

# Major Capital Projects<sup>1</sup> - End-of-Project Target Performance

Q2 2012

Project	Description	Direct Capital \$M <sup>2</sup>			In-Service Date	
		Target	Forecast	Actual <sup>3</sup>	Target	Forecast
<b>Transmission</b>						
Spacer Damper Replacement Program (FY08-12)	Replace all spring type double and triple bundle spacer-dampers on the 500 kV system.	\$ 65.2	\$ 45.8	\$ 43.1	9/30/12	9/30/12
Sustain Steel Program Defective Damper Replacements	Replace approximately 1,700 mile of defective PPI spacer dampers.	\$ 15.0	\$ 14.7	\$ 2.1	Achieve 90% to 120% of workplan for FY12	Achieve 107% of workplan for FY12
Spectrum Relocation (3G 1710-1755 MHz Project)	Vacate radio frequencies as required by P.L. 108-494.	\$ 48.6	\$ 43.8	\$ 27.1	3/31/13	3/31/13
Land Acquisition and Rebuilds (Access Roads)	Includes road improvements in or near transmission corridors.	\$ 15.5	\$ 19.0	\$ 18.2	9/30/10	11/30/12
500 kV Spare Transformer Project	Acquire 5 spares and relocate 2 existing transformers to be used as spares. The spares will be placed strategically across the system.	\$ 41.0	\$ 41.0	\$ 30.2	12/31/13	12/30/13
FY10 - TEAP Fleet Equipment Replacement Program	Heavy duty and specialized vehicle replacement program for FY10, FY11 and part of FY12.	\$ 29.6	\$ 27.7	\$ 18.1	3/31/12	9/15/13
Lower Mid-Columbia 230 kV Project	Increase capacity between Vantage/Wanapum and Midway.	\$ 13.2	\$ 12.6	\$ 12.4	5/1/11	3/30/12
Redmond 230 - 115 kV Transformer Addition	Install an additional transformer at the Redmond substation.	\$ 12.0	\$ 14.8	\$ 14.8	11/1/11	4/30/12
#KC SONET Phase II Spur Healing	Complete the digital microwave and radio conversion in Oregon.	\$ 18.0	\$ 17.8	\$ 8.4	10/1/12	12/15/14
#NC Analog Microwave Replacement	Complete the digital microwave and radio conversion in NW Washington.	\$ 13.6	\$ 9.6	\$ 3.9	9/1/13	12/15/14
Alvey Substation 500 kV Shunt Reactor	Add a 500 kV shunt reactor for voltage stabilization.	\$ 10.9	\$ 8.7	\$ 3.6	4/30/12	10/31/13
West of McNary Reinforcement - Group 1 McNary - John Day	West of McNary reinforcement project - group 1	\$ 246.5	\$ 144.2	\$ 141.9	12/31/12	12/1/12
NEPA - I-5 Corridor Reinforcement	Conduct NEPA study, preliminary engineering and design.	\$ 45.0	\$ 42.2	\$ 23.1	1/11/13	1/11/13
West of McNary Reinforcement Group 2 Big Eddy Knight	New 500 kV substation and 28 miles of 500 kV transmission line.	\$ 180.0	\$ 165.0	\$ 58.9	Substation Energized 3/31/2013 Shunt Reactor Energized 11/30/14	Substation Energized 2/28/2013 Shunt Reactor Energized 9/30/14
Condon Wind Voltage Control	Install ring bus, transformer bank and breaker to control voltage fluctuations on the DeMoss-Fossil-Maupin 69kV line.	\$ 9.4	\$ 11.8	\$ 7.4	5/31/11	11/30/12
DC RAS Upgrade	Replace the DC RAS controllers at Celilo with upgraded units at the Ross and Munro control centers.	\$ 11.8	\$ 11.8	\$ 3.5	11/30/13	11/30/13

