DOE/CF-0124
Volume 6

Department of Energy
FY 2017 Congressional Budget Request

Power Marketing Administrations

Southeastern Power Administration
Southwestern Power Administration
Western Area Power Administration
Bonneville Power Administration

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February 2016 Office of Chief Financial Officer Volume 6

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FY 2015 Congressional Budget Request

Volume 6

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FUNDING BY APPROPRIATION

	($K)					
	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request[1]	FY 2017 vs. FY 2016 $	FY 2017 vs. FY 2016 %
Department of Energy Budget by Appropriation						
Energy and Water Development, and Related Agencies						
Energy Programs						
Energy Efficiency and Renewable Energy	1,914,195	1,840,847	2,069,194	2,898,400	+829,206	+40.1%
Electricity Delivery and Energy Reliability	146,975	143,901	206,000	262,300	+56,300	+27.3%
Nuclear Energy	833,379	821,883	986,161	993,896	+7,735	+0.8%
Office of Technology Transitions	0	0	0	8,400	+8,400	N/A
21st Century Clean Transportation Plan Investments	0	0	0	1,335,000	+1,335,000	N/A
Fossil Energy Programs						
Clean Coal Technology	-6,600	-2,876	0	0	0	N/A
Fossil Energy Research and Development	560,587	548,885	632,000	600,000	-32,000	-5.1%
Use of Prior Year Balances	0	0	0	-240,000	0	N/A
Naval Petroleum and Oil Shale Reserves	19,950	20,640	17,500	14,950	-2,550	-14.6%
Elk Hills School Lands Fund	15,580	15,580	0	0	0	N/A
Strategic Petroleum Reserve	200,000	200,000	212,000	257,000	+45,000	+21.2%
Northeast Home Heating Oil Reserve	1,600	1,600	7,600	6,500	-1,100	-14.5%
Total, Fossil Energy Programs	**791,117**	**783,829**	**869,100**	**638,450**	**-230,650**	**-26.5%**
Uranium Enrichment Decontamination and Decommissioning (UED&D) Fund	625,000	625,000	673,749	673,749	0	N/A
Energy Information Administration	117,000	117,000	122,000	131,125	+9,125	+7.5%
Non-Defense Environmental Cleanup	246,000	246,030	255,000	218,400	-36,600	-14.4%
Science	5,067,738	5,132,813	5,347,000	5,672,069	+325,069	+6.1%
Advanced Research Projects Agency - Energy (ARPA-E)	279,982	279,982	291,000	500,000	+209,000	+71.8%
Departmental Administration	125,043	135,686	130,971	144,866	+13,895	+10.6%
Office of Indian Energy	0	0	0	22,930	+22,930	N/A
Office of the Inspector General	40,500	40,500	46,424	44,424	-2,000	-4.3%
Title 17 - Innovative Technology Loan Guarantee Program	17,000	17,000	17,000	10,000	-7,000	-41.2%
Advanced Technology Vehicles Manufacturing Loan Program	4,000	4,000	6,000	5,000	-1,000	-16.7%
Total, Energy Programs	**10,207,929**	**10,188,471**	**11,019,599**	**13,559,009**	**+2,539,410**	**+23.0%**
Atomic Energy Defense Activities						
National Nuclear Security Administration						
Weapons Activities	8,180,359	8,180,609	8,846,948	9,243,147	+396,199	+4.5%
Defense Nuclear Nonproliferation	1,615,248	1,612,651	1,940,302	1,807,916	-132,386	-6.8%
Naval Reactors	1,233,840	1,233,840	1,375,496	1,420,120	+44,624	+3.2%
Office of the Administrator	-413	-413	0	0	0	N/A
Federal Salaries and Expenses	370,000	370,000	363,766	412,817	+49,051	+13.5%
Total, National Nuclear Security Administration	**11,399,034**	**11,396,687**	**12,526,512**	**12,884,000**	**+357,488**	**+2.9%**
Environmental and Other Defense Activities						
Defense Environmental Cleanup	4,990,017	4,989,555	5,289,742	5,226,950	-62,792	-1.2%
Other Defense Activities	753,449	753,449	776,425	791,552	+15,127	+1.9%
Total, Environmental and Other Defense Activities	**5,743,466**	**5,743,004**	**6,066,167**	**6,018,502**	**-47,665**	**-0.8%**
Total, Atomic Energy Defense Activities	**17,142,500**	**17,139,691**	**18,592,679**	**18,902,502**	**+309,823**	**+1.7%**
Power Marketing Administrations						
Southeastern Power Administration	0	0	0	0	0	N/A
Southwestern Power Administration	11,400	11,400	11,400	11,057	-343	-3.0%
Western Area Power Administration	91,740	91,740	93,372	95,581	+2,209	+2.4%
Falcon and Amistad Operating and Maintenance Fund	228	228	228	232	+4	+1.8%
Colorado River Basins Power Marketing Fund	-23,000	-23,000	-23,000	-23,000	0	N/A
Total, Power Marketing Administrations	**80,368**	**80,368**	**82,000**	**83,870**	**+1,870**	**+2.3%**
Federal Energy Regulatory Commission (FERC)	0	0	0	0	0	N/A
Subtotal, Energy and Water Development and Related Agencies	**27,430,797**	**27,408,530**	**29,694,278**	**32,545,381**	**+2,851,103**	**+9.6%**
Uranium Enrichment Decontamination and Decommissioning Fund Discretionary Payments	-463,000	-463,000	0	-155,100	-155,100	N/A
Uranium Enrichment Decontamination and Decommissioning Fund Contribution	463,000	463,000	0	155,100	+155,100	N/A
Excess Fees and Recoveries, FERC	-28,485	-17,325	-23,587	-9,426	+14,161	+60.0%
Title XVII Loan Guarantee Program Section 1703 Negative Credit Subsidy Receipt	0	0	-68,000	-37,000	+31,000	+45.6%
Total, Funding by Appropriation	**27,402,312**	**27,391,205**	**29,602,691**	**32,498,955**	**+2,896,264**	**+9.8%**

[1] FY 2017 Request includes mandatory spending: $1.335B for Clean Transportation Plan, $674M for UED&D Fund, $150M for ARPA-E, and $100M for Science.

Southeastern Power Administration

Southeastern Power Administration

Southeastern Power Administration
Proposed Appropriation Language

For necessary expenses of operation and maintenance of power transmission facilities and of marketing electric power and energy, including transmission wheeling and ancillary services, and including official reception and representation expenses in an amount not to exceed $1,500, pursuant to section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), as applied to the Southeastern Power Administration (Southeastern or SEPA) marketing area, [$6,900,000] *$1,000,000*, to remain available until expended: Provided, That notwithstanding 31 U.S.C. 3302 and section 5 of the Flood Control Act of 1944, up to [$6,900,000] *$1,000,000*, collected by the Southeastern Power Administration from the sale of power and related services shall be credited to this account as discretionary offsetting collections, to remain available until expended for the sole purpose of funding the annual expenses of the Southeastern Power Administration: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year [2016] *2017* appropriation estimated at not more than $0: Provided further, That, notwithstanding 31 U.S.C. 3302, up to [$66,500,000] *$60,760,000* collected by the Southeastern Power Administration pursuant to the Flood Control Act of 1944 to recover purchase power and wheeling expenses shall be credited to this account as offsetting collections, to remain available until expended for the sole purpose of making purchase power and wheeling expenditures: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred (excluding purchase power and wheeling expenses).

Explanation of Changes

No changes.

Public Law Authorizations:
Public Law 78-534, Flood Control Act of 1944
Public Law 95-91, DOE Organization Act of 1977, Section 302
Public Law 101-1-1, Title III, Continuing Fund (amended 1989)
Public Law 102-486, Energy Policy Act of 1992

Southeastern Power Administration

($K)			
FY 2015 Enacted	**FY 2015 Current**	**FY 2016 Enacted**	**FY 2017 Request**
96,930	96,930	90,500	84,929
-96,930	-96,930	-90,500	-84,929
0	0	0	0

Overview

Southeastern Power Administration (Southeastern or SEPA) exists to carry out the functions assigned by the Flood Control Act of 1944: to market the electric power and energy generated by the Federal reservoir projects to public bodies and cooperatives in the southeastern United States in a professional, innovative, customer-oriented manner, while continuing to meet the challenges of an ever-changing electric utility environment through continuous improvement. Southeastern provides 486 public power customers with 3,392 megawatts of hydroelectric capacity from 22 Federal multipurpose projects, operated by the U.S. Army Corps of Engineers (Corps) at cost based rates.

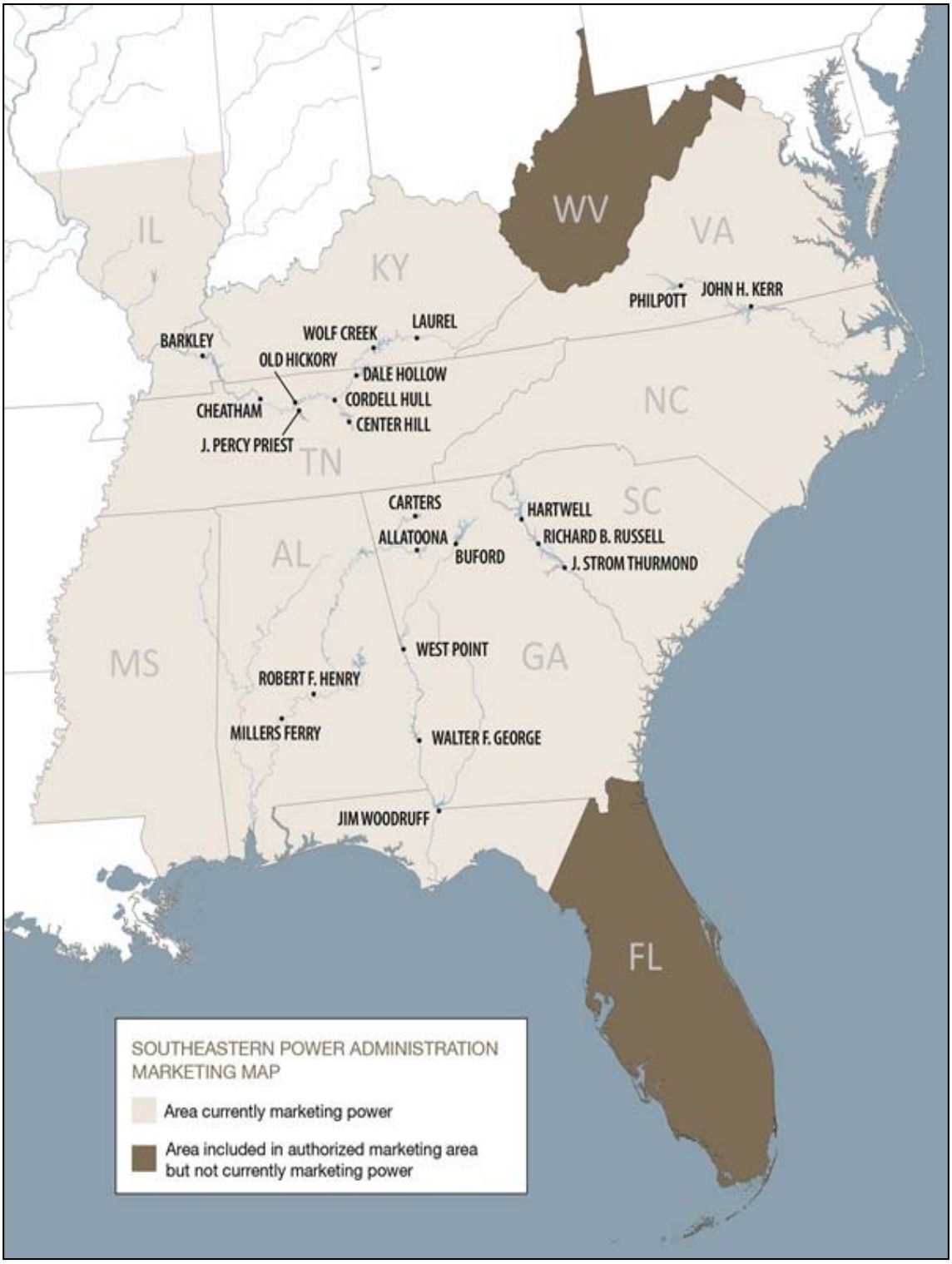
Southeastern contributes to the Administration's efforts to secure America's clean energy future by generating clean hydroelectric power without carbon emissions. Annually, Southeastern produces an average of 7,772 gigawatt-hours of clean renewable hydroelectric energy. This energy production reduces emissions of carbon dioxide by 6.4 million tons per year, sulfur dioxide by 19,400 tons per year, and nitrogen oxides by 8,100 tons per year. Without the clean renewable hydropower from Southeastern, 13 million barrels of fuel oil, 4 million tons of coal, or 66 billion cubic feet of natural gas would be depleted each year. Southeastern maintains and upgrades its energy infrastructure to ensure reliable and efficient delivery of Federal power. Southeastern promotes energy efficiency, renewable energy, and sound management of the dispatch and distribution of Federal hydroelectric power resources in the southeastern United States while also meeting national utility performance standards and balancing the diverse interests of other water resource stakeholders. This budget submission enables Southeastern to promote strategies that enhance energy efficiency, renewable energy technologies, and the effective management of hydroelectric resources.

Program Direction supports day-to-day agency operation and Purchase Power and Wheeling supports acquisition of replacement and pumping power along with contractually-required transmission services. Consistent with the authority provided in the FY 2010 Energy and Water Appropriations, the FY 2017 Budget provides funding for annual expenses (Program Direction) through discretionary offsetting collections derived from power receipts collected to recover those expenses.

Highlights and Major Changes in the FY 2017 Budget Request

Southeastern's request for FY 2017 decreases Purchase Power and Wheeling (-$4.671 million), reflecting changes in transmission rates and rainfall estimates, and decreases Program Direction (-$0.900 million) based on more accurate cost estimates.

Service Area Map



Southeastern Power Administration
Funding by Congressional Control ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Southeastern Power Administration					
Purchase Power and Wheeling (PPW)	89,710	89,710	83,600	78,929	-4,671
Program Direction (PD)	7,220	7,220	6,900	6,000	-900
Subtotal, Southeastern Power Administration	**96,930**	**96,930**	**90,500**	**84,929**	**-5,571**
Offsetting Collections, PPW	-73,579	-73,579	-66,500	-60,760	+5,740
Alternative Financing, PPW	-16,131	-16,131	-17,100	-18,169	-1,069
Offsetting Collections, Annual Expenses, PD	-2,220	-2,220	-6,900	-1,000	+5,900
Use of Prior Year Balances, PD	-5,000	-5,000	0	-5,000	-5,000
Total, Southeastern Power Administration	**0**	**0**	**0**	**0**	**0**
Federal FTEs	**44**	**44**	**44**	**44**	**0**

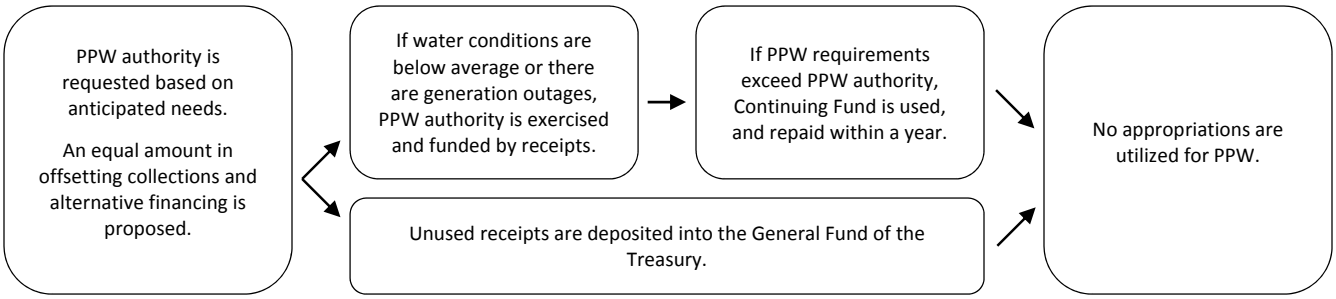
Purchase Power and Wheeling

Overview

The mission of Purchase Power and Wheeling (PPW) is to provide funding for acquisition of transmission services, ancillary services for the system, pumping energy for the Richard B. Russell and Carters Pumped Storage units, and support of the Jim Woodruff Project. Southeastern must purchase power on the open market when its Federal generating assets cannot provide enough power to fulfill its contracts with its customers.

Additionally, because Southeastern does not own or operate any transmission infrastructure, transmission expenses are based on contracts with area transmission providers to deliver specified amounts of Federal power from the hydropower projects to Federal power customers. Southeastern has access to a continuing fund for emergency expenses necessary to ensure continuity of service. Southeastern has implemented a plan to repay any Purchase Power and Wheeling expenditures made through the Continuing Fund within one year.

The FY 2017 request uses customer receipts and net billing to pay for purchase power and wheeling expenses at no cost to the Federal Treasury. Some customers, acting independently or in partnerships, acquire replacement power and transmission services directly from suppliers. Southeastern will continue to assist its customers by arranging funding for these activities through alternative financing instruments, as needed.



Highlights of the FY 2017 Budget Request

The PPW subprogram supports Southeastern's mission to market and deliver reliable, cost-based hydroelectric power and related services. PPW enables Southeastern to wheel Federal power to preference customers, purchase replacement power, and acquire pumping energy to maximize the efficiency and benefits of Southeastern's hydropower resources. Power and services are marketed at rates designed to provide recovery of expenses and Federal investment, as established by law.

Purchase Power & Wheeling
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Purchase Power					
Replacement Power	11,000	11,000	11,000	5,876	-5,124
Russell Project pumping power	17,900	17,900	14,000	12,960	-1,040
Carters Project pumping power	17,500	17,500	13,000	12,457	-543
Jim Woodruff Project support	3,300	3,300	3,600	3,600	0
Total, Purchase Power	**49,700**	**49,700**	**41,600**	**34,893**	**-6,707**
Wheeling					
Wheeling service charges	35,246	35,246	37,236	39,272	+2,036
Ancillary Services	4,764	4,764	4,764	4,764	0
Total, Wheeling	**40,010**	**40,010**	**42,000**	**44,036**	**+2,036**
Total, Purchase Power and Wheeling	**89,710**	**89,710**	**83,600**	**78,929**	**-4,671**
Alternative Financing					
Net Billing	-16,131	-16,131	-17,100	-18,169	+1,069
Subtotal, Purchase Power and Wheeling	73,579	73,579	66,500	60,760	-5,740
Offsetting Collections Realized	-73,579	-73,579	-66,500	-60,760	+5,740
Total, Purchase Power and Wheeling Budget Authority	**0**	**0**	**0**	**0**	**0**

Southeastern Power Administration
Purchase Power and Wheeling
Explanation of Major Changes ($K)

	FY 2017 vs. FY 2016
Purchase Power: The decrease in Purchase Power is due to expectation of improved rainfall and water condition factors used in calculating purchase power estimates.	**-6,707**
Wheeling: The increase in wheeling cost is due to a slight increase in transmission rates.	**+2,036**
Total, Southeastern, Purchase Power and Wheeling	**-4,671**

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs. FY 2016
Purchase Power and Wheeling $83,600	**$78,929**	**-$4,671**
On-Peak Replacement Power, purchased to meet contract minimum service in drought conditions	Continuing activities from prior year	Forecast stream flow energy to supply majority of annual power requirements.
Off-Peak Pumping Power, purchased to supplement stream flow energy demand	Continuing activities from prior year	Carters and Russell Projects pump storage energy purchases reduced during anticipated full reservoir periods.
Jim Woodruff System Generating Support Required for high river flows at low head plant	Continuing activities from prior year	Forecast stream flow energy to supply majority of annual power requirements.

Program Direction

Overview

Program Direction provides the Federal staffing resources and associated costs required to provide overall direction and execution of the Southeastern Power Administration. Provision is made for negotiation and administration of transmission and power contracts, collections of revenues, accounting and budget activities, development of wholesale power rates, amortization of the Federal power investment, energy efficiency and competitiveness programs, investigation and planning of proposed water resources projects, scheduling and dispatch of power generation, scheduling storage and release of water, administration of contractual operation requirements, and determination of methods of operating generating plants individually and in coordination with others to obtain maximum allowable utilization of resources.

