/25	10/31/25
McNary Levee Pumping Station Upgrades	Replace the existing pumps and electrical with new equipment at some or all 11 pumping plants.	N/A ⁴	N/A ⁴	\$ 4.2	07/30/27	07/30/27
John Day // JDA Turbine Hub Upgrades and Fixed Blade Conversions	Rebuild and upgrade up to five turbine runner hubs. Four additional hubs may be rebuilt under a future amendment to this project.	\$ 40.9	\$ 34.2	\$ 23.4	06/30/19	10/31/28
John Day // Control Room Fire Protection	Upgrade fire protection, ventilation and egress paths in the control room and powerhouse.	\$ 13.3	\$ 12.6	\$ 7.7	11/14/23	10/01/23
John Day // JDA Trashracks	Replace and refurbish the trashracks	\$ 19.5	\$ 17.4	\$ 2.9	04/15/26	04/15/26
John Day // JDA STS Crane	Replace the submerged traveling screens crane	\$ 14.4	\$ 14.4	\$ 4.7	12/02/22	07/01/24
The Dalles // TDA Emergency Gantry Crane	Replace the emergency intake gantry crane.	\$ 19.4	\$ 26.1	\$ 17.3	02/01/23	12/20/23
Bonneville // BON 1 Trashracks	Replace and refurbish the trashracks in Powerhouse 1	N/A ⁴	N/A ⁴	\$ 2.7	09/02/25	04/01/27
BON // Main Unit Breaker Replacement	Replace the main unit breakers, as per the scope of the previous MUB and Station Service project.	N/A ⁴	N/A ⁴	\$ 0.6	12/30/27	12/30/27
Lower Granite // LWG MU2 Blade Sleeve Upgrade and Rehabilitation	Upgrade each of the six blade packing sleeves on Main Unit 2.	N/A ⁴	N/A ⁴	\$ 0.5	09/30/25	12/31/26
Ice Harbor // IHR Turbine Replacement	Replace poor condition turbine runners in units 1, 2 & 3 with a more fish-friendly design.	\$ 113.8	\$ 115.7	\$ 95.2	03/31/21	06/30/25
Ice Harbor // Ice Harbor Units 1-3 Stator Winding Replacements	Replace the stator windings for units 1,2 and 3.	\$ 24.1	\$ 33.9	\$ 24.8	03/31/21	06/30/25
Detroit // Transformers	Replace and relocate 6 transformers	N/A ⁴	N/A ⁴	\$ 1.7	12/02/24	09/01/26