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Ostrander 500-230 kV Transformer Bank Addition	Replace transformer bank at McLoughlin with a new transformer bank at Ostrander.	\$ 22.4	\$ 20.1	\$ 19.0	11/30/11	9/28/12
Synchrophasor Project	5-year effort to acquire, install, test, and implement synchronized Wide Area Measurement (WAM) and control technology at BPA.	\$17.2 to \$18.1	\$ 32.5	\$ 8.9	Achieve FY12 items in workplan	All FY12 items forecast to be delivered
Wood Pole Line Sustain Program FY10 - FY13	Implement a stable, sustained wood pole replacement program. The four year plan includes cumulative cost and work plan completion targets.	\$75.1 to \$93.9 for FY10 - FY12	\$ 92.5	\$ 61.7	Achieve 90% to 100% of workplan and 270 miles	<80% of workplan and 203 miles
Steel Lines Sustain Program FY11 - FY13	Implement a stable, sustained steel line replacement program. The four year plan includes cumulative cost and work plan completion targets.	\$12.9 to \$16.1 for FY11 - FY12	\$ 20.8	\$ 7.4	Achieve 90% to 150% of workplan	90%
System Protection and Control (SPC) Sustain Program FY11 - FY13	Implement a stable, sustained SPC replacement program. The four year plan includes cumulative cost and work plan completion targets.	\$17.5 to \$21.9 for FY11- FY12	\$ 11.6	\$ 6.1	Achieve 90% to 100% of workplan	~50%
Control Replacement COI Series Capacitors	Replace the protection and control systems for the series capacitor banks for the California-Oregon Intertie.	\$ 15.7	\$ 15.1	\$ 0.3	3/30/14	2/11/14
Ross - Schultz Fiber Replacement	Replace the obsolete and limited 36 strand fiber with standard 72 strand fiber.	\$ 34.0	\$ 31.9	\$ 0.1	9/15/17	2/1/17
#DC Microwave Analog Spur Replacement	Complete the digital microwave and radio conversion in Northeast Washington.	\$ 39.5	\$ 29.8	\$ 1.7	8/30/17	6/7/17
Central Oregon Transformer Addition	Install a second 500/230 kV transformer bank at BPA's Ponderosa substation.	\$ 29.1	\$ 27.3	\$ 5.6	10/31/13	7/31/13
Central Ferry to Lower Monumental (Little Goose Area Reinforcement)	Construct a 38 mile 500 kV transmission line between Central Ferry and Lower Monumental substations.	\$ 90.0	\$ 82.0	\$ 8.9	12/31/13	12/31/13
Celilo Mercury Containment and Abatement	Contain and abate the mercury contamination at the Celilo Converter Station.	\$ 10.8	\$ 10.9	\$ 4.2	5/31/13	5/31/13
Central Ferry Generation Interconnection	Generation interconnection request. Construction of a new 500/230 kV substation and related fiber communications work.	\$ 98.4	\$ 86.9	\$ 71.6	5/30/12	5/30/12 for line 12/27/13 for fiber

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Rights-of-Way Access Roads and Land Rights Acquisition Program FY12 to FY15	Initial authorization of \$15.9 million for FY 2012 and \$11.0 million for FY 2013. Targets to be established after IPR review.	<\$15.9 for FY12 <\$11.0 for 2013	\$8.2 for FY12 \$9.6 for 2013	\$ 0.5	9/30/13	9/30/13
Jordan Butte 1 and 2 Wind Generation Interconnection	Generation interconnection request G0362. Design and construct a new 500/230 kV Longhorn substation.	\$ 50.9	\$ 47.2	\$ 0.0	12/1/14	12/1/14
Summit Ridge Wind Generation Interconnection	Generation interconnection request. Install a new 230 kV ring bus to loop in the Big Eddy - Maupin 230 kV line.	\$ 11.3	\$ 11.3	\$ -	9/1/13	9/1/13
P25 Two-Way Mobile Radio Upgrade	Replace and upgrade the mobile two-way radio system to P25 technology.	\$ 64.5	\$ 64.5	\$ 0.4	9/30/17	9/30/17
Switchgear Replacement for Fault Duty FY12	Replace under-rated switchgear identified in annual screening process.	\$ 14.9	\$ 12.6	\$ -	12/31/14	10/31/13