Highlights of the FY 2017 Budget Request

The FY 2017 Budget Request provides for the continuation of Southeastern's activities related to Program Direction at the level necessary to meet mission requirements.

Program Direction Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Program Direction Summary					
Southeastern Power Administration					
Salaries and Benefits	4,825	4,825	4,750	4,400	-350
Travel	400	400	400	120	-280
Support Services	100	100	100	50	-50
Other Related Expenses	1,895	1,895	1,650	1,430	-220
Total, Program Direction	**7,220**	**7,220**	**6,900**	**6,000**	**-900**
Federal FTEs	**44**	**44**	**44**	**44**	**0**
Support Services					
Management and Professional Support Services	100	100	100	50	-50
Total, Support Services	**100**	**100**	**100**	**100**	**-50**
Other Related Expenses					
Training	15	15	15	10	-5
Communications, Utilities, Misc.	185	185	189	192	3
Equipment	186	186	190	41	-149
Maintenance Agreements	62	62	77	74	-3
Rent to GSA	337	337	337	338	1
Rent to Others	9	9	9	3	-6
Tuition	15	15	15	5	-10
Contract Services	689	689	414	404	-10
Audit of Financial Statements	243	243	249	254	5
Supplies and Materials	116	116	116	69	-47
Working Capital Fund	35	35	36	37	1
Printing and Reproduction	3	3	3	3	0
Total, Other Related Expenses	**1,895**	**1,895**	**1,650**	**1,430**	**-220**

Program Direction

Activities, Milestones, and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016 Request
Program Direction $6,900,000	**$6,000,000**	**-$900,000**
Salaries and Benefits $4,750,000	**$4,400,000**	**-$350,000**
The funding supports Federal salaries and benefits for 44 FTEs who market Federal hydropower, promote energy efficiency and renewable energy, administrative support, and workloads in cyber-security and operational reliability. These estimates are derived from the current year budgeted salaries, plus cost-of-living adjustments, promotions, within-grade increases, overtime, DOE-cascading performance awards, and retirement payouts for unused leave.	Continue funding support for Federal salaries and benefits for 44 FTEs.	Decrease reflects a more conservative calculation of Salaries and Benefits which is supported by an actual five year expenditure average.
Travel $400,000	**$120,000**	**-$280,000**
Funding supports transportation and per diem expenses incurred for preference customer meetings, relocation expenses for new FTEs, contract negotiations, rate forums, Congressional hearings, site visits, promotion of energy efficiency and renewable energy via workshops, and operations meetings with industry organizations.	Continued funding supports ongoing activities.	Continue greater use of conference calls, webinar sessions, internet training, and video conferencing.
Support Services $100,000	**$50,000**	**-$50,000**
Funding supports preference customers' efforts to address energy efficiency issues and promote development of renewable resources in support of the Energy Policy Act of 2005. Also, develops specifications for training programs, prepares program plans, conducts training, and reviews and evaluates contractors.	Continue funding for co-sponsored energy efficiency services and renewable energy acquisition support for municipal and cooperative utilities.	Decrease reflects planned use of prior year balances.
Other Related Expenses $1,650,000	**$1,430,000**	**-$220,000**

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016 Request
Funding provides administrative support for the office, rent, communications, maintenance, contract services, supplies, materials, and equipment and support for cyber and physical security, training expenses for power operator certification, support for installation of electronic hardware and software for the operations center and provides maintenance to integrate real-time data from the control area and provides the data to other transmission operators and NERC.	Continue funding support for Southeastern Power Administration's headquarters office.	Decrease reflects planned use of prior year balances.

Southeastern Power Administration
Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program.

	FY 2015	FY 2016	FY 2017
Performance Goal (Measure)	**Southeastern - System Reliability Performance – North American Electric Corporation (NERC) Rating** – Meet NERC Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.		
Target	CPS1>100, CPS2>90	CPS1>100, CPS2>90	CPS1>100, CPS2>90
Result	Met	Not yet available	Not yet available
Endpoint Target	Southeastern ensures the integrity of the Nation's integrated grid by operating in compliance with National Energy Reliability Standards.		

Performance Goal (Measure)	**Southeastern - Repayment of the Federal Power Investment** – Ensure timely repayment of Federal investment in accordance with DOE Order RA 6120.2 by maintaining unpaid investment (UI) equal to or less than the allowable unpaid investment (AUI) in accordance with DOE Order RA 6120.2.		
Target	<=$2,148 million dollars AUI	<=$2,143 million dollars AUI	<=$2,212 million dollars AUI
Result	Met - $1,686 UI	Not yet available	Not yet available
Endpoint Target	Continue to meet repayment of Federal investment, thereby achieving and maintaining financial integrity.		

Additional Tables

Revenue and Receipts ($K)

	FY 2015 Actuals	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Gross Revenues	288,522	345,203	339,594	340,815	342,114	343,554	349,131
Net Billing (Credited as an Offsetting Receipt)	-15,076	-17,100	-18,169	-18,437	-18,718	-19,013	-19,322
Total Cash Receipts	273,446	328,103	321,425	322,378	323,396	324,541	329,809
Use of Offsetting Collections to fund PPW	-44,392	-66,500	-60,760	-61,712	-62,730	-63,876	-65,107
Use of Offsetting Collections to fund Annual Expenses	-7,220	-6,900	-6,000	-6,272	-6,389	-6,576	-6,700
Total Receipts, net use of Offsetting Collections	221,834	254,703	254,665	254,394	254,277	254,089	258,002
Cumberland Rehabilitation	-22,264	-40,000	-40,000	-40,000	-40,000	-40,000	-40,000
GA-AL-SC Rehabilitation	-4,354	-20,000	-20,000	-20,000	-20,000	-20,000	-20,000
Kerr-Philpott Rehabilitation	-0	-5,000	-5,000	-5,000	-5,000	-5,000	-5,000
Jim Woodruff	-0	-1,000	-1,000	-1,000	-1,000	-1,000	-1,000
Accts Rec Yearly Difference	-733	0	0	0	0	0	0
Total Proprietary Receipts	194,483	188,703	188,665	188,394	188,277	188,089	192,002
Percent of Sales to Preference Customers	99%	99%	99%	99%	99%	99%	99%
Energy Sales and Power Marketed (megawatt-hours)	7,886,000	7,886,000	7,886,000	7,886,000	7,886,000	7,886,000	7,886,000

Alternative Financing

2015	Transmission	Purchase Power	Offsetting Collections	Net Billing	Appropriated Funds
Jim Woodruff System	327	1,394	-1,117	-604	0
Kerr-Philpott System	3,386	0	-3,386	0	0
GA-AL-SC System	22,375	22,082	-39,572	-4,885	0
Cumberland System	9,904	0	-317	-9,587	0
	35,992	23,476	-44,392	-15,076	0

2016	Transmission	Purchase Power	Offsetting Collections	Net Billing	Appropriated Funds
Jim Woodruff System	230	3,600	-3,130	-700	0
Kerr-Philpott System	4,315	0	-4,315	0	0
GA-AL-SC System	26,046	38,000	-58,721	-5,325	0
Cumberland System	11,409	0	-334	-11,075	0
	42,000	41,600	-66,500	-17,100	0

2017	Transmission	Purchase Power	Offsetting Collections	Net Billing	Appropriated Funds
Jim Woodruff System	230	3,600	-3,130	-700	0
Kerr-Philpott System	4,378	0	-4,378	0	0
GA-AL-SC System	26,975	31,293	-52,917	-5,351	0
Cumberland System	12,453	0	-335	-12,118	0
	44,036	34,893	-60,760	-18,169	0

Power Marketed, Wheeled, or Exchanged by Project

Project	State	Plants	Installed Capacity (KW)	FY 2015 Estimated Power (GWH)	FY 2016 Estimated Power (GWH)	FY 2017 Estimated Power (GWH)
Kerr-Philpott System				293	293	293
John H. Kerr	VA-NC	1	291,000			
Philpott	VA	1	15,000			
Georgia-Alabama-South Carolina System				2,508	2,508	2,508
Allatoona	GA	1	82,000			
Buford	GA	1	127,000			
Carters	GA	1	600,000			
J. Strom Thurmond	GA-SC	1	364,000			
Walter F. George	GA-AL	1	160,000			
Hartwell	GA-SC	1	424,000			
R. F. Henry	AL	1	82,000			
Millers Ferry	AL	1	90,000			
West Point	GA-AL	1	87,000			
Richard B. Russell	GA-SC	1	656,000			
Jim Woodruff Project	FL-GA	1	43,500	148	148	148
Cumberland System				2,481	2,481	2,481
Barkley	KY	1	130,000			
Center Hill	TN	1	135,000			
Cheatham	TN	1	36,000			
Cordell Hull	TN	1	99,900			
Dale Hollow	TN	1	54,000			
Old Hickory	TN	1	103,752			
J. Percy Priest	TN	1	28,000			
Wolf Creek	TN	1	270,000			
Laurel	TN	1	61,000			
Total Power Marketed		22	3,939,152	5,430	5,430	5,430

System Statistics

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Generating Capacity:			
Nameplate Capacity (KW)	3,939,152	3,939,152	3,939,152
Peak Capacity (KW) [a]	4,330,000	4,330,000	4,330,000
Generating Stations			
Generating Projects (Number)	22	22	22
Available Energy			
Energy from Stream-flow (MWH)	4,685,000	4,685,000	4,685,000
Energy generated from Pumping (MWH)	745,100	745,100	745,100
Energy Purchased for Replacement (MWH)	157,640	157,640	157,640
Total, Energy available for marketing [b] (MWH)	5,587,740	5,587,740	5,587,740

[a] Southeastern markets capacity based on nameplate plus an overload factor. NERC requires that Southeastern keep a portion of the capacity in reserve for emergency purposes and to cover losses.

[b] Gross amount. Transmission losses are deducted from this amount to estimate the amount of energy marketed.

Department Of Energy

FY 2017 Congressional Budget

Funding By Appropriation By Site

($K)

Southeastern Power Admin. - Operation & Maint.	**FY 2015 Current**	**FY 2016 Enacted**	**FY 2017 Request**
Southeastern Power Administration			
Purchase Power and Wheeling			
Purchase Power and Wheeling	89,710	83,600	78,929
Program Direction			
Program Direction	7,220	6,900	6,000
Total, Southeastern Power Administration	**96,930**	**90,500**	**84,929**
Total, Southeastern Power Admin. - Operation & Maint.	**96,930**	**90,500**	**84,929**

Southwestern Power Administration

Southwestern Power Administration

Southwestern Power Administration
Proposed Appropriation Language

For necessary expenses of operation and maintenance of power transmission facilities and of marketing electric power and energy, for construction and acquisition of transmission lines, substations and appurtenant facilities, and for administrative expenses, including official reception and representation expenses in an amount not to exceed $1,500 in carrying out section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), as applied to the Southwestern Power Administration, [$47,361,000] *$45*,643,000 to remain available until expended: Provided, That notwithstanding 31 U.S.C. 3302 and section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), up to [$35,961,000] *$34,586,000* collected by the Southwestern Power Administration from the sale of power and related services shall be credited to this account as discretionary offsetting collections, to remain available until expended, for the sole purpose of funding the annual expenses of the Southwestern Power Administration: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year [2016] *2017* appropriation estimated at not more than [$11,400,000] *$11,057,000*: Provided further, That, notwithstanding 31 U.S.C. 3302, up to [$63,000,000] *$73,000,000* collected by the Southwestern Power Administration pursuant to the Flood Control Act of 1944 to recover purchase power and wheeling expenses shall be credited to this account as offsetting collections, to remain available until expended for the sole purpose of making purchase power and wheeling expenditures: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred (excluding purchase power and wheeling expenses).

Explanation of Changes

No changes.

Public Law Authorizations

Southwestern Power Administration:

- P.L. 78-534, Section 5, Flood Control Act of 1944
- P.L. 95–91, Section 302, DOE Organization Act of 1977
- P.L. 100-71, Supplemental Appropriations Act, 1987
- P.L. 101–101, Title III, Continuing Fund (amended 1989)
- P.L. 102-486, Section 721, Energy Policy Act of 1992
- P.L. 108-137, Appropriations Act, FY 2004
- P.L. 111-85, Appropriations Act, FY 2010

Southwestern Power Administration

($K)

FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
122,666	122,666	136,223	140,898
-111,266	-111,266	-124,823	-129,841
11,400	11,400	11,400	11,057

Overview

Southwestern Power Administration's (Southwestern) mission is to market and reliably deliver Federal hydroelectric power, with preference to public bodies and cooperatives. This is accomplished by maximizing the use of Federal assets to repay the Federal investment and participating with other water resource users in an effort to balance diverse interests with power needs within broad parameters set by the U.S. Army Corps of Engineers (Corps), and implementing public policy.

Southwestern markets and delivers power at wholesale rates to 78 municipal utilities, 21 rural electric cooperatives, and 3 government entities in the six states of Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas. In turn, these customers distribute that power to nearly nine million end users in the six-state area. In order to integrate the operation of the Federal hydroelectric generating plants and to transmit power from 24 multi-purpose Corps dams to customers, Southwestern operates and maintains 1,380 miles of high-voltage transmission lines, 25 substations/switchyards, and 51 microwave and very high frequency (VHF) radio sites. Southwestern is headquartered in Tulsa, Oklahoma. The agency operates a dispatch center in Springfield, Missouri as well as maintenance facilities in Jonesboro, Arkansas; Gore, Oklahoma; and Springfield, Missouri.

Southwestern participates in the Southwest Power Pool (SPP) Regional Transmission Organization (RTO), which reinforces Southwestern's role as an integral part of the Nation's interconnected generation and transmission system. In participation with the SPP RTO, Southwestern works on regional and interregional transmission policy initiatives in response to the evolution of the electric utility industry. Furthermore, with the integration of a large investor owned electric utility into the Midcontinent Independent System Operator (MISO) RTO, Southwestern coordinates its varied utility activities in conjunction with a broader group of stakeholders. As the demand for the transmission of power increases across regional and interregional footprints, the Federal investment in improving the Nation's energy infrastructure by providing improvements, replacements, and interconnections and the coordination with the RTOs in Southwestern's marketing area has become more critical than ever. Southwestern assures the efficient and reliable delivery of Federal hydropower, thus enhancing energy security for the present as well as for future generations.

Southwestern's marketing services and delivery capability provide for recovery of all annual operating costs, including the Corps' hydropower related costs, and for repayment of taxpayer investment in all assets and facilities that support the Federal hydropower program.

Hydroelectric power reduces greenhouse gas emissions, fossil fuel usage, and American dependence on foreign energy supplies. Southwestern produces an average of 5,570 gigawatt-hours of clean renewable hydroelectric energy annually. This energy production reduces emissions of carbon dioxide by 4.6 million tons per year. The clean renewable hydropower marketed by Southwestern replaces, 9.7 million barrels of fuel oil, 3.0 million tons of coal, or 44.7 billion cubic feet of natural gas that would otherwise be depleted each year.[3]

[3] Emission savings computed using 2004-2013 data from U.S. Energy Information Administration (EIA), assuming a 50/50 Coal/Natural Gas Mix as representative of replacement energy for hydropower in Southwestern's area. Fuel savings based on thermal conversion factors from EIA's annual Energy Review-2014.

Southwestern will use the following strategies to fulfill its mission:

- Market and deliver, at the lowest possible cost, all available Federal hydropower generated at the Corps multipurpose projects and work with the Corps, states, cooperatives, and municipalities to meet its statutory requirements while balancing the interests of other water users.
- Maintain and modernize systems and infrastructure to increase the reliability, efficiency, and use of Federal assets. This will be accomplished through the use of appropriations; Federal power receipts; and alternative financing arrangements, which include net billing, bill crediting, and/or reimbursable authority (customer advances).[4]
- Conduct annual power repayment studies to ensure power rates are sufficient to repay all annual operating costs and the Federal investment with interest.
- Meet Southwestern's limited 1200-hour peaking power contractual obligations with necessary purchase power and wheeling through the use of Federal power receipts; alternative financing arrangements, which include net billing, bill crediting, and/or reimbursable authority (customer advances); and the Continuing Fund as necessary in periods of below-average hydropower generation.
- Operate the transmission system efficiently to support the Nation's integrated power grid and engage in transmission policy initiatives within the RTOs in Southwestern's marketing area to respond effectively to the evolution of the electric utility industry.
- Meet requirements for Southwestern's compliance with the latest North American Electric Reliability Corporation (NERC) standards.
- Bolster Southwestern's cyber and physical security postures using best-available technologies and in cooperation with DOE and industry partners to protect the Federal transmission system and the Nation's power grid.

External factors that present potential adverse impacts to the overall achievement of the programs' strategic goals include weather, natural disasters, NERC reliability standards, industry deregulation, physical and cybersecurity, changing electric industry organizational structure, interconnections, open access, the uncertainty of sustainable funding resources, competing uses' demand for the limited water resource, and other unforeseen requirements. More specifically:

- The bulk of Southwestern's transmission infrastructure is approximately 60 years old and requires ongoing repair and replacement while concurrently balancing changing and increasing demands for availability.
- Industry efforts to improve the reliability of the Nation's power grid are placing more requirements on Southwestern's workforce to implement mandatory reliability standards.
- Southwestern continues to emphasize security, both cyber and physical as an agency priority. Ongoing assessments, realigning vacant positions, investments in the cyber and physical security programs, and infrastructure protection improvements enable Southwestern to continue to provide a safe and reliable product.
- Southwestern competes with the rest of the electric utility industry to attract and retain the quality workforce needed to provide a reliable power supply and transmission service as Southwestern's workforce retires.
- Southwestern is increasingly challenged by more complex transmission policy developments including intricate energy and capacity markets, transmission planning processes, and technical rate structures; the deployment of new technologies such as renewables and distributed generation; and heightening emissions and environmental restrictions.

Highlights of the FY 2017 Budget Request

Southwestern requests a net appropriation of $11.057 million for FY 2017. Southwestern's appropriation consists of four subprograms: Operations and Maintenance; Construction; Purchase Power and Wheeling; and Program Direction. Consistent with the authority provided in the 2010 Energy and Water Appropriations, the FY 2017 Budget provides funding for annual expenses (Operations and Maintenance and Program Direction) through discretionary offsetting collections derived from power receipts collected to recover those expenses. Priority is being placed on replacements and upgrades, physical and cybersecurity, compliance, and cost containment.

[4] Southwestern's authority to use net billing and bill crediting is inherent in the authority provided by the Flood Control Act of 1944 and has been affirmed by the Comptroller General. Honorable Secretary of the Interior B-125127 (February 14, 1956).

The FY 2017 Budget Request continues to seek Congressional approval for a special receipt/disbursement account, hereafter known as the Purchase Power Drought Fund. This fund would allow Southwestern to pre-collect funds through power rates for use in times of below average water and drought conditions. The account would supplement Southwestern's current authorities and would minimize the necessity to invoke the Continuing Fund for Purchase Power and Wheeling expenses and mitigate the rate volatility associated with such activation.

FY 2015 Key Accomplishments

- In FY 2015, Southwestern exceeded its Acquisition Small Business Goal of 64.53 percent by 47.23 percent.
- In FY 2015, Southwestern completed the third and final phase of the NERC Alert Structure Replacements.
- In FY 2015, Southwestern's Transmission System achieved service availability of 99.7 percent.
- In FY 2015, the 24 Federal hydropower projects from which Southwestern markets power produced a total of over 5.4 billion kilowatt-hours (kWhs) of energy.
- In March 2015, Southwestern passed a NERC audit on Cybersecurity with no findings of non-compliance. Southwestern also passed a NERC Operations and Planning audit in August of 2014, marking two consecutive NERC audits with no findings of non-compliance.
- In FY 2015, Southwestern had a reportable accident/incident rate of 1.8 which is less than the industry average of 2.1.