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Federal Hydro - continued						
Black Canyon Third Generating Unit	Add a third generating unit at Black Canyon. The capacity of the unit will be between 10 and 15 MW.	N/A ⁴	N/A ⁴	\$ 7.2	N/A	N/A
Foster // Electrical Reliability Upgrades	Replace the station service distribution equipment, emergency generator and air compressors.	\$ 10.9	\$ 11.6	\$ 4.9	10/02/23	04/05/24
Foster // Turbine and Generator Rehabilitation	Rehabilitate turbine and generators on two units.	N/A ⁴	N/A ⁴	\$ 2.0	09/11/24	09/11/24
John Day // JDA HVAC	Upgrade the HVAC system and fire protection systems in the powerhouse	N/A ⁴	N/A ⁴	\$ 1.8	04/04/25	04/04/25
McNary // MCN Headgate System Rehabilitation	Rehabilitate the Headgate System and purchase bulkheads	\$ 74.7	\$ 101.0	\$ 7.2	05/30/31	05/30/31
McNary // MCN IsoPhase Bus	Replace the isophase bus	\$ 46.1	\$ 69.5	\$ 1.8	12/31/29	12/31/29
McNary // MCN Station Service Turbines	Rehabilitate the two station service turbines at the dam	\$ 17.9	\$ 18.8	\$ 9.0	10/31/23	05/01/24
Hills Creek // HCR Main Unit Breakers	Replace Main Unit Breakers at Hills Creek	N/A ⁴	N/A ⁴	\$ 3.5	11/01/23	05/01/25
Lower Monumental // LMN DC System and LV Switchgear Replacement	Replace the DC System and the LV Switchgear at Lower Monumental	\$ 17.5	\$ 18.5	\$ 3.2	09/16/24	04/30/25
Grand Coulee // GCL K22 Transformer Replacement	Replace the bank of transformers associated with unit G22	N/A ⁴	N/A ⁴	\$ 1.0	04/30/25	04/30/25
Chief Joseph // CHJ Units 1-16 Generator Rewinds	Rewind units 1-16	\$ 200.8	\$ 200.8	\$ 2.4	09/30/30	09/30/30
Chief Joseph // CHJ SU1-4	Upgrade 480V Station Power SU1-4 MCC Boards	N/A ⁴	N/A ⁴	\$ 1.2	09/09/23	12/31/24
John Day // Turbine Runners and Generator Rewinds DESIGN	Replace turbines and rewind generators on a TBD number of units at John Day (design work only)	N/A ⁴	N/A ⁴	\$ 15.4	09/30/23	09/30/23
Little Goose // LGS DC System and LV Switchgear Replacement	Replace the DC System and the LV Switchgear at Little Goose	\$ 24.9	\$ 24.9	\$ 2.2	03/30/25	04/15/26
Chief Joseph // CHJ Exciter Units 1-16	Replace exciters on units 1-16	N/A ⁴	N/A ⁴	\$ 0.6	09/30/25	09/30/26
McNary // MCN Drainage, Unwatering and Equalization System Rehabilitation	Rehab the DUE system at McNary	\$ 14.6	\$ 14.3	\$ 1.8	06/28/24	06/28/24
Anderson // AND Turbine Runner Replacement	Replace the two turbine runners at Anderson Ranch.	N/A ⁴	N/A ⁴	\$ 1.1	05/01/27	05/01/27
Ice Harbor // Ice Harbor Intake Gate Hydraulic System Upgrade	Upgrade the hydraulic system at Ice Harbor	N/A ⁴	N/A ⁴	\$ 0.8	06/30/25	06/30/25

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Security						
Sno-King Sub Security Upgrades	To upgrade and enhance the security infrastructure at the Sno-King substation	\$ 5.8	\$ 5.3	\$ 5.4	9/30/23	9/30/24
Tacoma Sub Security Enhancement	To upgrade and enhance the security infrastructure at the Tacoma substation	\$ 11.0	\$ 10.1	\$ 4.8	9/30/23	9/30/24

Facilities						
Technical Services Building	Construct a new building to replace the North and South Ampere facilities	\$ 62.5	\$ 61.1	\$ 55.9	9/30/23	09/29/23
Vancouver Control Center	Design phase of a new building on the Ross Complex to replace Dittmer Control Center	\$ 45.0	\$ 36.6	\$ 19.2	5/11/26	12/30/26
Ross Ampere Demo & Site Development	Demolition and removal of N/S Ampere, Untanking Tower, and decom Wash Rack facilities	\$ 27.9	\$ 25.2	\$ 0.2	12/27/24	12/02/24
Ross Z-1255 HazMat Building Adaptive Reuse	Adaptive reuse renovations that will create workspaces necessary for full utilization of the existing facility.	\$ 9.9	\$ 9.9	\$ 4.3	9/30/23	12/29/23
Ross Chemistry and Calibration Lab	Provide a lifecycle replacement of the N and S Ampere facilities to improve workplace safety and efficiency, and reduce O&M.	N/A ⁴	N/A ⁴	\$ -	12/31/24	12/31/24

Fleet						
Fleet FY21-FY23	Fleet program capital asset purchases	\$ 27.3	\$ 21.5	\$ 17.0	9/30/23	09/30/23

Information Technology						
Customer Billing Center Replacement (CBC)	The CBC is where the monthly bills for customers are handled, resulting in over \$4B annual revenue. System enhancements support production of timely and accurate bills.	N/A ⁴	N/A ⁴	\$ 5.7	10/31/23	11/30/24

Summary		
Transmission	\$ 803.7	\$ 847.7
Federal Hydro	\$ 1,430.9	\$ 1,482.8
Security	\$ 16.8	\$ 15.4
Facilities	\$ 145.3	\$ 132.7
Fleet	\$ 27.3	\$ 21.5
Information Technology	N/A ⁴	N/A ⁴
Total	\$ 2,424.0	\$ 2,500.2

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