<b>Federal Hydro</b>						
Grand Coulee and Hungry Horse SCADA Replacement	Replace SCADA systems at Grand Coulee and Hungry Horse.	\$ 46.8	\$ 46.8	\$ 25.5	9/30/15	9/30/15
Grand Coulee Exciter Replacement	Replace 6 original excitation units in Powerhouse 3.	\$ 20.9	\$ 19.9	\$ 13.3	11/30/13	11/30/13
Grand Coulee Transformer Replacement (G19, G20)	Replace 2 banks (6 single phase transformers) in the third powerhouse, units G19 and G20.	\$ 54.1	\$ 29.5	\$ 27.3	11/30/13	11/30/13
Grand Coulee Left Powerhouse Transformer Replacement	Replace transformer banks K1, K5, K7, K8 and purchase one spare transformer bank.	\$ 15.7	\$ 15.7	\$ 5.8	10/31/14	10/31/14
Grand Coulee Pre Overhaul - Winding Replacement G19, G20	Replace the stator core and windings on units G19 and G20.	<sup>4</sup> N/A	<sup>4</sup> N/A	\$ 0.3	5/31/13	5/31/13
Grand Coulee Pre Overhaul - Crane Rehabilitation	Complete refurbishment of the six third power plant cranes.	\$ 23.4	\$ 23.4	\$ 9.4	12/31/12	12/31/12
Grand Coulee Pre Overhaul - High Voltage Cable Replace.	Install overhead, high-voltage cables to transfer power from the third power plant.	\$ 46.7	\$ 46.7	\$ 8.8	12/31/12	12/31/12
Grand Coulee Pre Overhaul - Materials Storage Building	Construct a storage building to create the space needed in the third power plant.	\$ 10.2	\$ 10.2	\$ 4.3	2/28/13	1/31/13
Chief Joseph Turbine Runner Replacement for Units 5 - 14	Target 1 - Complete 3 units by the end of FY 2011	\$ 111.0	\$ 101.5	\$ 25.3	9/30/15	9/30/15
Chief Joseph Turbine Runner Replacement, Units 1 - 4, 15 - 16	Replace the turbine runners and rehabilitate the turbines on units 1 - 4, 15 - 16.	\$ 62.9	\$ 62.9	\$ -	4/1/17	4/1/17

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The Dalles Powerhouse Roof Replacement	Replace the entire powerhouse roof.	\$ 7.0	\$ 7.0	\$ 3.0	10/30/12	11/6/12
The Dalles Powerhouse Governor Upgrade	Upgrade of the governors with digital controls and replacement of associated components.	\$ 21.8	\$ 21.8	\$ 1.0	9/30/14	9/30/14
McNary Main Unit 1-4, 7-12 Stator Winding Replacement	Replace stator windings that are over 50 years old.	\$ 80.0	\$ 80.0	\$ 38.0	12/31/14	12/13/14
Bonneville PH2 Station Services Replacement	Upgrade Powerhouse 2 station service with new transformers and switchgear.	\$ 12.1	\$ 12.1	\$ 5.6	5/31/13	5/31/13
John Day Governor Upgrade	Upgrade of the governors with digital controls and replacement of associated components.	<sup>4</sup> N/A	<sup>4</sup> N/A	\$ 0.1	10/23/14	10/23/15
Ice Harbor Turbine Runner Replacement	Replace the poor condition turbine runners in units 2 & 3 and incorporate a more fish-friendly design.	\$ 68.4	\$ 68.4	\$ 6.7	7/31/15	6/15/15
Lower Snake Exciter Replacement	Replace 6 exciters at Little Goose, 3 at Lower Monumental and 3 at Lower Granite.	\$ 12.9	\$ 12.9	\$ 5.3	2/27/13	2/27/13
Hills Creek Powerhouse Turbine and Unit Rehabilitation	Replace turbine runners and generator windings on units 1 and 2 at Hills Creek.	\$ 24.1	\$ 24.1	\$ 2.3	8/12/14	3/31/15
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.	<sup>4</sup> N/A	<sup>4</sup> N/A	\$ 2.5	12/31/14	12/31/14
Palisades Turbine Rehabilitation and Runner Replacement	Replace the turbine runners and rehabilitate the turbines on the four Palisades units.	\$ 28.8	\$ 28.8	\$ 2.1	5/31/16	5/31/16
Dexter Spillway Gate Rehabilitation	Rebuild the seven Tainter spillway gates at Dexter.	\$ 18.0	\$ 16.7	\$ 14.1	9/15/13	12/20/12
Big Cliff Spillway Gate Rehabilitation	Rebuild the three Tainter spillway gates at Big Cliff.	<sup>4</sup> N/A	<sup>4</sup> N/A	\$ 0.5	12/30/13	12/30/13
<b>IT</b>						
RODS Replacement Project	Develop, build and deploy hardware and software to replace the current RODS functionality.	\$ 14.9	\$ 14.8	\$ 11.4	9/30/12	9/30/12
Transmission Asset System (TAS)	Develop a single, comprehensive database and associated tools for asset management.	\$ 10.2	\$ 10.0	\$ 10.0	7/31/11	2/29/12
Data Center Modernization	Modernize system hardware, software, and support tools for the data centers at Headquarters, Ross and Munro.	\$ 13.4	\$ 23.6	\$ 23.3	4/28/12	4/13/12
Data Storage Modernization (combined with Data Center Modernization)	Implement a new data storage architecture and replace existing storage hardware, while adding software for system monitoring, alerting and capacity planning.	\$ 13.4			9/30/12	

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