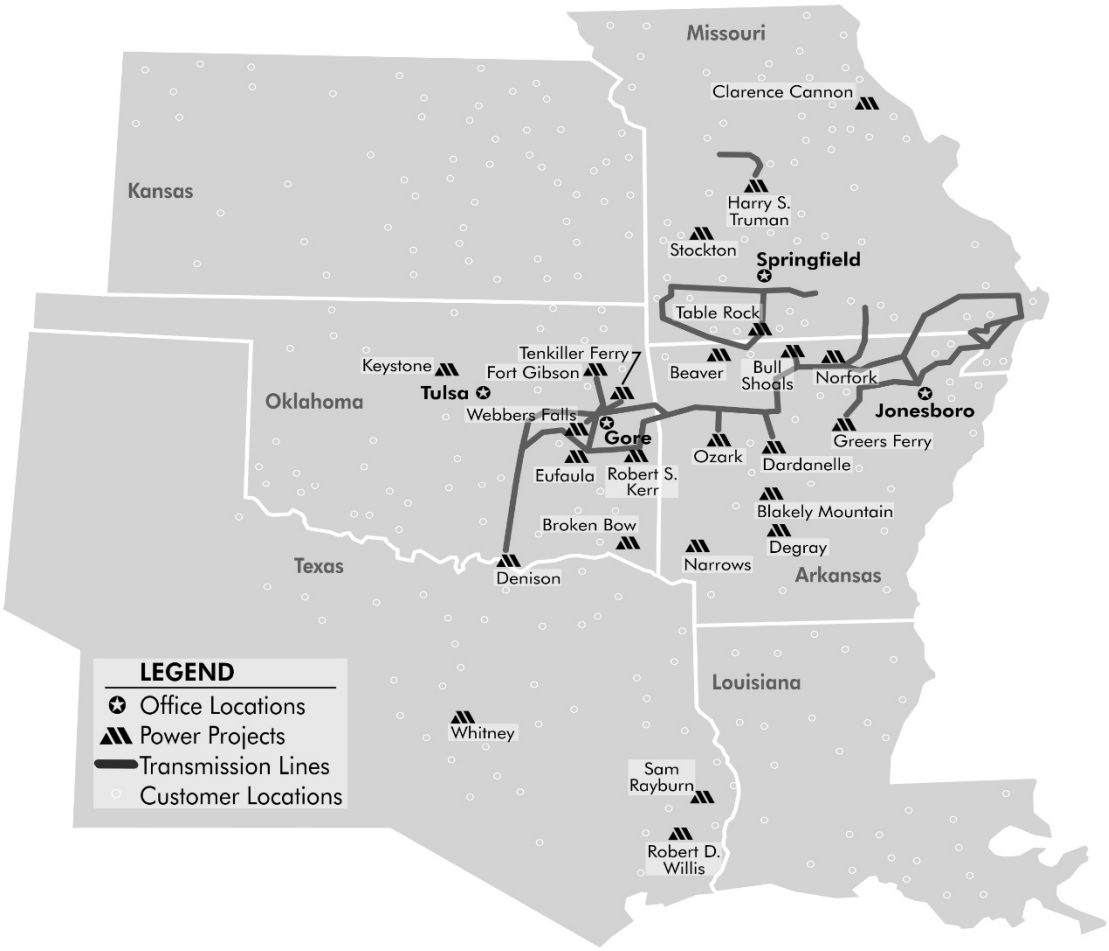
Southwestern Power Administration
Funding by Congressional Control ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs. FY 2016
Operation and Maintenance					
Program Direction (PD)	31,089	31,089	31,932	31,516	-416
Operations and Maintenance (O&M)	15,174	15,174	19,279	13,896	-5,383
Construction (CN)	13,403	13,403	12,012	12,486	+474
Purchase Power and Wheeling (PPW)	63,000	63,000	73,000	83,000	+10,000
Subtotal, Operation and Maintenance	122,666	122,666	136,223	140,898	+4,675
Offsetting Collections, PD (annual expenses)	-29,402	-29,402	-29,938	-29,271	+667
Offsetting Collections, O&M (annual expenses)	-5,438	-5,438	-6,023	-5,315	+708
Offsetting Collections, PPW	-53,000	-53,000	-63,000	-73,000	-10,000
Alternative Financing, O&M	-5,934	-5,934	-8,288	-6,269	+2,019
Alternative Financing, CN	-7,492	-7,492	-7,574	-5,986	+1,588
Alternative Financing, PPW	-10,000	-10,000	-10,000	-10,000	0
Total, Operation and Maintenance	11,400	11,400	11,400	11,057	-343
Federal FTEs	194	194	194	194	0

Operation and Maintenance
Explanation of Major Changes ($K)

	FY 2017 vs. FY 2016
Operations and Maintenance: The decrease in the operations and maintenance subprogram reflects no additional funding required for the Supervisory Control and Data Acquisition/Energy Management System (SCADA/EMS) and a reduction in the number and type of special purchase vehicles being replaced.	**-5,383**
Construction: The increase in the construction subprogram reflects additional microwave radio and tower replacements, which was partially offset by a reduction in the projected cost of a new transformer.	**+474**
Purchase Power and Wheeling: The increase in the purchase power and wheeling subprogram reflects additional use of Southwestern's authority for offsetting collections resulting from anticipated purchases in drought and below average water conditions. This increase will forestall the need to activate the continuing fund.	**+10,000**
Program Direction: The decrease in the program direction subprogram incorporates projected retirements and the time lag in recruitment of hard to fill positions.	**-416**
Total, Southwestern, Operation and Maintenance	**+4,675**

Service Area Map



Southwestern Power Administration
Operations and Maintenance

Description
The activities of the Operations and Maintenance (O&M) subprogram are critical components in maintaining the reliability of the Federal power system, which is part of the Nation's interconnected generation and transmission system. By marketing and delivering renewable hydroelectric energy, Southwestern makes a meaningful contribution of clean, safe, reliable, affordable, and secure renewable hydroelectric energy to our Nation. The Energy Policy Act (EPACT), the National Energy Policy (NEP), and the Department of Energy (DOE) policies reinforce the importance of renewable hydroelectric energy by emphasizing its significant contribution to the Nation's past, current, and future energy supply and identifying Southwestern's important role in meeting electricity demand by supplying cost-based hydroelectric energy to its customers. These laws and policies emphasize the need to repair, maintain, and improve the transmission and generation facilities to ensure reliability of the Nation's energy infrastructure.

Southwestern's planned O&M projects are subject to change due to by unanticipated equipment failure, customer needs, and weather conditions. The realities of maintaining a complex interconnected electric power system periodically require unforeseen reprioritizations of planned projects. All projects share the commonality of maintaining, repairing, and improving the aging infrastructure to ensure the reliability of the Federal power system.

Power Marketing
The Power Marketing activity funds technical and economic studies to support Southwestern's transmission planning, water resources management, and communication functions. Technical and economic studies provide data to analyze and evaluate the impacts of proposed operational changes and decision-making based on cost/benefit analysis. Funding is also required for Southwestern's coordination with the RTOs and to provide regional power restoration assistance to other non-hydropower generation sources during electric power grid emergencies. The National Electric Transmission Congestion Study identified constraints in the Nation's interconnected electrical grid which could impede power flows. Studies to identify any constraints on Southwestern's system will continue to be conducted. These studies show how the marketing and delivery of power is operationally impacted. The funding level for this activity is derived from Southwestern's engineering plan, negotiated architect/engineering contracts, and the number of studies required per year.

Operations
The Operations activity funds communication functions associated with the dispatch and delivery of power; environmental, safety, and health activities; and other transmission activity costs such as physical security, cybersecurity, and day-to-day power dispatch functions. The operations activity includes three subactivities:

Communications
This subactivity funds telemetering improvements, technical support to protect cyber infrastructure, an e-tagging system that electronically schedules power for customers, load forecasting, digital test equipment, the radio frequency spectrum fee, and supplies and materials. The telemetering improvements include replacement of obsolete power and energy accounting equipment and modification of existing remote terminal units that improve the reliability of the power system, specifically in the areas of monitoring and control. Funding is required for upgrades that enable Southwestern to meet the goals of the EPACT, NEP, NERC and DOE's Strategic Plan by replacing aging infrastructure while assuring reliability and continuing to coordinate with the RTOs in its marketing area. The funding level for communications maintenance is derived from maintenance history, the age of equipment, expected life span, annual diagnostic maintenance testing, and historical pricing information.

Environmental, Safety, and Health

This subactivity funds environmental activities including waste disposal/clean-up of oil and polychlorinated biphenyl contaminates from old circuit breakers and transformers, grounding and drainage, cultural resource reviews, environmental assessments for threatened and endangered species. This subactivity also funds property transfers, wetland assessments, environmental library access, Toxic Substance Control Act and Resource Conservation Recovery Act compliance, contractor services, and requirements of the Environmental Protection Program as identified in DOE Order 450.1. The Safety and Health Program activities require funding for aviation safety, industrial hygiene, medical examinations, medical officer, wellness program, safety equipment, and first aid supplies.

Other Transmission

This subactivity funds physical security, field utility costs, and day-to-day power expenses of the dispatch center.

Maintenance

The Maintenance activity funds routine repair, maintenance, and improvement of Southwestern's substations/switchyards and high-voltage transmission lines, and ensures delivery of reliable, efficient, and clean power to its customers. Southwestern's initial facilities, which were built approximately 60 years ago, are constantly evaluated. The funding level is based on analysis derived from age of equipment, risk of failure, life-cycle of equipment, and field crew evaluation. Internal and external factors include obsolescence of technology and unavailability of replacement parts. This budget request reflects Southwestern's assessment of the funding required to ensure continued reliability of the Federal power system and to fulfill the NERC operational criteria. By replacing aging equipment and removing constraints that impede power flows, Southwestern is meeting the expectations of the National Transmission Grid Study, the Administration's initiative to provide energy efficiencies, and DOE's Strategic Goal 1. The maintenance activity includes two subactivities:

Substation Maintenance

This subactivity funds power circuit breakers, disconnect switches, instrument transformers, protective relays and related equipment, computer aided drafting and design, revenue meters, vehicle maintenance, fuel, and other equipment to reliably perform general maintenance projects. Southwestern maintains the Federal power system in compliance with the regional electric reliability council and NERC requirements. The funding level for this subactivity is derived from an internal maintenance information system, which includes age and condition of the existing equipment.

Transmission Line Maintenance

This subactivity funds the purchase and maintenance of wood and steel structures, crossarms and braces, right-of-way (ROW) clearing, herbicide application, aerial patrol of the transmission system to identify maintenance needs, routine vehicle repair and maintenance, tractors, equipment, and fuel. The number of steel or wood poles and crossarms and high-voltage insulators replaced is derived from internal maintenance information system criteria. Emphasis has been placed on ROW clearing since NERC identified improper/insufficient ROW clearing as a major factor in potential blackouts. The funding level is appropriate for the number of structures and components to be replaced and the miles of ROW to be cleared as set forth by Southwestern's maintenance plan for meeting the goals of the EPACT, NEP, NERC, and DOE's Strategic Plan to maintain a reliable transmission system.

Capitalized Moveable Equipment

This activity funds the replacement of vehicles, tractor-trailers, and heavy equipment used for the maintenance and repair of the transmission system and facilities. These vehicles and equipment have exceeded their useful lives and require high levels of maintenance. The vehicle cost estimates are derived from General Services Administration (GSA) pricing schedules.

Operations and Maintenance
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs. FY 2016
Operations and Maintenance (O&M)					
Power Marketing	450	450	200	200	0
Operations	4,568	4,568	10,415	5,756	-4,659
Maintenance	8,449	8,449	6,824	7,185	+361
Capitalized Moveable Equipment	1,707	1,707	1,840	755	-1,085
Subtotal, Operations and Maintenance	**15,174**	**15,174**	**19,279**	**13,896**	**-5,383**
Offsetting Collections (annual expenses)	-5,438	-5,438	-6,023	-5,315	+708
Alternative Financing	-5,934	-5,934	-8,288	-6,269	+2,019
Total, Operations and Maintenance	**3,802**	**3,802**	**4,968**	**2,312**	**-2,656**

Operations and Maintenance

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs. FY 2016
Operations and Maintenance $19,279,000	**$13,896,000**	**-$5,383,000**
Power Marketing $200,000	**$200,000**	**+$0**
• The Power Marketing activity funds the technical and economic studies to support transmission planning.	• The Power Marketing activity funds the technical and economic studies to support transmission planning.	• The funding for this activity remains the same.
Operations $10,415,000	**$5,756,000**	**-$4,659,000**
Communications ($8,690,000)	*Communications ($4,404,000)*	*Communications (-$4,286,000)*
• Southwestern utilizes an in house SCADA/EMS system and is in need of a commercial off the shelf system in response to changing business needs. An upgraded SCADA/EMS system will assist in delivering power reliably and safely to our customers while maintaining costs and achieving higher customer satisfaction.	• This subactivity funds telemetering improvements, technical support to protect cyber infrastructure, SCADA/EMS system maintenance, load forecasting, and digital testing equipment.	• The decrease reflects no additional funding needed for the SCADA/EMS system.

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs. FY 2016
Environmental, Safety, and Health ($973,000) • The subactivity funds environmental, safety, and health services.	*Environmental, Safety, and Health ($829,000)* • Funding for this subactivity continues.	*Environmental, Safety, and Health (-$144,000)* • The decrease reflects a reduction in environmental and archeological surveys required for FY 2017.
Other Transmission ($752,000) • The subactivity funds physical security, field utility costs, and day to day expenses of the dispatch center.	*Other Transmission ($523,000)* • Funding for this subactivity continues.	*Other Transmission (-$229,000)* • The decrease reflects a reduction in the cost of utilities and other expenses related to the dispatch center.
Maintenance $6,824,000	**$7,185,000**	**+$361,000**
Substation ($4,821,000) • This subactivity funds all equipment, parts, and materials for the operation of high voltage substations.	*Substation ($4,190,000)* • Funding for this subactivity continues.	*Substation (-$631,000)* • The decrease reflects a reduction in relay replacements for FY 2017.
Transmission Line Maintenance ($2,003,000) • This subactivity funds all equipment, parts and materials for the operation of the high voltage transmission system.	*Transmission Line Maintenance ($2,995,000)* • Funding for this subactivity continues with the addition of purchasing a Track Crane to access wetlands, croplands, and river bottoms. This will decrease outages, reduce equipment repairs, and provide a safer work site.	*Transmission Line Maintenance (+$992,000)* • The increase reflects the purchase of a Track Crane to access wetlands, croplands, and river bottoms.
Capitalized Moveable Equipment $1,840,000	**$755,000**	**-$1,085,000**
• This activity funds the replacement of vehicles, tractor-trailers, and heavy equipment used for the maintenance and repair of the transmission system and facilities.	• This activity funds the replacement of vehicles, tractor-trailers, and heavy equipment used for the maintenance and repair of the transmission system and facilities.	• The decrease reflects a reduction in the number and type of off-road heavy equipment utility trucks being replaced.

Southwestern Power Administration
Construction

Description
The activities of the Construction subprogram enable Southwestern to market and deliver Federal hydropower in the most reliable, safe, efficient, and cost-effective manner to meet the operational criteria required by the North American Electric Reliability Corporation while avoiding transmission infrastructure deterioration.
Southwestern's planned construction projects are subject to change based on unanticipated equipment failure, customer needs, and weather conditions. The realities of maintaining a complex interconnected power system include unforeseen priority projects which arise periodically, causing a reprioritization of planned projects. All projects share the commonality of replacing aging infrastructure necessary to maintain the reliability of the Federal power system.

Transmission System
This activity funds all construction projects that require expansion of, or additions to, existing facilities. Southwestern ensures system reliability by replacing aging equipment and removing constraints that limit power flows. The projects outlined below address Southwestern's efforts to reduce the risk of extended service outages, avoid more costly replacements in the future, and support the increased transmission system usage. The funding level for this activity is derived from internal and external management decisions and field crew observations. System age, risk of equipment failure, life-cycles, and obsolescence of technology and unavailability of spare parts, budget constraints, cost, and demand for more capacity are also considered in these budgeting decisions. These variables are assessed and incorporated into Southwestern's ten-year construction plan. Project cancellations or delays would increase risk to system reliability and Southwestern's ability to meet contractual obligations. The transmission activity includes three subactivities:

Substation Upgrades
This subactivity funds the construction and upgrade of the substations and the components necessary to provide improved system reliability and reduce future maintenance and equipment costs. Southwestern owns and operates 25 substation/switching stations. Many of these facilities were designed and constructed over 60 years ago. The equipment which will be replaced or upgraded includes power transformers, circuit breakers, and control equipment, as well as the structural components necessary to sustain reliable power delivery and support a stable, flexible interconnected power grid.

Communication Upgrades
This subactivity funds all communication equipment planned to provide improved system reliability and reduce future maintenance and equipment costs. This subactivity also provides funding for microwave radios and microwave tower additions, replacements, and modifications that will increase the reliability of communications with generating plants and substations. The communication system provides for the transfer of voice and data traffic to allow monitoring and control of power system generation and transmission assets.

Transmission Upgrades
This subactivity funds transmission system upgrades. Much of the conductor and static wire on Southwestern's transmission lines has reached or exceeded its 45-year service life. With this assumed service life, approximately 20 to 30 miles of transmission line, including the conductor, static wire and structures, will need to be replaced each year. As Southwestern replaces the conductor, Southwestern will use the opportunity to increase line capacity where practical to accommodate increased loads in the region.

Spectrum Relocation

The Commercial Spectrum Enhancement Act of 2004 (CSEA, Title II of P.L. 108-494) created the Spectrum Relocation Fund (SRF) to streamline the relocation of Federal systems from existing spectrum bands and accommodate commercial use by facilitating reimbursement of relocation costs to affected agencies. Southwestern has received $42.8 million in spectrum relocation funds, as approved by the Office of Management and Budget, and as reported to the Congress. Southwestern has completed 91 percent of the tower installation project, 78 percent of the project overall, and anticipates completing construction and obtaining comparable capability by the spring of 2017. These mandatory funds will remain available until expended; and Southwestern will return any amounts received in excess of actual relocation costs to the SRF. Spectrum relocation activities were funded from spectrum auction proceeds; thus, no funding is requested in this subactivity.

Construction Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs. FY 2016
Construction					
Transmission System					
Substation Upgrades	4,500	4,500	2,371	1,520	-851
Communication Upgrades	3,651	3,651	3,161	4,466	+1,305
Transmission Upgrades	5,252	5,252	6,480	6,500	+20
Subtotal, Construction	**13,403**	**13,403**	**12,012**	**12,486**	**+474**
Alternative Financing	-7,492	-7,492	-7,574	-5,986	+1,588
Total, Construction	**5,911**	**5,911**	**4,438**	**6,500**	**+2,062**

Construction

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs. FY 2016
Construction $12,012,000	**$12,486,000**	**+$474,000**
Transmission System $12,012,000	**$12,486,000**	**+$474,000**
Substation Upgrades ($2,371,000) • Poplar Bluff Transformer replacement project consists of replacing a 1971, 37.5 MVA, autotransformer that threatens system reliability due to exceeding its life expectancy of 35 years. Due to its age, this autotransformer is difficult to repair due to scarcity of parts and overloading issues.	*Substation Upgrades ($1,520,000)* • Springfield Transformer #1 replacement project consists of replacing an autotransformer that threatens system reliability due to exceeding its life expectancy of 35 years. Due to its age, this autotransformer is difficult to repair due to scarcity of parts and overloading issues.	*Substation Upgrades (-$851,000)* • The decrease reflects a projected cost of replacing the transformer based on size and ratings.
Communication Upgrades ($3,161,000)	*Communication Upgrades ($4,466,000)* • Funding for this subactivity continues.	*Communication Upgrades (+$1,305,000)* • The increase reflects an increase in the replacement of fiber optic, microwave radios, and towers.

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs. FY 2016
• This subactivity funds all communication equipment, microwave radios and tower replacements.		
Transmission Upgrades ($6,480,000) • Beaver to Eureka Springs Transmission Line replacement, 6 miles and replace 40 miles of optical ground wire (OPGW) on 4 other transmission line segments. This replacement is due to age and condition.	*Transmission Upgrades ($6,500,000)* • Rebuild Carthage-LaRussell, adding OPGW, 11 miles; adding OPGW to Carthage-Neosho, 22.9 miles.	*Transmission Upgrades (+$20,000)* • Slight increase in funding.

Southwestern Power Administration
Purchase Power and Wheeling

Description

The Purchase Power and Wheeling (PPW) subprogram provides for the purchase of energy to meet peaking power contractual obligations and the delivery of Federal power. Southwestern's power sales contracts provide for 1200-hours of peaking power per year, representing only a portion of its customers' firm load requirements. The customers provide their own resources and/or purchases for the remainder of their firm loads. Southwestern must purchase power when the generating projects cannot produce enough to fulfill its 1200-hour contract obligations. Above average purchases are required in times of severe drought or instances of multiple project outages that limit power production. Purchases of power are generally made on the open spot market and with public entities. Delivery of purchase power to Southwestern's system is made via the Southwest Power Pool RTO or our own transmission system. All such power purchases are blended with the available Federal hydroelectric power to provide a more beneficial and reliable product while ensuring repayment of the Federal investment plus interest.

Southwestern's budget request for the PPW subprogram reflects anticipated needs to ensure adequate funding to fulfill its 1,200-hour peaking power contractual obligations based on volatile market prices, limited availability of energy banks, and all but the most severe hydrological conditions. Southwestern will continue to use Federal power receipts and alternative financing arrangements, which include net billing, bill crediting, and/or reimbursable authority (customer advances), to fund this subprogram. When hydropower generation falls significantly below normal due to severe drought conditions or major outages, Southwestern will utilize the Continuing Fund for emergency PPW expenses.

The activities of the PPW subprogram provide for the purchase of energy to fulfill limited peaking power contractual obligations to ensure the marketability of the Federal resource and repayment of the Federal investment. This subprogram also provides for wheeling services that deliver Federal power to optimize the operation of the hydroelectric facilities marketed by Southwestern. This subprogram enhances the reliability of the electrical transmission grid. PPW includes two activities:

<u>System Support</u>

This activity funds purchase power requirements of the hydroelectric power system needed to fulfill all 1200-hour contractual peaking power obligations with customers. System support requirements depend on the conditions of the hydroelectric power system which is affected by weather, volatile market prices, and limited availability of energy banks. In prior years, inadequate funding for PPW and hydrological fluctuations required multiple requests to access the Continuing Fund in order to ensure sufficient funding was available to fulfill Southwestern's 1200-hour peaking power contractual obligations. In FY 2008, Southwestern requested, and Congress approved, an increase in its authority to use Federal power receipts (offsetting collections). The use of this authority will be dependent upon the hydrological conditions realized during the fiscal year. Under average conditions, less than half of the authority requested will be used. Since the rates charged to its customers are based on full cost recovery, Southwestern has a built-in incentive to minimize expenditures for purchase power. This authority ensures greater flexibility in times of below average generation and volatile market prices, and will decrease dependence on the Continuing Fund under all but the most severe hydrological conditions.

Other Contractual Services

This activity funds other contractual services that provide for wheeling associated with the purchase of transmission service to meet limited peaking power obligations and for the integration of projects for the delivery of Federal power. The funding level is derived from contractual wheeling requirements. The FY 2017 funding request reflects the projected cost for wheeling services based on contractual pricing and delivery terms.

Purchase Power and Wheeling
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs. FY 2016
Purchase Power and Wheeling					
System Support	59,500	59,500	69,500	79,500	+10,000
Other Contractual Services	3,500	3,500	3,500	3,500	0
Subtotal, Purchase Power and Wheeling	**63,000**	**63,000**	**73,000**	**83,000**	**+10,000**
Offsetting Collections (PPW)	-53,000	-53,000	-63,000	-73,000	-10,000
Alternative Financing	-10,000	-10,000	-10,000	-10,000	0
Total, Purchase Power and Wheeling	**0**	**0**	**0**	**0**	**0**

Purchase Power and Wheeling

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs. FY 2016
Purchase Power and Wheeling $73,000,000	**$83,000,000**	**+$10,000,000**
System Support $69,500,000	**$79,500,000**	**+$10,000,000**
• This activity funds purchase power requirement needed to fulfill all 1200-hour contractual peaking power obligations with customers.	• This activity funds purchase power requirement needed to fulfill all 1200-hour contractual peaking power obligations with customers.	• The increase in system support reflects anticipated needs based on projected increase in market prices.
Other Contractual Services $3,500,000	**$3,500,000**	**+$0**
• Contractual services for wheeling associated with the purchase of transmission service.	• Contractual services for wheeling associated with the purchase of transmission service.	• Funding remains the same.

Program Direction

Overview

Southwestern's Program Direction subprogram ensures continued reliability of the Federal power system by utilizing Federal staffing resources and associated funds required to provide overall direction and execution of Southwestern's Operation and Maintenance Program.

The Program Direction subprogram supports DOE's and Southwestern's missions by providing compensation and all related expenses for its workforce, including those employees that operate and maintain Southwestern's high-voltage interconnected transmission system and associated facilities; those that plan, design, and supervise the construction of replacements, upgrades and additions (capital investments) to the transmission facilities; those that market the power and energy produced to repay annual expenses and capital investment; and those that administratively support these functions.

Southwestern will use available programs, and develop new strategies to hire and train the next generation of engineers, power system dispatchers, high voltage electricians and lineman. These initiatives will address the shortage of these valuable resources as a result of retirement trends, and the ever expanding demands on the electric utility industry, such as compliance with the standards of the North American Electric Reliability Corporation (NERC).

Southwestern trains all employees on a continuing basis in occupational safety and health regulations, policies and procedures, to keep the safety culture strong. Accidents are always reviewed to ensure lessons are learned and proper work protocol is in place.

Highlights of the FY 2017 Budget Request

The FY 2017 Budget Request's funding level for salaries is derived from the current year budgeted salaries, projected cost-of-living adjustments, promotions, and within-grade increases. The funding level for benefits is derived from a percentage of budgeted salaries.

Program Direction
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs. FY 2016
Program Direction Summary					
Southwestern Power Administration					
Salaries and Benefits	23,170	23,170	23,765	23,498	-267
Travel	1,315	1,315	1,182	1,203	+21
Support Services	3,230	3,230	3,267	3,105	-162
Other Related Expenses	3,374	3,374	3,718	3,710	-8
Subtotal, Southwestern Power Administration	**31,089**	**31,089**	**31,932**	**31,516**	**-416**
Offsetting Collections (annual expenses)	-29,402	-29,402	-29,938	-29,271	+667
Total, Program Direction	**1,687**	**1,687**	**1,994**	**2,245**	**+251**
Federal FTEs	194	194	194	194	0
Support Services					
Management Support					
Reports and Analyses management and General Administrative Support	3,230	3,230	3,267	3,105	-162
Total Management Support	3,230	3,230	3,267	3,105	-162
Total, Support Services	**3,230**	**3,230**	**3,267**	**3,105**	**-162**
Other Related Expenses					
Rent to Others	825	825	845	850	+5
Communication, Utilities, Misc.	220	220	250	255	+5
Printing and Reproduction	80	80	100	110	+10
Other Services	623	623	645	660	+15
Training	220	220	250	260	+10
Power Marketing Liaison	75	75	93	97	+4
Financial Audit	519	519	570	528	-42
Supplies and Materials	225	225	250	250	+0
Equipment	397	397	497	475	-22
Working Capital Fund	190	190	218	225	+7
Total, Other Related Expenses	**3,374**	**3,374**	**3,718**	**3,710**	**-8**

Program Direction

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs. FY 2016
Program Direction $31,932,000	**$31,516,000**	**-$419,000**
Salaries and Benefits $23,765,000	**$23,498,000**	**-$267,000**
• The FY 2016 level supports 194 Federal employees: 54 percent of the employees are General Schedule (GS) and subject to the Administration's proposed cost-of-living adjustment; salaries of the remaining 46 percent (craft workers and power system dispatchers) are determined through union negotiations and wage surveys. This activity also includes overtime, awards, relocation, workers' compensation, recruitment bonuses, retention pay, and advanced in-hire rates. Southwestern will continue to invest in its employees, emphasizing strong development programs, completing skills gap analyses, and pursuing aggressive recruitment and retention efforts as identified in its Human Capital Management Workforce Plan.	• The FY 2017 level supports 194 Federal employees: 54 percent of the employees are GS and subject to the Administration's proposed cost-of-living adjustment; salaries of the remaining 46 percent (craft workers and power system dispatchers) are determined through union negotiations and wage surveys. This activity also includes overtime, awards, relocation, workers' compensation, recruitment bonuses, retention pay, and advanced in-hire rates. By the end of FY 2017, approximately 35 percent of Southwestern's staff will be eligible for retirement. Southwestern will continue to invest in its employees, emphasizing strong development programs, completing skills gap analyses, and pursuing aggressive recruitment and retention efforts as identified in its Human Capital Management Workforce Plan.	• The decrease incorporates projected retirements and the time lag in recruitment for hard to fill positions.
Travel $1,182,000	**$1,203,000**	**+$21,000**

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs. FY 2016
• This activity funds all related travel and per diem expenses for mission-related travel to maintain the integrity and reliability of Southwestern's geographically dispersed power system. The funding level for this activity is primarily derived from the daily requirement of the field maintenance personnel to maintain 1,380 miles of transmission lines, 25 substations/switchyards, 51 microwave/radio sites, communication equipment, and the Supervisory Control and Data Acquisition network. Travel for the performance of general and administrative functions is also included.	• This activity funds all related travel and per diem expenses for mission-related travel to maintain the integrity and reliability of Southwestern's geographically dispersed power system. The funding level for this activity is primarily derived from the daily requirement of the field maintenance personnel to maintain 1,380 miles of transmission lines, 25 substations/switchyards, 51 microwave/radio sites, communication equipment, and the Supervisory Control and Data Acquisition network. Travel for the performance of general and administrative functions is also included.	• The increase in travel reflects additional NERC activities and Transmission policy related efforts.

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs. FY 2016
Support Services $3,267,000	**$3,105,000**	**-$162,000**
• This activity funds contracted management support services including information technology, E-Government, and administrative/records management support. The funding level for this activity is derived from the most recent negotiated contract for support services essential to achieve Southwestern's mission.	• This activity funds contracted management support services including information technology, E-Government, and administrative/records management support. The funding level for this activity is derived from the most recent negotiated contract for support services essential to achieve Southwestern's mission.	• The decrease reflects changes in the negotiated contract.
Other Related Expenses $3,718,000	**$3,710,000**	**-$8,000**
• This activity funds rental space, facility security, the financial audit, services of the Power Marketing Liaison Office, the working capital fund, technology refresh in the areas of personal computers, hardware and software, printing and reproduction, and training and tuition fees in support of workforce planning and required training to meet the NERC emergency operations requirement. Rental space costs assume the GSA inflation factor. Other costs are based on the historical usage and actual cost of similar items.	• This activity funds rental space, facility security, the financial audit, services of the Power Marketing Liaison Office, the working capital fund, technology refresh in the areas of personal computers, hardware and software, printing and reproduction, and training and tuition fees in support of workforce planning and required training to meet the NERC emergency operations requirement. Rental space costs assume the GSA inflation factor. Other costs are based on the historical usage and actual cost of similar items.	• The decrease reflects equipment replacements, and financial audit costs offset by increases in other areas.

Southwestern Power Administration Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program.

	FY 2015	FY 2016	FY 2017
Performance Goal (Measure)	**Southwestern - System Reliability Performance – North American Electric Corporation (NERC) Rating** – Meet NERC Control Performance Standards (CPS) of CPS1>100 and CPS2>90 and meet or exceed industry averages. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.		
Target	CPS1>100, CPS2>90	CPS1>100, CPS2>90	CPS1>100, CPS2>90
Result	Met CPS1 = 237.2 CPS2 = 99.7	Not yet available	Not yet available
Endpoint Target	Southwestern ensures the integrity of the Nation's integrated grid by operating in compliance with National Energy Reliability Standards.		

Performance Goal (Measure)	**Southwestern - Repayment of the Federal Power Investment** - Ensure unpaid investment (UI) is equal to or less than the allowable unpaid investment (AUI) in accordance with DOE Order RA 6120.2.		
Target	<=$1,387 million dollars AUI	<=$1,460 million dollars AUI	<=$1,536 million dollars AUI
Result	Met – $384 million UI *pending final audit	Not yet available	Not yet available
Endpoint Target	Continue to meet repayment of Federal investment, thereby achieving and maintaining financial integrity.		

Southwestern Power Administration
Revenues and Receipts

(Dollars in Thousands)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Gross Revenues							
Sale and Transmission of Electric Energy	201,818	246,500	257,000	267,100	267,500	267,500	268,700
Total, Gross Revenues	201,818	246,500	257,000	267,100	267,500	267,500	268,700
Alternative Financing Credited as an Offsetting Receipt, Net Billing/Bill Crediting	-43,203	-81,100	-77,200	-76,900	-77,700	-74,500	-73,100
Offsetting Collections, Southwestern Annual Expenses (Net Zero)	-34,840	-35,961	-34,586	-35,245	-35,805	-36,881	-37,400
Offsetting Collections Realized, Purchase Power and Wheeling	-30,000	-63,000	-73,000	-83,000	-83,000	-83,000	-84,200
Continuing Fund Usage for PPW	0	0	0	0	0	0	0
Total Proprietary Receipts	93,775	66,439	72,214	71,955	70,995	73,119	74,000
Percent of Sales to Preference Customers	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Energy Sales from Power Marketed (billions of kilowatt hours)	5.4	5.4	5.4	5.4	5.4	5.4	5.4

Southwestern Power Administration
System Statistics

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Generating Capacity (kilowatts)							
Installed Capacity	2,173,800	2,173,800	2,173,800	2,173,800	2,173,800	2,173,800	2,173,800
Peak Capacity	2,052,500	2,052,500	2,052,500	2,052,500	2,052,500	2,052,500	2,052,500
Generating Stations							
Generating Projects (Number)	24	24	24	24	24	24	24
Substations/Switchyards (Number)	25	25	25	25	25	25	25
Substations/Switchyards (kVA Capacity)	1,026,900	1,026,900	1,026,900	1,026,900	1,026,900	1,026,900	1,026,900
Available Energy (Megawatt-hours)							
Energy Generated	5,383,574	5,102,300	5,198,500	5,220,400	5,220,400	5,220,400	5,220,400
Energy Received	145,923	219,900	213,200	211,600	211,600	211,600	211,600
Total, Energy Available for Marketing	5,384,344	5,322,200	5,411,700	5,432,000	5,432,000	5,432,000	5,432,000
Transmission Lines (Circuit-Miles)							
161-KV	1,117	1,117	1,117	1,117	1,117	1,117	1,117
138-KV	164	164	164	164	164	164	164
69-KV	99	99	99	99	99	99	99
Total, Transmission Lines	1,380	1,380	1,380	1,380	1,380	1,380	1,380

Power Marketed, Wheeled, or Exchanged by Project

	State	Number of Plants	Installed Capacity (kW)	FY 2015 Actual Energy (GWh)	FY 2016 Estimated Energy (GWh)	FY 2017 Estimated Energy (GWh)	FY 2018 Estimated Energy (GWh)	FY 2019 Estimated Energy (GWh)	FY 2020 Estimated Energy (GWh)	FY 2021 Estimated Energy (GWh)
Power Marketed										
Interconnected										
System	Missouri	4	463,200	1,870	1,849	1,882	1,890	1,890	1,890	1,890
	Arkansas	9	1,037,100	1,034	1,026	1,044	1,048	1,048	1,048	1,048
	Oklahoma	7	514,100	1,145	1,067	1,085	1,089	1,089	1,089	1,089
	Texas	2	100,000	614	526	535	537	537	537	537
	Louisiana	0	0	299	306	311	313	313	313	313
	Kansas	0	0	423	395	402	404	404	404	404
Subtotals		22	2,114,400	5,385	5,169	5,259	5,281	5,281	5,281	5,281
Isolated:										
Robert D. Willis Project										
Sam Rayburn Project										
50% to Texas		2	59,400	76	76	76	76	76	76	76
50% to Louisiana		0	0	76	76	76	76	76	76	76
Subtotals		2	59,400	152	152	152	152	152	152	152
Total, Power Marketed		24	2,173,800	5,537	5,321	5,411	5,433	5,433	5,433	5,433
Power Wheeled/Exchanged										
Wheeled (MW)				984	997	1,002	1,080	1,080	1,080	1,080
Exchanged (GWh)				0	0	0	0	0	0	0

Department Of Energy

FY 2017 Congressional Budget

Funding By Appropriation By Site

($K)

Southwestern Power Admin. - Operation & Maint.	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Southwestern Power Administration			
Systems Operation and Maintenance			
Systems Operation and Maintenance	15,174	19,279	13,896
Purchase Power and Wheeling			
Purchase Power and Wheeling	63,000	73,000	83,000
SWPA Construction			
Construction	13,403	12,012	12,486
Program Direction			
Program Direction	31,089	31,932	31,516
Total, Southwestern Power Administration	**122,666**	**136,223**	**140,898**
Total, Southwestern Power Admin. - Operation & Maint.	**122,666**	**136,223**	**140,898**

Western Area Power Administration

Western Area Power Administration

Construction, Rehabilitation, Operation and Maintenance
Western Area Power Administration
Proposed Appropriation Language

For carrying out the functions authorized by title III, section 302(a)(1)(E) of the Act of August 4, 1977 (42 U.S.C. 7152), and other related activities including conservation and renewable resources programs as authorized, [$307,714,000] *$307,144,000,* including official reception and representation expenses in an amount not to exceed $1,500, to remain available until expended, of which [$302,000,000] *$299,742,000* shall be derived from the Department of the Interior Reclamation Fund*: Provided*, That notwithstanding 31 U.S.C. 3302, section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), and section 1 of the Interior Department Appropriation Act, 1939 (43 U.S.C. 392a), up to [$214,342,000] *$211,563,000* collected by the Western Area Power Administration from the sale of power and related services shall be credited to this account as discretionary offsetting collections, to remain available until expended, for the sole purpose of funding the annual expenses of the Western Area Power Administration: *Provided further*, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year [2016] *2017* appropriation estimated at not more than [$93,372,000] *$95,581,000* of which [$87,658,000] *$88,179,000* is derived from the Reclamation Fund: *Provided further*, That notwithstanding 31 U.S.C. 3302, up to [$352,813,000] *$367,009,000* collected by the Western Area Power Administration pursuant to the Flood Control Act of 1944 and the Reclamation Project Act of 1939 to recover purchase power and wheeling expenses shall be credited to this account as offsetting collections, to remain available until expended for the sole purpose of making purchase power and wheeling expenditures: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred (excluding purchase power and wheeling expenses). *(Energy and Water Development and Related Agencies Appropriations Act, 2016.)*

Explanation of Changes

There is no change in the appropriation language.

Public Law Authorizations
P.L. 57-161, "The Reclamation Act of 1902"
P.L. 78-534, "Flood Control Act of 1944"
P.L. 95-91, "Department of Energy Organization Act" (1977)
P.L. 102-486, "Energy Policy Act of 1992"
P.L. 66-389, "Sundry Civil Appropriations Act" (1922)
P.L. 76-260, "Reclamation Project Act of 1939"
P.L. 80-790, "Emergency Fund Act of 1948"
P.L. 102-575, "Reclamation Projects Authorization and Adjustment Act of 1992"
"Economy Act" of 1932, as amended (41 stat. 613)
"Interior Department Appropriation Act of 1928" (44 Stat. 957)
P.L. 70-642, "Boulder Canyon Project Act" (1928)
P.L. 75-756, "Boulder Canyon Project Adjustment Act" (1940)
P.L. 98-381, "Hoover Power Plant Act of 1984"
P.L. 75-529, "The Fort Peck Project Act of 1938"
P.L. 84-484, "The Colorado River Storage Project Act of 1956"
P.L. 90-537, "The Colorado River Basin Project Act of 1968"
The Act of June 18, 1954 (68 Stat. 255)
P.L. No 111-5, "American Recovery and Reinvestment Act of 2009"

Falcon and Amistad Operating and Maintenance Fund

Proposed Appropriation Language

For operation, maintenance, and emergency costs for the hydroelectric facilities at the Falcon and Amistad Dams, [$4,490,000] *$4,070,000*, to remain available until expended, and to be derived from the Falcon and Amistad Operating and Maintenance Fund of the Western Area Power Administration, as provided in section 2 of the Act of June 18, 1954 (68 Stat. 255)*: Provided*, That notwithstanding the provisions of that Act and of 31 U.S.C. 3302, up to [$4,262,000] *$3,838,000* collected by the Western Area Power Administration from the sale of power and related services from the Falcon and Amistad Dams shall be credited to this account as discretionary offsetting collections, to remain available until expended for the sole purpose of funding the annual expenses of the hydroelectric facilities of these Dams and associated Western Area Power Administration activities: *Provided further*, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year [2016] *2017* appropriation estimated at not more than [$228,000] *$232,000*: *Provided further*, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred: *Provided further*, That, for fiscal year [2016] *2017*, the Administrator of the Western Area Power Administration may accept up to [$460,000] *$323,000* in funds contributed by United States power customers of the Falcon and Amistad Dams for deposit into the Falcon and Amistad Operating and Maintenance Fund, and such funds shall be available for the purpose for which contributed in like manner as if said sums had been specifically appropriated for such purpose: *Provided further*, That any such funds shall be available without further appropriation and without fiscal year limitation for use by the Commissioner of the United States Section of the International Boundary and Water Commission for the sole purpose of operating, maintaining, repairing, rehabilitating, replacing, or upgrading the hydroelectric facilities at these Dams in accordance with agreements reached between the Administrator, Commissioner, and the power customers.
(Energy and Water Development and Related Agencies Appropriations Act, 2016.)

Explanation of Changes

There is no change in the appropriation language.

Public Law Authorizations
P.L. 103-236, "Foreign Relations Authorization Act, Fiscal Years 1994 and 1995"
The Act of June 18, 1954 (68 Stat. 255)

Western Area Power Administration

	($K)			
	FY 2015 Enacted	**FY 2015 Current**	**FY 2016 Enacted**	**FY 2017 Request**
Gross	1,087,098	1,087,098	1,170,396	1,172,454
Offsets	1,018,130	1,018,103	1,099,796	1,099,641
Net BA	**68,968**	**68,968**	**70,600**	**72,813**

Overview

Western Area Power Administration's (Western or WAPA) mission is to market and reliably deliver cost-based Federal hydroelectric power. Western markets power in 15 central and western states from Federally-owned power plants operated primarily by the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation and the Department of State's International Boundary and Water Commission. Western operates and maintains a high-voltage, integrated transmission system, including approximately 17,000 circuit-miles of high-voltage transmission lines, more than 300 substations/switchyards and associated power system controls, and communication and electrical facilities.

Western serves a diverse group of nearly 700 wholesale customers, including municipalities, cooperatives, public utility and irrigation districts, Federal and state agencies and Native American tribes. In turn, Western's customers provide service to millions of retail consumers.

Western's base program is funded through three appropriation accounts: 1) the Construction, Rehabilitation, Operation and Maintenance Account (CROM); 2) Falcon and Amistad Operating and Maintenance Fund; and 3) Colorado River Basins Power Marketing Fund (CRBPMF). Within these three accounts, there are seven subprograms; four in the CROM Account, one in the Falcon and Amistad Operating and Maintenance Fund and two in CRBPMF.

Highlights and Major Changes in the FY 2017 Budget Request

There are no major programmatic or funding changes in the FY 2017 request.

Western Area Power Administration

Funding by Congressional Control ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Construction, Rehabilitation, Operation and Maintenance (CROM)					
Operation and Maintenance	81,958	81,958	80,901	76,697	-4,204
Construction and Rehabilitation	86,645	86,645	58,374	62,442	+4,068
Purchase Power and Wheeling	441,223	441,223	565,927	581,634	+15,707
Program Direction	227,905	227,905	236,398	226,497	-9,901
Subtotal, CROM Program	837,731	837,731	941,600	947,270	+5,670
Alternative Financing					
Operation and Maintenance	-5,197	-5,197	-1,757	0	+1,757
Construction and Rehabilitation	-74,448	-74,448	-53,585	-43,884	+9,701
Purchase Power and Wheeling	-180,713	-180,713	-213,114	-214,625	-1,511
Program Direction	-5,300	-5,300	-5,273	-6,343	-1,070
Subtotal, Alternative Financing	-265,658	-265,658	-273,729	-264,852	+8,877
Offsetting Collections from Colorado River Dam Fund					
Operation and Maintenance	-1,615	-1,615	-1,314	-1,548	-234
Program Direction	-5,546	-5,546	-6,030	-6,717	-687
Subtotal, Offsetting Collections from Colorado River Dam Fund	-7,161	-7,161	-7,344	-8,265	-921
Offsetting Collections, annual Operation and Maintenance and Program Direction					
Operation and Maintenance	-36,745	-36,745	-36,645	-33,122	+3,523
Program Direction	-174,285	-174,285	-177,697	-178,441	-744
Subtotal, Offsetting Collections, annual Operation and Maintenance and Program Direction	-211,030	-211,030	-214,342	-211,563	+2,779
Offsetting Collections, Purchase Power and Wheeling	-260,510	-260,510	-352,813	-367,009	-14,196
Subtotal, CROM	**93,372**	**93,372**	**93,372**	**95,581**	**+2,209**
Rescission of prior year balances	-1,632	-1,632	0	0	0
Total, CROM	**91,740**	**91,740**	**93,372**	**95,581**	**+2,209**
Federal FTEs	**1,153**	**1,153**	**1,151**	**1,202**	**+51**

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Falcon and Amistad Operating and Maintenance Fund	5,529	5,529	4,950	4,393	-557
Offsetting Collections, annual Operation and Maintenance	-4,499	-4,499	-4,262	-3,838	+424
Alternative Financing	-802	-802	-460	-323	+137
Total, Falcon and Amistad	**228**	**228**	**228**	**232**	**+4**
Federal FTEs	**0**	**0**	**0**	**0**	**0**
Colorado River Basins Power Marketing Fund (CRBPMF)	228,209	228,209	215,647	213,530	-2,117
Offsetting Collections	-251,209	-251,209	-238,647	-236,530	+2,117
Total, CRBPMF	**-23,000**	**-23,000**	**-23,000**	**-23,000**	**0**
Federal FTEs	**299**	**299**	**301**	**302**	**+1**
Transmission Infrastructure Program Fund (TIP)	15,629	15,629	8,199	7,261	-938
Advance Funding	-12,400	-12,400	-2,500	-3,500	-1,000
Offsetting Collections	-3,229	-3,229	-5,699	-3,761	+1,938
Total TIP	**-**	**-**	**-**	-	**-**
Federal FTEs	**17**	**17**	**17**	**17**	**0**
Total, Western Area Power Administration	**68,968**	**68,968**	**70,600**	**72,813**	**+2,213**
Federal FTEs	**1,469**	**1,469**	**1,469**	**1,521**	**+52**

Construction, Rehabilitation, Operation and Maintenance
Western Area Power Administration

	($K)			
	FY 2015 Enacted	**FY 2015 Current**	**FY 2016 Enacted**	**FY 2017 Request**
Gross	837,731	837,731	941,600	947,270
Offsets	-745,991	-745,991	-848,228	-851,689
Net BA	**91,740**	**91,740**	**93,372**	**95,581**

Overview
Western markets and delivers reliable, cost-based Federal hydroelectric power and related services. Western's marketing efforts and delivery capability provide for recovery of annual operational costs, including the generating agencies' hydropower related costs, and repayment of taxpayer investment in the Federal hydropower program. Western repays the Federal investment for which it is responsible within the timeframes established by law and regulations.

Western's Construction, Rehabilitation, Operation and Maintenance Account (CROM) is comprised of four subprograms:

- Operation and Maintenance
- Construction and Rehabilitation
- Purchase Power and Wheeling
- Program Direction

Highlights of the FY 2017 Budget Request
The FY 2017 request continues to support Western's ongoing mission and programs, using a variety of financing methods including appropriations, alternative financing (primarily customer advances), and use of receipt authorities. There are no major programmatic or funding changes in the FY 2017 request. Western's request for an additional 51 FTE are for mission related positions. The funding for these FTE are primarily offset by an increase to reimbursable funded FTE.

Operation and Maintenance
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Operation and Maintenance					
Regular Operation and Maintenance	41,764	41,764	40,188	35,134	-5,054
Replacements and Additions	40,194	40,194	40,713	41,563	+850
Total, Operation and Maintenance	**81,958**	**81,958**	**80,901**	**76,697**	**-4,204**
Alternative Financing	-5,197	-5,197	-1,757	0	+1,757
Use of Receipts from Colorado River Dam Fund	-1,615	-1,615	-1,314	-1,548	-234
Offsetting Collections	-36,745	-36,745	-36,645	-33,122	+3,523
Total, Operation and Maintenance (Budget Authority)	**38,401**	**38,401**	**41,185**	**42,027**	**+842**

Construction, Rehabilitation, Operation and Maintenance
Operation and Maintenance

Description
The Operation and Maintenance (O&M) subprogram is to assure continued reliability of the Federal power system by operating and maintaining Western's transmission system at or above industry standards, including replacement of aging equipment and removal of constraints that would impede power flows.

Regular Operation and Maintenance
Supplies and materials necessary to respond to routine and emergency situations in Western's high-voltage interconnected transmission system will be purchased. This includes miscellaneous equipment and software used for power billing, transmission planning, e-tagging, and energy scheduling, as well as supplies and materials such as wood poles (individual pole replacement only; excludes whole line replacements), instrument transformers, meters, relays, etc.

Replacements and Additions
Western's planned replacements and additions activity is based on an assessment of condition and criticality of equipment, maintenance/frequency of problems on individual items of equipment, availability of replacement parts, safety of the public and Western's personnel, environmental concerns and an orderly work plan. Cost estimates are based on an analysis of system operation/maintenance requirements and concerns, customer-coordinated work plans, actual costs of recent similar projects, and bottom-up budgeting techniques. Planned activity is detailed by category below.

Electrical Equipment
Electrical equipment, such as circuit breakers, transformers, relays, batteries and chargers, reactors, meters, buses, surge arresters, capacitor banks and disconnect switches, will replace obsolete equipment at facilities throughout Western's 15-state area. Test equipment used by maintenance crews, such as metering and relaying test sets, pentameters, Ohm testers, oil dielectric testers, battery load testers, and specialized communication and environmental control test equipment is also included. Also included in this request is funding for Western's wood pole replacement program. This is a continuing program to replace aging wood transmission line structures, line hardware, and repair damaged conductors and static wires. Many of Western's wood transmission line structures were built in the 1950's and 1960's, with the facilities reaching ages in excess of recommended lifespan. Due to age, woodpecker damage, vibratory fatigue, and general deterioration, the system requires constant maintenance upgrades and repairs in order to eliminate the weak links and improve the reliability to our customers.

Communications Equipment
Key to system reliability, replacement of remote terminal units (RTU), telephone systems, microwave links, and aged radio systems with new generation digital radio and fiber optic systems continues. Manufacturers are discontinuing support of obsolete time domain multiplexing (TDM) digital technology equipment in favor of newer packet/internet protocol (IP) based technology as the industry transitions to packet-based networks. Western continues with its migration plans to incorporate packet technologies as the current TDM based equipment reaches its end-of-life. Manufacturers have discontinued support of the digital mobile radio equipment Western is operating due to obsolescence; this equipment will be replaced with new digital mobile radio technology equipment over the next several years. Western's communication systems are currently made up of approximately 11 percent fiber optics, 77 percent fixed radio, and 12 percent mobile radio. Western currently has 1,069 radio frequency authorizations for fixed radio bands, all of which are digital. This funding will not be used to replace equipment impacted by the Spectrum Relocation initiative discussed below.

In addition, Western will continue to upgrade its existing supervisory control and data acquisition (SCADA) systems which control Western's electric power system. These hardware and software upgrades improve grid reliability by allowing the main SCADA computer to communicate with RTUs in over 300 substations across Western's territory, thus allowing the power system dispatcher to operate a device in any of these substations to rapidly make changes in response to electric power industry requirements or system emergencies.

Spectrum Relocation Equipment

The Commercial Spectrum Enhancement Act (CSEA, Title II of P.L. 108-494) of 2004, created the Spectrum Relocation Fund (SRF) to streamline the relocation of Federal systems from specific radio spectrum bands. These spectrum bands will accommodate commercial users and the SRF will facilitate reimbursement to affected agencies for relocation costs. The Federal Communications Commission has allocated this spectrum for Advanced Wireless Services. Funds have been made available to agencies from the crediting of auction receipts to the SRF during fiscal year 2007 and system relocation efforts are underway. Western received $108.2 million for this effort. This amount includes Western's estimated relocation costs, as approved by the Office of Management and Budget, and as reported to the Congress by the Department of Commerce in December 2005. Since receipt of these funds, Western has completed the preliminary and final design work including radio path analysis, tower load analysis, communication building upgrades and replacements, acquiring radio frequency authorizations, and completing a majority of the radio and other communication equipment purchases and installation. Structural loading analyses for both radio and fiber optic systems were completed in FY 2009. The first construction year for the Spectrum Relocation Fund was during FY 2008 with the beginning of building replacement installations. The phased replacement of 2 GHz radio systems is nearing completion with just two site projects remaining. System clean-up, which includes removal of old equipment, buildings, and all associated systems, is anticipated to continue into FY 2017, with project closing activity having begun in the second quarter of FY 2015. Western anticipates returning approximately $21 million received in excess of actual relocation costs to the SRF. No appropriations are being requested for this activity.

Capitalized Movable Equipment

The majority of these funds will be used to purchase and lease the fleet of standard and specialized vehicles required for Western's O&M activities. Although Western prefers to lease its vehicles from GSA, GSA cannot always provide the necessary specialized vehicles, especially in the Upper Great Plains Region and the Desert Southwest Region, where they must be equipped for extreme weather and terrain conditions. In these instances, Western is forced to purchase its specialized vehicles. All sedans, vans, SUVs, and light trucks are leased from GSA**.** Western uses over 700 vehicles, of which 59 percent are leased from GSA. Western replaces government-owned vehicles according to the Federal Management Regulations guidelines, the same guidelines used by GSA. Other capitalized movable equipment in this estimate includes substation test equipment, brush chipper, map board replacement; security equipment such as perimeter intrusion detection devices, card readers and associated software, security cameras and recording devices at various sites throughout Western's service area; information technology equipment such as server and router replacements, firewalls, cyber security upgrades, encryptors for the operation offices, LAN upgrades, network equipment replacements, storage upgrades, upgrades to Western's power system simulator equipment for training purposes, auto-CAD workstation replacements, and helicopter equipment replacements that add value to the helicopter or extend the service life, such as engine, rotor blades, avionics, airframe, and other major components.

Operation and Maintenance

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Operation and Maintenance $80,901,000	**$76,697,000**	**-$4,204,000**
Regular O&M ($40,188,000) The continuing maintenance of Western's transmission system at or above industry standards supports DOE and Western missions by minimizing sudden failure, unplanned outages, and possible regional power system disruptions. Safe working procedures are discussed before work begins to optimize safety for the public, Western's staff, and equipment. The request is based on projected work plans for activities funded from this account. Estimates are based on historical data of actual supplies needed to operate and maintain the transmission system and recent procurement of similar items. This request also includes approximately $472,000 for appropriated O&M annual expenses that are required to fund Western's Salinity and Levee non-reimbursable power systems. The request includes approximately $1,314,000 for activities in the Boulder Canyon Project, funded directly through receipts from the Colorado River Dam.	*Regular O&M ($35,134,000)* Requested funding is to continue the ongoing activities of maintaining Western's transmission system. This request also includes approximately $464,000 for appropriated O&M annual expenses that are required to fund Western's Salinity and Levee non-reimbursable power systems. The request includes approximately $1,548,000 for activities in the Boulder Canyon Project, funded directly through receipts from the Colorado River Dam.	*Regular O&M (-$5,054,000)* The decrease in regular O&M is attributed to a reduction in requirements for vegetation management, revenue meter replacements, LIDAR as-built-studies, and access road repairs. These estimates are attained by reviewing maintenance schedules and are offset slightly by inflationary factors.
Replacements and Additions ($40,713,000) Replacement needs are based on age, reliability, and safety of equipment, customer-coordinated review, cost analysis of rebuild versus replacement, availability of replacement parts, and obsolescence of diagnostic maintenance tools. Estimates are determined using actual costs of similar items.	*Replacements and Additions ($41,563,000)* Requested funding is to continue ongoing efforts.	*Replacements and Additions (+$850,000)* The increase in Replacement and Additions is attributable to inflationary factors.

Construction and Rehabilitation
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Construction and Rehabilitation					
Transmission Lines and Terminal Facilities	51,517	51,517	38,425	41,408	+2,983
Substations	33,813	33,813	19,298	18,773	-525
Other	1,315	1,315	651	2,261	+1,610
Subtotal, Construction and Rehabilitation	**86,645**	**86,645**	**58,374**	**62,442**	**+4,068**
Alternative Financing	-74,448	-74,448	-53,585	-43,884	+9,701
Total, Construction and Rehabilitation	**12,197**	**12,197**	**4,789**	**18,558**	**+13,769**

Construction, Rehabilitation, Operation and Maintenance
Construction and Rehabilitation

Description

The Construction and Rehabilitation (C&R) subprogram supports Department of Energy strategies and Western's mission to deliver reliable, clean Federal hydroelectric power by emphasizing the replacement, upgrade, and modernization of the electrical system infrastructure to bring continued reliability, improved connectivity, and increased flexibility and capability to the power grid.

Financing of the FY 2017 C&R budget, planned at $62.4 million, will continue to rely heavily on voluntary stakeholder participation in alternative methods for capital financing. Approximately 70 percent of the program funding, or $43.9 million, will be required from stakeholders, requiring significant partnering efforts.

Western has initiated a formalized asset management program to capture data uniformly and systematically on condition, consequences of failure data, and other relevant asset information. The improvements to Western's current asset management practices include stronger, more objective data driven evidence, risk-informed priority and decision making, and greater transparency to stakeholders in the allocation of limited resources.

The request incorporates the most current information to identify and schedule necessary C&R projects. Western assigns priority to those situations that pose the highest risk to safety and system reliability, while meeting the mandates for open access to our transmission system. When conditions change, Western shifts funding as necessary to ensure the highest program priorities continue to be met to maintain the reliability and integrity of Western's power transmission system.

All replacement and rehabilitation plans are coordinated with stakeholders to help establish the timing and scope of work at specific substations. When upgrades or additional capacity are required, Western actively pursues partnering with neighboring utilities to jointly finance activities, resulting in cost savings and increased efficiencies for participants.

Unless otherwise provided by law, all C&R costs are recovered from ratepayers with interest over the useful life of the asset providing a revenue stream to the U.S. Treasury. In rare cases, where a C&R project is abandoned, costs are still recovered, but may be expensed.

Transmission Lines and Terminal Facilities

Western's 17,000 circuit-mile transmission infrastructure was primarily constructed in the 1940s through 1960s. Thousands of miles of transmission line already exceed their design life. For FY 2017, there is continued focus on replacement and upgrade of deteriorating and inadequate infrastructure across Western's service area using non-appropriated alternative financing, with increasing emphasis on deteriorating transmission lines in the Parker-Davis systems in Arizona. In addition, activities are underway to address voltage support problems in the Colorado front-range, impacts of growing loads in the Pick-Sloan Missouri Basin service territory, and reliability or compliance concerns in northern California.

Substations

Western owns and operates more than 300 substations across its 15-state service territory. Many of these facilities were designed and constructed more than 50 years ago. As substation equipment (such as power transformers, circuit breakers, and control equipment) ages, maintenance costs increase, replacement parts become unavailable, risk of outages increase, and system reliability declines. The normal service life for power transformers and circuit breakers is 40 years and 35 years, respectively. This activity funds the construction, replacement, or upgrade of the substations and its components necessary to sustain reliable power delivery and support a stable, flexible interconnected power grid.

Other

The Other category includes C&R activities not otherwise included in the Substations or Transmission Lines and Terminal Facilities categories. These include communication system equipment and other miscellaneous projects covering items like construction or major rehabilitation of maintenance facilities, access roads, and facility decommissioning and removal costs.

Construction and Rehabilitation

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Construction and Rehabilitation $58,374,000	**$62,442,000**	**+$4,068,000**
Transmission and Terminal Facilities $38,425,000	**$41,408,000**	**+$2,983,000**
Continuing Work ($32,838,000) • Continue rehabilitation and construction required on Western's transmission lines and terminal facilities to cost-effectively market and deliver clean renewable Federal hydropower and promote a strong record of reliability and safety. • No appropriations provided for this activity. • Alternative financing ($32,838,000) sought for the following projects: o Blythe-Parker (Headgate Rock) (CA/AZ) transmission line rebuild to improve reliability, safety, accessibility and transmission system communications along the deteriorating 52-mile transmission line o Cottonwood-Olinda (CA) 9-mile double circuit transmission line re-conductor to strengthen NERC compliance, ensure access to northern renewable hydro-generation, increase transfer capability, and improve maintenance and operational flexibility o Estes-Flatiron (CO) transmission line rebuild to improve reliability and accessibility of the deteriorating 17-mile transmission line	*Continuing Work($26,492,000)* • Continue rehabilitation and construction required on Western's transmission lines and terminal facilities to cost-effectively market and deliver clean renewable Federal hydropower and promote a strong record of reliability and safety. • No appropriations provided for this activity. • Alternative financing ($26,492,000) sought for the following projects: o Estes-Flatiron (CO) transmission line rebuild to improve reliability and accessibility of the deteriorating 17-mile transmission line serving the city of Estes Park, CO o Complete facility rating mitigation projects (AZ) to meet NERC compliance requirements, secure line capacity ratings, and improve reliability and safety of the Parker-Davis transmission system o Gila-Knob (AZ) 161-kV transmission line re-route of 2-mile segment in advance of neighboring utility 500kV transmission line build o Headgate Rock-Parker (AZ) 161-kV transmission line rebuild to improve reliability and safety, and reduce maintenance costs o Lovell-Yellowtail (WY) 115-kV transmission line rebuilds to replace deteriorating structures and improve capacity, communications and reliability o Sidney-Pietz-Sterling (CO/NE) transmission line rebuild and re-conductor to improve reliability, upgrade the transfer capability of the 65-year,	*Continuing Work (-$6,346,000)* Although the number of continuing work projects increase, the financing required decreases as larger planned FY 2016 projects are expected to come to a close

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
	39-mile line and avoid estimated loss of $1.5 million annually	
Rehabilitation Starts ($5,587,000) • Address additional system reliability risk and operational problems. • No appropriations requested for project starts in FY 2016. • Alternative financing ($5,587,000) sought for the following projects: o Miscellaneous Facility Rating Mitigation Projects (AZ) to meet NERC compliance requirements, secure line capacity ratings, and improve reliability and safety of the Parker-Davis transmission system o Keswick-Airport-Cottonwood (CA) transmission line re-conductor project to strengthen NERC compliance, ensure access to northern renewable hydro-generation, increase transfer capability, and improve maintenance and operational flexibility o Sidney-Pietz-Sterling (CO/NE) transmission line rebuild and re-conductor to improve reliability, upgrade the transfer capability of the 60-year, 39-mile line and avoid estimated loss of $1.5 million annually	*Rehabilitation Starts ($14,916,000)* • Address additional system reliability risk and operational problems. • Appropriations ($5,100,000) are requested for critical project starts in FY 2017. o Coolidge-Oracle(AZ) 115-kV transmission line re-conductor to improve reliability, safety, and reduce maintenance costs for this heavily congested aging transmission line o Rodgers-Coolidge (AZ) 230-kV transmission line re-conductor to increase current rating and reduce transmission congestion • Alternative financing ($9,816,000) sought for the following projects: o Groton South-Ordway (SD) new 115-kV transmission line build to mitigate low voltage issue causing outage conditions on the Ordway-Groton transmission line o Pinal Central-Electrical District 5 (AZ) 230-kV addition to existing transmission lines for interconnection increasing capacity and reliability	*Rehabilitation Starts (+$9,329,000)* The increase reflects investment in Arizona and South Dakota to address deteriorating transmission lines and increasing congestion
Substations $19,298,000	**$18,773,000**	**-$525,000**
Continuing Work ($14,258,000) • Continue construction, modification, and rehabilitation of Western's substations to ensure power system reliability and stability. • Appropriations ($1,895,000), targeted for two of Western's most critical reliability risks, provide for the following activities:	*Continuing Work ($9,847,000)* • Continue construction, modification, and rehabilitation of Western's substations to ensure power system reliability and stability. • Appropriations ($8,105,000), targeted for two of Western's most critical reliability risks, provide for the following activities:	*Continuing Work (-$4,411,000)* The decrease reflects prior year projects moving to completion stage

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
o New Underwood (SD) Substation transformer replacement to improve reliability of the 50-year, undersized transformer and avoid load shedding and overloading risks for the Rapid City, ND area o Sioux City (IA) 2 Substation reactor replacement and bus modifications required due to deteriorating conditions, catastrophic failure of sibling reactors, and criticality of the facility • Alternative financing ($12,363,000) sought for the following activities: o Fargo (ND) Substation transformers replacement due to age, condition, and increased risk of overloading o Gila (AZ) Substation 230-kV yard rebuild to eliminate reliability, safety, and environmental hazards at the aging facility o Grand Island (NE) Substation transformer replacement to improve reliability due to poor condition, obsolescence, and environmental risks of existing transformer o Medicine Bow (WY) control building replacement to correct code violations, improve safety and reliability, and update control and communications equipment	o Brookings Substation (SD) upgrade to improve reliability of power delivery under fault conditions and resolve heavy flooding conditions in existing control building; upgrade includes breaker, switching, control board, control building replacement and bus re-configuration o Groton South (SD) Substation construction to provide greater reliability and prevent low voltage impacting the city of Aberdeen, SD during system faults • Alternative financing ($1,742,000) sought for the following activities: o Gila (AZ) Substation 230-kV yard rebuild to eliminate reliability, safety, and environmental hazards at the aging facility o Jamestown (ND) Control Panel and Control Building replacement including associated protection and communication equipment to improve reliability and safety	

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Rehabilitation Starts ($5,040,000) • Address additional system reliability risk and operational problems. • Appropriations ($2,894,000) provide for the following activities: o Brookings Substation (SD) upgrade to improve reliability of power delivery under fault conditions and resolve heavy flooding conditions in existing control building; upgrade includes breaker, switching, control board, control building replacement and bus re-configuration o Groton South (SD) Substation construction to provide greater reliability and prevent low voltage impacting the city of Aberdeen, SD during system faults • Alternative financing ($2,146,000) sought for the following activities: o Jamestown (ND) Control Panel and Control Building replacement including associated protection and communication equipment to improve reliability and safety o Tucson (AZ) Substation rebuild to improve reliability and safety due to condition and obsolescence of the equipment and reduce environmental risks of legacy underground oil system at the 60-year-old facility	*Rehabilitation Starts ($8,926,000)* • Address additional system reliability risk and operational problems. • Appropriations ($5,353,000) provide for the following activities: o Olinda-O'Banion-Elverta (CA) 230-kV shunt reactive control equipment additions to improve reliability by controlling high transmission system voltage without need to remove lines from service o Gila Substation (AZ) 69-kV yard rebuild to improve reliability and safety of deteriorating facilities, and reduce rising maintenance costs and outage risk impacting the Parker-Davis, Salinity Control Project, and Colorado River Front Work and Levee system • Alternative financing ($3,573,000) sought for the following activities: o Additional financing needed for Olinda-O'Banion-Elverta (CA) 230-kV shunt reactive control equipment additions o Cheyenne (WY) Substation 115-kV bus replacement providing for greater reliability and load capability o Devils Lake (ND) Substation transformer replacement, including replacement of deteriorating control building and equipment to improve reliability and safety	*Rehabilitation Starts (+$3,886,000)* The increase is due to the addition of the shunt reactive control equipment in CA, and rebuild of aging facilities at the Gila Substation in AZ

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Other $651,000	**$2,261,000**	**+$1,610,000**
Communication Systems ($351,000) • No Appropriations ($0) requested • Alternative financing ($351,000) sought for continued communication system improvements for the Pick-Sloan Missouri Basin Program	*Communication Systems ($311,000)* • No Appropriations ($0) requested • Alternative financing ($311,000) sought for continued communication system improvements for the Pick-Sloan Missouri Basin Program	*Communication Systems (-$40,000)* Decrease reflects reduction in planned communication system investments
Miscellaneous ($300,000) • No Appropriations ($0) requested • Alternative financing ($300,000) sought for the following activities: o Continues Power facility development program to support reliability, safety, and cost effectiveness of Western's capital investments through access to industry best practices, system design approaches, and state-of–the-art technologies	*Miscellaneous ($1,950,000)* • No Appropriations ($0) requested • Alternative financing ($1,950,000) sought for the following activities: o Replacement of uninterruptible power supply and distribution equipment for Western's Rocky Mountain Region Power Marketing Operations Complex (CO) to provide redundant power sources for mission critical systems	*Miscellaneous (+$1,650,000)* Increase necessary to provide redundant uninterruptible power supply for mission critical systems

Purchase Power and Wheeling
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Purchase Power and Wheeling					
Central Valley	301,035	301,035	326,642	345,347	+18,705
Pick-Sloan Missouri Basin and other Programs	140,188	140,188	239,285	236,287	-2,998
Subtotal, Purchase Power and Wheeling	**441,223**	**441,223**	**565,927**	**581,634**	**+15,707**
Alternative Financing Needed	-180,713	-180,713	-213,114	-214,625	-1,511
Offsetting Collections	-260,510	-260,510	-352,813	-367,009	-14,196
Total, Purchase Power and Wheeling (New Budget Authority)	**0**	**0**	**0**	**0**	**0**

Construction, Rehabilitation, Operation & Mainenance
Purchase Power and Wheeling

Description
The Purchase Power and Wheeling subprogram continues to support Western's marketing efforts and delivery capability which spans a 1.3 million square mile area serving a diverse group of several hundred wholesale customers, including municipalities, cooperatives, public utility and irrigation districts, Federal and state agencies and Native American tribes. No appropriated budget authority is necessary.

Central Valley Project
Western continues to deliver on its contractual power commitments to customers under the Central Valley Project's Post 2004 Marketing Plan. The budget request assumes current full load service customers will continue to choose service from Western through "Custom Product" contractual agreements. Western also purchases power to support variable resource customers on a pass-thru basis. If project net generation is not sufficient, Western may also purchase to support project use load, First Preference Customer load, and sub-control area reserve requirements. As part of the Order 741, FERC promulgated guidance requiring RTO/ISOs to take physical title/ownership to the energy bought/sold in their respective markets, making it necessary for Western to acknowledge that customers receive the financial, and not the physical benefit of their Federal power allocations. Western is voluntarily participating in the California greenhouse gas cap-and-trade program which became effective January 1, 2013.

Pick-Sloan Missouri Basin and Other Programs
The budget request continues to support long-term firm power commitments to customers of the Eastern and Western divisions of the Pick-Sloan Missouri Basin Program, the Fryingpan-Arkansas Project, and the Parker-Davis Project commensurate with the levels of average firm hydroelectric energy marketed by Western. The request also provides transmission support for the Pacific Northwest-Southwest Intertie Project. The total program estimates shown are based primarily on market pricing of short term firm energy, negotiated transmission rates, and Western and generating agency's forecasts.

Purchase Power and Wheeling

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Central Valley Project		
Program Requirements ($326,642,000) • The Purchase Power and Wheeling subprogram supports Western's power marketing effort by providing for power purchases to firm the variable hydropower resource and securing transmission services as necessary to meet its contractual power delivery obligations.	*Program Requirements ($345,347,000)* • The Purchase Power and Wheeling subprogram continues to support Western's power marketing effort by providing for power purchases to firm the variable hydropower resource and securing transmission services as necessary to meet its contractual power delivery.	*Program Requirements (+$18,705,000)* Increases associated with California Independent System Operator and other utility transmission services. Amounts are for offsetting collection authority and alternative financing; no direct appropriations are requested for this activity.
Alternative Financing (-$164,521,000) • Contractual arrangements made with customers provide opportunities for alternative financing of the purchase power requirements. Alternative financing methods include net billing, bill crediting, energy exchanges, and direct customer funding.	*Alternative Financing (-$166,277,000)* • Contractual arrangements made with customers provide opportunities for alternative financing of the purchase power requirements. Alternative financing methods include net billing, bill crediting, energy exchanges, and direct customer funding.	*Alternative Financing (-$1,756,000)* Amounts are for offsetting collection authority and alternative financing; no direct appropriations are requested for this activity.
Pick-Sloan Missouri Basin		
Program Requirements ($239,285,000) • The Purchase Power and Wheeling subprogram continues to support Western's power marketing effort by providing for power purchases to firm the variable hydropower resource and securing transmission services as necessary to meet its contractual power delivery obligations.	*Program Requirements ($236,287,000)* • The Purchase Power and Wheeling subprogram continues to support Western's power marketing effort by providing for power purchases to firm the variable hydropower resource and securing transmission services as necessary to meet its contractual power delivery.	*Program Requirements (-$2,998,000)* Decrease in purchase power requirement is due to lower estimates for Pick Sloan. Amounts are for offsetting collection authority and alternative financing; no direct appropriations are requested for this activity.

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Alternative Financing (-$48,593,000) • Alternative financing methods negotiated with customers provide an offset to the total program receipt financing requirement. Alternative financing methods include net billing, bill crediting, energy exchanges, and direct customer funding.	*Alternative Financing (-$43,348,000)* • Contractual arrangements made with customers provide opportunities for alternative financing of the purchase power requirements. Alternative financing methods include net billing, bill crediting, energy exchanges, and direct customer funding.	*Alternative Financing (+$5,245,000)* Amounts are for offsetting collection authority and alternative financing; no direct appropriations are requested for this activity.

Program Direction

Overview

Western's Program Direction subprogram provides compensation and all related expenses for its workforce, including those employees that operate and maintain Western's high-voltage interconnected transmission system and associated facilities; those that plan, design, and supervise the construction of replacements, upgrades and additions (capital investments) to the transmission facilities; those that market the power and energy produced to repay annual expenses and capital investment; and those that administratively support these functions.

The Program Direction subprogram supports DOE and Western missions. To attain reliability performance, dispatchers match generation to load minute-by-minute to meet or exceed performance levels established by NERC. Energy schedulers maximize revenues from non-firm energy sales and power rates are reviewed and adjusted to support repayment of the Federal investment. Western trains its employees on a continuing basis in occupational safety and health regulations, policies and procedures, and conducts safety meetings at employee, supervisory and management levels to keep the safety culture strong. Accidents are reviewed to ensure lessons are learned and proper work protocol is in place.

The Program Direction subprogram further supports Western's Human Capital Management (HCM) Workforce Plan, which includes the following activities: exploring ways to increase Human Resource efficiency through consolidation; the development and/or expansion of intern/apprenticeship programs in the occupations of energy marketing, dispatcher, lineman, and electrician; introduction of an under-study program in Power Marketing, prior to an incumbent retiring; rotational training programs for engineers; strategic use of knowledge sharing and training events in critical occupations; and, succession planning development programs for mid- to upper-level graded Federal positions. By design, costs for these HCM programs will be minimal as local area expertise and facilities are used to the maximum extent possible. The HCM Workforce Plan noted that no new OMB Circular No. A-76 studies were required and/or anticipated at this time.

In consultation with its customers, Western reviews required replacements and upgrades to its existing infrastructure to sustain reliable power delivery to its customers and to contain annual maintenance expenses. The timing and scope of these replacements and upgrades are critical to assure that Western's facilities do not become the "weak link" in the interconnected system. Western pursues opportunities to join with neighboring utilities to jointly finance activities, which avoid redundant facilities and result in realized cost savings and/or increased efficiencies for all participants.

Highlights of the FY 2017 Budget Request

The FY 2017 request provides for the continuation of Western's CROM account activities related to Program Direction at the level necessary to meet mission requirements. Western's request for an additional 51 FTE are for mission required positions. The funding for these FTE are primarily offset by an increase to reimbursable funded FTE.

Program Direction
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Program Direction					
Salaries and Benefits	148,292	148,292	150,874	153,234	+2,360
Travel	11,262	11,262	11,219	10,521	-698
Support Services	26,052	26,052	30,777	27,323	-3,454
Other Related Expenses	42,299	42,299	43,528	35,419	-8,109
Total, Program Direction	**227,905**	**227,905**	**236,398**	**226,497**	**-9,901**
Use of Alternative Financing	-5,300	-5,300	-5,273	-6,343	-1,070
Use of Receipts from Colorado River Dam Fund	-5,546	-5,546	-6,030	-6,717	-687
Offsetting Collections, Other Expenses	-174,285	-174,285	-177,697	-178,441	-744
Total, Program Direction	**42,774**	**42,774**	**47,398**	**34,996**	**-12,402**
Federal FTEs	**1,153**	**1,153**	**1,151**	**1,202**	**+51**
Support Services					
Technical Support					
Economic and Environmental Analysis	5,767	5,767	2,959	4,897	+1,938
Total, Technical Support	**5,767**	**5,767**	**2,959**	**4,897**	**+1,938**
Management Support					
Automated Data Processing	6,448	6,448	13,916	11,081	-2,835
Training and Education	1,552	1,552	1,572	1,685	+113
Reports and Analyses Management and General Administrative Support	12,285	12,285	12,330	9,660	-2,670
Total Management Support	**20,285**	**20,285**	**27,818**	**22,426**	**-5,392**
Total, Support Services	**26,052**	**26,052**	**30,777**	**27,323**	**-3,454**
Other Related Expenses					
Rent to GSA	2,913	2,913	2,760	2,432	-328
Communication, Utilities, Misc.	4,679	4,679	5,291	5,920	+629
Printing and Reproduction	171	171	59	63	+4
Other Services	24,016	24,016	24,748	15,495	-9,253

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Training	55	55	51	40	-11
Purchases from Gov. Accounts	1,200	1,200	848	992	+144
Operation and Maintenance of Equipment	1,025	1,025	876	1,034	+158
Supplies and Materials	4,082	4,082	4,066	4,097	+31
Equipment	2,071	2,071	2,398	2,416	+18
Working Capital Fund	2,087	2,087	2,431	2,930	+499
Total, Other Related Expenses	**42,299**	**42,299**	**43,528**	**35,419**	**-8,109**

Program Direction

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Program Direction $236,398,000	**$226,497,000**	**-$9,901,000**
Salaries and Benefits $150,874,000	**Salaries and Benefits $153,234,000**	**Salaries and Benefits +$2,360,000**
Salary and benefits provide for Federal employees who construct and replace, operate and maintain, on a continuing basis, Western's high-voltage interconnected transmission system. Salary and benefits funds those FTEs assigned to this account, including those salaries determined through negotiations.	Requested funding supports ongoing activities.	The increase to salary and benefits is to support the related escalation factors for those FTE funded through this account. The increase in FTE is required to support mission related activities and positions within the CROM account. The budget impact for these CROM FTE are offset by an increase to reimbursable funded FTE for work sponsored by Western's customers. Western programmatically budgeted for 64 additional FTE in reimbursable activity, and -13 FTE less in appropriated funding. This nets to a total of +51 FTE within CROM. New FTE requested are defined by the following functions: IT Specialists to operate Western's SCADA system (+3); IT Specialists to support Western's Cyber Security Program and various IT initiatives (+6); Physical Security Specialists to assist in monitoring and mitigating risks to Western's physical assets (+7); Power System Dispatchers and Operation Engineers to manage Real Time Desk Operations due to increasing NERC requirements which include real time assessments every 30 minutes (+19); Ops/Dispatcher to coordinate regional outages (+1); Asset Management Specialists responsible for developing and implementing asset/life cycle management strategies, plans, policies, and business case evaluations (+4); Archaeologists are required to provide review on increasing applicant interconnections requests for renewable energy projects such as wind energy as well as requests for gas turbine and transmission lines (+3); Maintenance

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
		Management Specialist (+1); Electrical Engineers (+2); Public Utility Specialists (+3); Financial Policy Analyst (+1); Performance Management Analyst (+1); and a Supervisory Auditor (+1). These positions are critical to Western's mission related activities. The CROM account includes the transfer/offset of -1 within target FTE to the CRBPMF (+1) in support of routine maintenance activity.
Travel $11,219,000	**Travel $10,521,000**	**Travel -$698,000**
Planned essential travel supports Western's mission-related operation and maintenance activities. In support of OMB Memorandum M-12-12 Promoting Efficient Spending to Support Agency Operations, Western is reducing its travel by limiting travel associated with general agency operations, administrative training, and conferences. Also, Western will strive to find alternatives to attain required training by means other than by traveling.	Requested funding supports ongoing activities.	The slight decrease in travel supports Western's efforts to increase video conferencing to lessen travel requirements. This decrease is slightly offset by inflationary factors.
Support Services $30,777,000	**Support Services $27,323,000**	**Support Services -$3,454,000**
Support Services funded in this category include information processing, warehousing, job related training and education, engineering, miscellaneous advisory and assistance services, and general administrative support.	Requested funding supports ongoing activities.	Decreases to this activity are primarily driven by a decrease in planned IT support for the update to Western's core financial system. Also impacting this decrease are the contractual requirements for administrative support which are partially offset in Western's request for an increase in Federal FTE. Offsetting this decrease is an increase to economic and environmental analysis. Programmatic requirements for this activity support Western's 10-year Capital Plan.
Other Related Expenses $43,528,000	**Other Related Expenses $35,419,000**	**Other Related Expenses -$8,109,000**
Other related expenses include rental space, utilities, supplies and materials, telecommunications, computers, printing and reproduction, training tuition, and DOE's working	Requested funding supports ongoing activities.	The decrease to this activity is primarily attributable to a decrease in services such as support for Western's Integrated Vegetation Management Program since the program is nearing completion, as

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
capital fund distribution. Rental space costs assume the General Services Administration's (GSA) inflation factor. Other costs are based on historical usage and actual cost of similar items.		well as a decrease in contractual requirements for inspections. GSA rental space is also decreasing, which is partially offset by an increase to utilities. Utilities are increasing due to inflationary factors and a renegotiation of the GSA space lease agreement whereby Western will pay for utilities directly and not through the lease agreement. Other increases offsetting the decreases within this activity include the distribution of cost estimates to Western from DOE's Working Capital Fund, as are estimates for purchases from other government accounts and the maintenance of office equipment. Other increases are inflationary.

Falcon and Amistad Operating and Maintenance Fund

	($K)			
	FY 2015 Enacted	**FY 2015 Current**	**FY 2016 Enacted**	**FY 2017 Request**
Gross	5,529	5,529	4,950	4,393
Offsets	-5,301	-5,301	-4,722	-4,161
Net BA	**228**	**228**	**228**	**232**

Overview

The Falcon and Amistad Operating and Maintenance fund (Maintenance Fund) was established in the Treasury of the United States as directed by the Foreign Relations Authorization Act, FYs 1994 and 1995. The Maintenance Fund is administered by Western's Administrator for use by the Commissioner of the U. S. Section of the International Boundary and Water Commission (IBWC) to defray administrative, O&M, replacement, and emergency costs for the hydroelectric facilities at the Falcon and Amistad Dams. IBWC owns and operates the U.S. portion of the projects, and Federal staff funded under this program continues to be allocated to the U.S. Section of IBWC by the Department of State. The Falcon and Amistad project supports Western's program goals by providing power to rural electric cooperatives through Western. With the exception of monies received from the Government of Mexico, all revenues collected from the sale of electric power generated at the Falcon and Amistad Dams are credited to the Maintenance Fund. Monies received from the Government of Mexico are credited to the General Fund of the U.S. Treasury. Revenues collected in excess of operating expenses are used to repay, with interest, the cost of replacements and original investments. Full funding will support 24-hour/day operation and maintenance of the two power plants to ensure response to ever-changing water conditions, customer demand, and continual coordination with operating personnel of the Government of Mexico.

Highlights of the FY 2017 Budget Request

In FY 2017, Western's request has been formulated to meet its power marketing and contractual power delivery obligations with continued high marks for reliability. Revenues collected from customers to recover the costs of the Federal Power Program will be sufficient to provide for Western's FY 2017 planned expenses for the power plants in the IBWC.
Also included in FY 2017 is the continuation of Western's FY 2016 request to allow for U.S. Customer(s) of the Falcon and Amistad Dams to contribute funds for use by the IBWC in fulfilling their duties in accordance with agreements between Western, IBWC, and the power customers. The change will allow work to be accomplished using customer advances/alternative financing, a funding mechanism used throughout Western under the Contributed Funds Act, 43 USC 395. The customer contributed funds is planned to predominantly assist in capitalized replacement projects.

Falcon and Amistad Operating and Maintenance Fund
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Western Area Power Administration					
Falcon and Amistad Operating and Maintenance Fund	5,529	5,529	4,950	4,393	-557
Subtotal, Falcon and Amistad Operating and Maintenance Fund	**5,529**	**5,529**	**4,950**	**4,393**	**-557**
Offsetting Collections	-4,499	-4,499	-4,262	-3,838	+424
Alternative Financing	-802	-802	-460	-323	+137
Total, Falcon and Amistad Operating and Maintenance Fund	**228**	**228**	**228**	**232**	**+4**

Falcon and Amistad Operating and Maintenance Fund

Description

The Falcon and Amistad Project consists of two international dams located on the Rio Grande River between Texas and Mexico. The United States and Mexico operate separate power plants on each side of the Rio Grande River. The Operating and Maintenance Fund was established in the Treasury of the United States and is administered by Western's Administrator for use by the Commissioner of the U.S. Section of the IBWC to defray administrative, O&M, replacement, and emergency costs for the hydroelectric facilities at the Falcon and Amistad Dams.

Salaries and Benefits

This activity funds salaries and benefits for the 39 positions of the U.S. Section of the IBWC who operate and maintain the two power plants on a 24-hour/day basis, including planned maintenance activities, required safety services, and emergency response to flood operations and/or equipment failure.

Routine Services

This activity funds routine services such as inspection and service of the HVAC and air compressor system, fire suppression systems, elevators, self-contained breathing apparatus, recharge and hydro-testing of fire extinguishers, calibration of test equipment, rebuild of electric motors, and repair of obsolete equipment when replacement parts are no longer available.

Miscellaneous Expenses

This activity funds travel, training, communications, utilities, printing, and office supplies and materials for the IBWC employees and technical advisors. The request includes essential training for employees to comply with standards of the Interagency Commission on Dam Safety, Occupational and Health Administration, and the National Dam Safety Act.

Marketing, Contract, Repayment Studies

This activity funds interest payments to the U.S. Treasury. Estimates are based on Power Repayment Studies for the Projects funded in this account. This activity funds power marketing, administration of power contracts, and preparation of rate and repayment studies. Based on accurate studies, staff ensures power revenues are set at an appropriate level to recover annual expenses and meet repayment schedules.

Falcon and Amistad Operating and Maintenance Fund

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Falcon and Amistad Operating and Maintenance Fund $4,950,000	**$4,393,000**	**-$557,000**
Salaries and Benefits ($3,030,000) This activity funds the salaries and benefits for those employees assigned to the U.S. Section of the IBWC who operate and maintain the two power plants.	*Salaries and Benefits ($3,079,000)* Requested funding supports ongoing activities.	*Salaries and Benefits (+$49,000)* The increase to salaries and benefits is primarily due to inflationary factors.
Routine Services ($1,625,000) This activity funds routine services such as equipment inspections and maintenance services.	*Routine Services ($1,006,000)* Requested funding supports ongoing activities.	*Routine Services (-$619,000)* The decrease is primarily due to the anticipated completion of capital projects at the Amistad power plant (excitation system, replacement of trip units and refurbishment of breakers, corrosion prevention, and redesign of new sewage ejector system).
Miscellaneous Expenses ($275,000) This activity funds travel, training, communications, utilities, printing, and office supplies and materials for the IBWC employees and technical advisors.	*Miscellaneous Expenses ($274,000)* Requested funding supports ongoing activities.	*Miscellaneous Expenses (-$1,000)* The decrease in miscellaneous expenses is primarily due to the reduction of the number of GSA vehicles from 2 to 1. The total reduction is offset by slight inflationary increases for supplies and materials, utilities, and printing.
Marketing, Contracts, Repayment Studies ($20,000) This activity funds interest payments to the U.S. Treasury, power marketing, administration of power contracts, and preparation of rate and repayment studies.	*Marketing, Contracts, Repayment Studies ($34,000)* Requested funding supports ongoing activities.	*Marketing, Contracts, Repayment Studies (+$14,000)* The slight increase is due to legal counsel costs for contract administration and inflationary factors.

Colorado River Basins Power Marketing Fund
($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Gross	228,209	228,209	215,647	213,530
Offsets	-251,209	-251,209	-238,647	-236,530
Net BA	**-23,000**	**-23,000**	**-23,000**	**-23,000**

Overview
Western operates and maintains the transmission system for the projects funded in this account to ensure an adequate supply of reliable electric power in a clean and environmentally safe, cost-effective manner. The Colorado River Basins Power Marketing Fund Program (CRBPMF) is comprised of three power systems: the Colorado River Storage Project, including the Dolores and Seedskadee Projects; the Fort Peck Project; and the Colorado River Basin Project. Western is responsible for construction, maintenance, and operation of facilities for transmitting and marketing the electrical energy generated in these power systems.

Highlights of the FY 2017 Budget Request
In FY 2017, Western's request has been formulated to meet its power marketing and contractual power delivery obligations with continued high marks for reliability. Revenues collected from customers to recover the costs of the Federal Power Program will be sufficient to provide for Western's FY 2017 planned expenses for the power systems in the CRBPMF.

Colorado River Basins Power Marketing Fund
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Colorado River Basins Power Marketing Fund					
Equipment, Contracts and Related Expenses					
Supplies, Materials and Services	22,399	22,399	23,017	17,279	-5,738
Purchase Power Costs	106,033	106,033	107,140	113,082	+5,942
Capitalized Equipment	26,680	26,680	13,963	13,963	0
Interest/Transfers	11,996	11,996	9,720	7,000	-2,720
Total, Equipment, Contracts and Related Expenses	**167,108**	**167,108**	**153,840**	**151,324**	**-2,516**
Program Direction	**61,101**	**61,101**	**61,807**	**62,206**	**+399**
Total, Operating Expenses from new authority	**228,209**	**228,209**	**215,647**	**213,530**	**-2,117**
Offsetting Collections Realized	-251,209	-251,209	-238,647	-236,530	+2,117
Total, Obligational Authority	**-23,000**	**-23,000**	**-23,000**	**-23,000**	**0**

Colorado River Basins Power Marketing Fund
Equipment, Contracts and Related Expenses

Description

Western's equipment, contracts and related expenses are necessary to operate and maintain this activity. Revenues from the sale of electric energy, capacity and transmission services replenish the fund and are available for expenditure for operation, maintenance, power billing and collection, program direction, purchase power and wheeling, interest, emergencies, and other power marketing expenses.

Supplies, Materials and Services

This activity funds the procurement of supplies, materials, and services necessary to respond to routine and emergency situations in the transmission system, and the continuation of reimbursements to the U.S. Army Corps of Engineers for operation and maintenance of the Fort Peck Power Plant. Estimates are based on recent actual costs for supplies needed to maintain transmission system reliability.

Purchase Power Costs

This activity funds the procurement of electrical power, transmission capacity and wheeling services on the open market. The request anticipates the results of continued low-steady-flow tests conducted at Glen Canyon Dam, as required by the Glen Canyon Dam Environmental Impact Statement Record of Decision. Additionally, the request includes obligation authority to accommodate replacement power purchases for customers served by the Colorado River Storage Project. The replacement power purchases, a provision of the Salt Lake City Area Integrated Projects electric power contracts, are made at the request of power customers at times when Western lacks sufficient generation to meet its full contract commitment. The funds for the replacement power purchases are advanced by the requesting customers prior to the purchase.

Capitalized Equipment

This activity funds the procurement of capitalized equipment including circuit breakers, transformers, relays, switches, transmission line equipment, microwave, SCADA, and other communication and control equipment to assure reliable service to Western's customers. Replacement and upgrade of aged power system components are crucial to system reliability and transmission services. Planned communications equipment purchases include replacing existing ground wire with fiber optic ground wire and upgrading conductors. Included also is funding for the continuation of the project to replace analog microwave with fiber optic ground wire and fiber optic terminal. Cost comparisons have shown that fiber optics have a significant lower life cycle cost and higher bandwidth capacity than digital microwave.

Transmission line estimates include the purchase of poles, crossarms, conductors, fusion splicers, line switches, overhead ground wire and hardware for the continued transmission line rebuilds. This estimate includes line rebuilds with the anticipated completion of 10 miles a year.

Planned substation estimates include upgrades, replacement of breakers and circuit switches, and replacement of transformers, test equipment, as well as other aged equipment at various substations. Western cyclically replaces older electro-mechanical relays with microprocessor relays. The microprocessor relays assist in finding faults faster in order to more efficiently restore service to customers. Other miscellaneous items required for substation replacements include surge arrestors, batteries and chargers, and monitoring equipment.

Planned movable capitalized property estimates include replacements of special purpose trucks, replacement of generators to maintain the reliability and backup power to the communications system, and replacement of outdated test and recording equipment. Other estimates include the replacement of outdated test equipment, and test equipment to troubleshoot the new digital microwave radio system. Ongoing replacement is also planned for aging information technology support systems and routers. Other requests include funding for the continuation of the SCADA Upgrade program, as well as other minor enhancements that provide for the ease of maintenance, protection of equipment and materials, and environmental compliance.

Interest/Transfers

This activity funds interest payments to the U.S. Treasury. Estimates are based on Power Repayment Studies for the Projects funded in this account.

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Equipment, Contracts and Related Expenses $153,840,000	**$151,324,000**	**-$2,516,000**
Supplies, Materials & Services ($23,017,000) This activity funds the procurement of supplies, materials, and services necessary to respond to routine and emergency situations in the transmission system, and the continuation of reimbursements to the U.S. Army Corps of Engineers for operation and maintenance of the Fort Peck Power Plant.	*Supplies, Materials & Services ($17,279,000)* Requested funding supports ongoing activities.	*Supplies, Materials & Services (-$5,738,000)* The decrease is primarily due to the U.S. Army Corps of Engineers requesting less reimbursement for planned O&M activity on the Fort Peck Power Plant. This decrease is slightly offset by inflationary increases for supplies and materials.
Purchase Power Costs ($107,140,000) This activity funds the procurement of electrical power, transmission capacity and wheeling services on the open market.	*Purchase Power Costs ($113,082,000)* Requested funding supports ongoing activities.	*Purchase Power Costs (+$5,942,000)* Increases to the purchase power cost estimates are due to current requirements and consideration of anticipated future water conditions.
Capitalized Equipment ($13,963,000) This activity funds the procurement of capitalized equipment including circuit breakers, transformers, relays, switches, transmission line equipment, microwave, SCADA, and other communication and control equipment to assure reliable service to Western's customers.	*Capitalized Equipment ($13,963,000)* Requested funding supports ongoing activities.	*Capitalized Equipment ($-0-)* There is no planned change from Western's FY 2016 level for this activity.

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Interest/Transfers ($9,720,000) This activity funds interest payments to the U.S. Treasury. Estimates are based on Power Repayment Studies for the Projects funded in this account.	*Interest/Transfers ($7,000,000)* Requested funding supports ongoing activities.	*Interest/Transfers (-$2,720,000)* The decrease in interest/transfers is due to the ongoing annual principal payments made on capital repayments which decreases the interest payment.

Colorado River Basins Power Marketing Fund
Program Direction

Overview

Program Direction provides the Federal staffing resources and associated costs required to provide overall direction and execution of the Colorado River Basins Power Marketing Fund. Western trains its employees on a continuing basis in occupational safety and health regulations, policies and procedures, and conducts safety meetings at employee, supervisory and management levels to keep the safety culture strong. Accidents are reviewed to ensure lessons are learned and proper work protocol is in place.

Highlights of the FY 2017 Budget Request

The FY 2017 request provides for the continuation of Western's revolving fund activities related to Program Direction at the level necessary to meet mission requirements.

Colorado River Basins Power Marketing Fund
Program Direction
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Program Direction					
Salaries and Benefits	41,245	41,245	41,657	42,676	+1,019
Travel	3,037	3,037	3,036	2,923	-113
Support Services	6,104	6,104	6,576	6,336	-240
Other Related Expenses	10,715	10,715	10,538	10,271	-267
Total, Program Direction	**61,101**	**61,101**	**61,807**	**62,206**	**+399**
Federal FTEs	**299**	**299**	**301**	**302**	**+1**
Support Services					
Management Support					
Automated Data Processing	1,620	1,620	2,144	2,569	+425
Training and Education	782	782	427	381	-46
Reports and Analyses Management and General Administrative Support	3,702	3,702	4,005	3,386	-619
Total Management Support	**6,104**	**6,104**	**6,576**	**6,336**	**-240**
Total, Support Services	**6,104**	**6,104**	**6,576**	**6,336**	**-240**
Other Related Expenses					
Rent to GSA	885	885	836	636	-200
Communication, Utilities, Misc.	1,396	1,396	1,599	1,562	-37
Printing and Reproduction	39	39	12	12	0
Other Services	5,865	5,865	5,580	5,472	-108
Training	24	24	7	45	+38
Purchases from Gov. Accounts	223	223	111	235	+124
Operation and Maintenance of Equipment	259	259	218	213	-5
Supplies and Materials	993	993	1,011	991	-20
Equipment	504	504	597	584	-13
Working Capital Fund	527	527	567	521	-46
Total, Other Related Expenses	**10,715**	**10,715**	**10,538**	**10,271**	**-267**

Colorado River Basins Power Marketing Fund
Program Direction

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Program Direction $61,807,000	**$62,206,000**	**+$399,000**
Salaries and Benefits $41,657,000	**Salaries and Benefits $42,676,000**	**Salaries and Benefits +$1,019,000**
Salary and benefits supports a FY 2016 request level of 301 FTE. This includes General Schedule employees, as well as those salaries determined through negotiations. The transfer of 2 FTE from the CROM account is in support of the CRBPMF operation and maintenance activities and is within Western's FTE target. This activity provides for Federal employees who operate and maintain the Program's high-voltage integrated transmission system and associated facilities; plan, design, and supervise the replacement (capital investments) to the transmission facilities; and market the power and energy produced to repay annual expenses and capital investment.	Requested funding supports ongoing activities.	The increase in salaries and benefits supports the FTE charged to this account, including salaries determined by prevailing rates in the electric utility industry. One (+1) within target FTE is transferred from Western's CROM account to the CRBPMF in support of cyclical operation and maintenance activities for a total request level of 302 FTE.
Travel $3,3036,000	**Travel $2,923,000**	**Travel -$113,000**
This activity funds personnel travel and per diem expenses for essential mission-related activities, including the maintenance of transmission facilities. The request includes estimates for the rent/lease of GSA vehicles and other transportation. The reduction will be achieved by limiting travel associated with general agency operations, administrative training, and conferences.	Requested funding supports ongoing activities.	The slight decrease in travel is in support of OMB Memorandum M-12-12, Promoting Efficient Spending to Support Agency Operations, offset by inflationary increases.
Support Services $6,576,000	**Support Services $6,336,000**	**Support Services -$240,000**

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Support services funded in this category include automated data processing support, warehousing, computer-aided drafting/engineering, job related training and education, and general administrative support.	Requested funding supports ongoing activities.	The decrease is primarily driven by a decrease to administrative support and job related training to the activities of the revolving fund. Slightly offsetting this decrease is an increase to IT support for NERC Critical Infrastructure Standards.
Other Related Expenses $10,538,000	**Other Related Expenses $10,271,000**	**Other Related Services -$267,000**
Other related expenses include, but are not limited to, DOE's working capital fund distribution, space, utilities and miscellaneous charges, printing and reproduction, training tuition, maintenance of office equipment, supplies and materials, telecommunications, and office equipment to include computers.	Requested funding supports ongoing activities.	The decrease to this activity is primarily driven by a decrease in requirements for contractual services associated with architectural and engineering services.

Transmission Infrastructure Program

($K)			
FY 2015 Enacted	**FY 2015 Current**	**FY 2016 Enacted**	**FY 2017 Request**
0	0	0	0

Overview

Western established the Transmission Infrastructure Program (TIP) and Office to implement Title III, Section 301 of the Hoover Power Plant Act of 1984 as amended by the American Recovery and Reinvestment Act of 2009 (Recovery Act), which provided Western borrowing authority of up to $3.25 billion for the purposes of: (1) constructing, financing, facilitating, planning, operating, maintaining, or studying construction of new or upgraded electric power transmission lines and related facilities with at least one terminus within the area served by Western; and (2) delivering or facilitating the delivery of power generated by renewable energy resources constructed or reasonably expected to be constructed after the Recovery Act's date of enactment.

TIP is a self-sustaining program that relies on funding arrangements with project developers. Western collects funds from project developers to support development of eligible projects and to cover the overhead and administrative costs of the program. Reimbursable or Advance Funding Agreements with project developers are required prior to initiating efforts to evaluate the technical and financial merits of all potential projects to ensure the full cost of services delivered are paid by project beneficiaries. For projects that are approved for use of Western's borrowing authority, the authority to cover the full amount of the loan is apportioned at the outset and cash is borrowed periodically from the Department of Treasury (Treasury) as needed. The debt is repaid according to the financial agreement terms and conditions of each project.

TIP complements Western's primary mission of marketing and delivering Federal hydropower to customers across the West, and supports Western and DOE priorities to facilitate delivery of renewable energy resources to market. As mandated, the program is completely separate and distinct from Western's power marketing program.

TIP has two projects currently using the borrowing authority for a total of $116 million in loan authority obligated.

All administrative costs for TIP are offset by advanced financing and collections. Western is not requesting any new annual appropriated funds for TIP.

Highlights and Major Changes in the FY 2017 Budget Request

Western entered into an agreement with DOE's Loan Programs Office (LPO) to provide project financing services for TIP projects. Western anticipates use of new borrowing authority as the TIP-LPO collaboration moves into its third full fiscal year and new projects are approved.

In FY 2017, TIP anticipates receiving and reviewing six Project Proposals, evaluating four Business Plan Proposals, providing technical assistance for the development of two projects, and progressing two projects into the financing phase. Projects which progress into the financing phase are funded via Advanced Funding Agreements until loan underwriting is completed. TIP anticipates two to three new projects will apply and/or be approved for use of borrowing authority in FY 2017. The FY2017 TIP borrowing projections of $800M anticipates the current Southline project moving from technical assistance into construction and loan phase in 2017-2018 timeframe. Also included in the projected new borrowing is the CAISO-awarded Colorado River to Delaney (CRD) project, which has applied to TIP for development assistance in anticipation of a loan. Construction and project debt estimates are based on preliminary information provided by the Project Sponsors/Proponents.

Note: Values for TIP are based on early stages of project development, forecasts of current projects, estimates of future project development, and assumptions made on the outcome of the LPO/TIP collaboration. While based on knowledge and experience to date, these estimates are to be regarded as non-binding representations that are subject to change.

Transmission Infrastructure Program
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY 2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Mandatory, Direct Budget Authority					
New Borrowing Authority	-	-	1,050,000	800,000	-250,000
Use of Collections from Projects	-	-	8,000	4,261	-3,739
Collections from Projects	-	-	-8,000	-4,261	+3,739
Total Mandatory	**-**	**-**	**1,050,000**	**800,000**	**-250,000**
Repayment of Borrowing Authority	-	-	-101,000	-3,600	+97,400
Federal FTEs	**6**	**6**	**9**	**9**	**0**
Discretionary, Reimbursable Budget Authority					
Program Direction	15,629	15,629	8,199	7,261	-938
Advance Funding	-12,400	-12,400	-2,500	-3,500	-1,000
Offsetting Collections	-3,229	-3,229	-5,699	-3,761	+1,938
Total Discretionary	**-**	**-**	**-**	**-**	**-**
Total, Transmission Infrastructure Program	**-**	**-**	**-**		
Federal FTEs	**9**	**9**	**8**	**8**	**0**

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Direct Budget Authority $1,050,000,000	**$800,000,000**	**-$250,000,000**
New Borrowing Authority $1,050,000,000	**$800,000,000**	**-$250,000,000**
Estimated new projects approved for use of Western's borrowing authority.	Requested funding supports ongoing activities.	The decrease is due to matured estimates provided by Project Sponsors/Proponents.
Collections from Projects $8,000,000	**$4,261,000**	**$-3,739,000**
Collections in this category are from excess capacity offtake from borrowing authority funded projects.	Requested funding supports ongoing activities.	TIP estimates collecting $4,261 in excess capacity from the ED5 energized line in FY2017. These collections will all be obligated and used for costs associated with operating and maintaining those lines generating the capacity.
Repayment of Borrowing Authority (Prior Year) -$101,000,000	**-$3,600,000**	**+$97,400,000**
This activity represents repayments to Treasury from projects for principal and interest of loans outstanding.	Requested funding supports ongoing activities.	The increase represents the repayment of cash drawn for current projects (ED5 and TWE) according to the terms of each projects' lending agreement as they are anticipated to move into long term financing.

Transmission Infrastructure Program
Program Direction

Overview

Western's TIP Program Direction subprogram provides compensation and all related expenses for its workforce, including those employees that are directly assigned to the program as project management, technical experts, finance and administration; those that provide expertise in land acquisition, engineering and environmental compliance; those that provide legal counsel; and those that administratively support these functions.

All TIP program direction costs are fully offset by customers, either through advanced funding agreements or offsetting collections. Advanced funding is provided to TIP from project applicants who use TIP's expertise in the development of their project. The advanced funding agreements fund federal and/or contract staff working on the development of a specific project. Other sources of funds include the overhead rate applied to each active project; service charges; interest rate differentials; and the advance collection of Project Proposal and Business Plan Proposal evaluation expenses. These collections offset the costs of administering the TIP program and provide a risk mitigation reserve.

The Program Direction subprogram supports DOE and Western missions, specifically in facilitating delivery of renewable energy resources to market.

Highlights of the FY 2017 Budget Request

In FY 2017 the TIP office will continue to recover programmatic expenses, and maintain a risk mitigation reserve.

Program Direction
Funding ($K)

	FY 2015 Enacted	FY 2015 Current	FY2016 Enacted	FY 2017 Request	FY 2017 vs FY 2016
Program Direction Summary					
Transmission Infrastructure Program Office					
Salaries and Benefits	11,567	11,567	2,141	2,265	+124
Travel	280	280	108	140	+32
Support Services	2,393	2,393	824	1,995	+1,171
Other Related Expenses	1,389	1,389	5,126	2,861	-2,265
Subtotal, Program Direction	**15,629**	**15,629**	**8,199**	**7,261**	**-938**
Use of Offsetting Collections	-15,629	-15,629	-8,199	-7,261	+938
Total, Program Direction	0	0	0	0	0
Federal FTEs (Mandatory Direct)	8	8	9	9	0
Federal FTEs (Discretionary Reimbursable)	9	9	8	8	0

Support Services and Other Related Expenses

Technical Support					
Projects	2,232	2,232	746	1,532	+786
Total, Technical Support	2,232	2,232	746	1,532	+786
Management Support					
Financial Modeling	103	103	37	132	+95
Legal Policy and Review	58	58	41	331	+290
Total Management Support	161	161	78	463	+385
Total, Support Services	**2,393**	**2,393**	**824**	**1,995**	**+1,171**
Other Related Expenses					
Communications; utilities; miscellaneous charges	1,111	1,111	156	348	+192
Services from Non- Federal Sources	167	167	1,520	1,418	-102
Services from Loan Programs Office	83	83	3,445	1,090	-2,355
Supplies and materials	28	28	5	5	0
Total, Other Related Expenses	**1,389**	**1,389**	**5,126**	**2,861**	**-2,265**

Program Direction

Activities and Explanation of Changes

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Program Direction $8,199,000	**$7,261,000**	**-$938,000**
Salaries and Benefits $2,141,00	**$2,265,000**	**+$124,000**
Salary and benefits provide for Federal employees that are directly assigned to the TIP program as project management, technical experts, finance and administration; those that provide expertise in land acquisition, engineering and environmental compliance; those that provide legal counsel; and those that administratively support these functions. FTE assigned to this account charge TIP's mandatory as well as discretionary funding accounts.	Requested funding supports ongoing activities.	The increase of salaries and benefits is primarily due to the slight increase of direct and indirect support provided to this account to include the proportionate FTE. Also included is the increase to salaries and benefits for inflationary purposes.
Travel $108,000	**$140,000**	**+$32,000**
Planned essential travel supports TIP's mission related activities. TIP supports efficient spending initiatives and is reducing travel associated with general program operations, focusing on using alternative means to conduct meetings and training sessions.	Requested funding supports ongoing activities.	This is a small increase in travel. The sensitive nature of financial discussions with proponents and interested potential applicants does necessitate face-to-face meetings on a regular basis. Efforts to use video conferencing, web based meetings, and similar technologies in lieu of traveling are ongoing, where appropriate.

FY 2016 Enacted	FY 2017 Request	Explanation of Changes FY 2017 vs FY 2016
Support Services $824,000	**$1,995,000**	**+$1,171,000**
Support services funded in this category include technical support costs directly associated with TIP projects; to include Environmental, Lands, Engineering, and Project Management activities. Also within this category are costs to cover legal and financial support activities to include financial modeling, outside legal counsel for contract review, policy issues and legislative concerns.	Requested funding supports ongoing activities.	The increase in support services is due to the estimated need for technical support associated with project management and stage of development of projects, and based on revised estimates to work scope demands.
Other Related Expenses $5,126,000	**$2,861,000**	**-$2,265,000**
Other related expenses include communications, utilities, training, depreciation, Western overhead rates, supplies and materials. Services from LPO are also included in this category.	Requested funding supports ongoing activities.	The decrease is primarily attributed to LPO costs associated with processing loan applications and providing ongoing loan administration activities.

Western Area Power Administration
Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY2014 Annual Performance Report.

	FY 2015	FY 2016	FY 2017
Performance Goal (Measure)	**WAPA - System Reliability Performance – North American Electric Reliability Corporation (NERC) Rating** – Meet NERC Control Performance Standards (CPS) of CPS1>100 and CPS2>90. CPS1 measures a generating system's performance at matching supply to changing demand requirements and supporting desired system frequency in one minute increments. CPS2 measures a generating system's performance at limiting the magnitude of generation and demand imbalances in ten minute increments.		
Target	CPS1>100, CPS2>90	CPS1>100, CPS2>90	CPS1>100, CPS2>90
Result	Met – CPS1 = 162.18 CPS2 = 87.92[5]		
Endpoint Target	WAPA ensures the integrity of the Nation's integrated grid by operating in compliance with National Energy Reliability Standards		

	FY 2015	FY 2016	FY 2017
Performance Goal (Measure)	**WAPA – Repayment of the Federal Investment** – Ensure unpaid investment (UI) is equal to or less than the allowable unpaid investment (AUI) in accordance with DOE Order RA 6120.2.		
Target	<=$8,632 million dollars AUI	<=$8,025million dollars AUI	<=$7,996 million dollars AUI
Result	Not yet available		
Endpoint Target	Continue to meet repayment of Federal investment, thereby achieving and maintaining financial integrity.		

[5] CPS2 is currently waived to reflect participation in the Western Electricity Coordinating Council Reliability-based Control Trial.

Estimate of Gross Revenues [1]

	(Dollars in Thousands)		
	FY 2015 [2]	FY 2016	FY 2017
Boulder Canyon Project	62,166	92,279	92,608
Central Valley Project	240,683	396,835	410,833
Falcon-Amistad Project	6,650	6,841	6,840
Fryingpan-Arkansas Project	20,382	20,088	19,583
Pacific Northwest-Southwest Intertie Project	40,185	36,059	36,059
Parker-Davis Project	62,192	68,422	68,778
Pick-Sloan Missouri Basin Program	599,639	559,438	552,230
Provo River Project	231	316	316
Washoe Project	549	544	544
Salt Lake City Area Integrated Projects	216,179	174,707	174,707
Other	136,706	0	0
Total, Gross Revenues	**1,385,562**	**1,355,529**	**1,362,498**

[1] Amounts for FY 2016 and FY 2017 are based on the FY 2014 Final Power Repayment Studies (PRS).

[2] FY 2015 amounts are from Western's preliminary financial reports. The amounts do not include all anticipated generating agency Project revenue at this time. For Central Valley Project, amounts exclude contractual pass-through purchase power arrangements which are included in the PRS estimates. The 'Other' FY 2015 amounts shown represent Western activities that are not reimbursable through the power and transmission rate-setting process, and are not forecasted through the PRS.

Estimate of Proprietary Receipts

	(Dollars in Thousands)		
	FY 2015 Actual	FY 2016	FY 2017
Mandatory Receipts			
Falcon Amistad Maintenance Fund	267	228	232
Sale and Transmission of Electric Power, Falcon and Amistad Dams	1,900	862	862
Sale of Power and Other Utilities Not Otherwise Classified	93,145	30,000	30,000
Sale of Power–WAPA–Reclamation Fund	231,641	143,945	143,945
Total, Mandatory Receipts	**326,953**	**175,035**	**175,039**
Discretionary Receipts			
Offsetting Collections from the Recovery of Power Related Expenses – WAPA CROM	260,510	352,813	367,009
Less Purchase Power and Wheeling Expenses	-260,510	-352,813	-367,009
Subtotal, WAPA CROM Recovery of Power Related Expenses	0	0	0
Offsetting Collections from the Recovery of Annual Expenses – WAPA CROM	211,030	214,342	211,563
Less Operating and Maintenance expenses	-36,745	-36,645	-33,122
Less Program Direction Expenses	-174,285	-177,697	-178,441
Subtotal, WAPA CROM Recovery of Annual Expenses	0	0	0
Offsetting Collections from the recovery of power related expenses – Falcon and Amistad	4,499	4,262	3,838
Less Operating and Maintenance expenses	-4,499	-4,262	-3,838
Subtotal, Falcon and Amistad Recovery of Power Related Expenses	0	0	0
Total, Discretionary Receipts	**0**	**0**	**0**
Total, Proprietary Receipts	**326,953**	**175,035**	**175,039**

Department Of Energy

FY 2017 Congressional Budget

Funding By Appropriation By Site

($K)

Western Area Power Admin. Const.,Rehab.,O&M	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Western Area Power Administration			
Systems Operation and Maintenance			
Systems Operation and Maintenance	349,468	436,746	462,264
Program Direction			
Program Direction	222,605	231,125	220,154
Total, Western Area Power Administration	**572,073**	**667,871**	**682,418**
Total, Western Area Power Admin. Const.,Rehab.,O&M	**572,073**	**667,871**	**682,418**

Department Of Energy

FY 2017 Congressional Budget

Funding By Appropriation By Site

($K)

Falcon & Amistad - Operating & Maintenance Fund	**FY 2015 Current**	**FY 2016 Enacted**	**FY 2017 Request**
Western Area Power Administration			
Falcon & Amistad Operating and Maintenance Fund			
Falcon & Amistad - Operating and Maintenance	4,727	4,490	4,070
Total, Western Area Power Administration	**4,727**	**4,490**	**4,070**
Total, Falcon & Amistad - Operating & Maintenance Fund	**4,727**	**4,490**	**4,070**

Department Of Energy

FY 2017 Congressional Budget

Funding By Appropriation By Site

($K)

Colorado River Basins Power Marketing Fund	FY 2015 Current	FY 2016 Enacted	FY 2017 Request
Western Area Power Administration			
Equipment, Contracts and Other Related Expenses			
Colorado River Storage Project	167,108	153,840	151,324
Program Direction			
Program Direction	61,101	61,807	62,206
Total, Western Area Power Administration	**228,209**	**215,647**	**213,530**
Total, Colorado River Basins Power Marketing Fund	**228,209**	**215,647**	**213,530**

Bonneville Power Administration

Bonneville Power Administration

Bonneville Power Administration (Bonneville, BPA)
Proposed Appropriations Language

Expenditures from the Bonneville Power Administration Fund, established pursuant to Public Law 93-454, are approved for [the Shoshone Paiute Trout Hatchery, the Spokane Tribal Hatchery, the Snake River Sockeye Weirs and, in addition, for] official reception and representation expenses in an amount not to exceed $5,000: Provided, that during fiscal year [2016] *2017*, no new direct loan obligations may be made.

Explanation of Changes

The proposed appropriations language restricts new direct loans in FY 2017 as in FY 2016**.** This bill language is drafted consistent with the Credit Reform Act of 1990.

Please Note - The FY 2017 Bonneville Power Administration Congressional Budget submission includes FY 2016 budget estimates.

Bonneville operates under a business-type budget under the Government Corporation Control Act, 31 U.S.C 9101-10 and on the basis of the self-financing authority provided by the Federal Columbia River Transmission System Act of 1974 (Transmission Act) (Public Law 93-454). Bonneville has authority to borrow from the U.S. Treasury under the Transmission Act, the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Pacific Northwest Power Act) (Public Law 96-501) for acquisition of energy conservation and renewable energy resources, investment in fish facilities, and other purposes, the American Recovery and Reinvestment Act of 2009 (Public Law 111-5), and other legislation. Authority to borrow from the U.S. Treasury is available to Bonneville on a permanent, revolving basis. The amount of U.S. Treasury borrowing outstanding at any time cannot exceed $7.70 billion.[1] Bonneville finances its approximate $4.3 billion annual cost of operations and investments primarily using power and transmission revenues, and borrowing from the U.S. Treasury.

This budget has been prepared in accordance with the Statutory Pay-As-You-Go Act (PAYGO) of 2010. Under PAYGO, all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities which are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

[1] Amount of total bonds outstanding can be found in tables BP-4A – 4D in the Additional Tables section.

Bonneville Power Administration

Funding Profile by Subprogram [1/]

(Accrued Expenditures in Thousands of Dollars)

	Fiscal Year			
	2015 Actuals	2016 Original [/2]	2016 Revised [/2]	2017 Proposed
Capital Investment Obligations				
Associated Project Costs [3/]	43,201	N/A	240,790	269,908
Fish & Wildlife	21,373	N/A	40,000	45,602
Conservation & Energy Efficiency [3/]	87,225	N/A	0	0
Subtotal, Power Services	151,799	N/A	280,790	315,510
Transmission Services	461,279		700,040	644,478
Capital Equipment & Bond Premium	34,344	N/A	37,356	28,794
Total, Capital Obligations [3/]	647,423	1,051,569	1,018,186	988,782
Expensed and Other Obligations				
Expensed	2,747,786	3,040,716	3,016,942	3,049,010
Projects Funded in Advance	389,677	30,000	30,000	30,000
Total, Obligations	3,784,886	4,122,285	4,065,128	4,067,792
Capital Transfers (cash)	448,761	206,900	189,107	205,868
BPA Total	4,233,647	4,329,185	4,254,235	4,273,660
Bonneville Net Outlays	(383,275)		(635)	(45,734)
Full-time Equivalents (FTEs)	2,836	3,100	3,100	3,100

Public Law Authorizations include:

Bonneville Project Act of 1937, Public Law No. 75-329

Federal Columbia River Transmission System Act of 1974, Public Law No. 93-454

Regional Preference Act of 1964, Public Law No. 88-552

Flood Control Act of 1944, Public Law No. 78-543

Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act), Public Law No. 96-501

Outyear Funding Profile by Subprogram [1/]

(Accrued Expenditures in Thousands of Dollars)

	Fiscal Year			
	2018	2019	2020	2021
Capital Investment Obligations				
Associated Project Costs [3/]	281,511	313,754	333,297	347,926
Fish & Wildlife	18,646	34,806	35,033	33,599
Conservation & Energy Efficiency [3/]	0	0	0	0
Subtotal, Power Services	300,157	348,560	368,330	381,525
Transmission Services	445,475	445,032	417,097	306,225
Capital Equipment & Bond Premium	12,854	8,417	6,069	13,136
Total, Capital Obligations [3/]	758,486	802,009	791,497	700,886
Expensed and Other Obligations				
Expensed	3,248,601	3,387,808	3,415,055	3,306,906
Projects Funded in Advance	30,000	50,000	50,000	50,000
Total, Obligations	4,037,087	4,239,817	4,256,552	4,057,791
Capital Transfers (cash)	228,791	564,341	533,603	517,744
BPA Total	4,265,878	4,804,158	4,790,155	4,575,535
Bonneville Net Outlays	(76,734)	126,266	102,129	(138,420)
Full-time Equivalents (FTEs)	3,100	3,100	3,100	3,100

These notes are an integral part of this table.

1/ This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities which are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

2/ Original estimates reflect Bonneville's FY 2016 Congressional Budget Submission. Revised estimates, consistent with Bonneville's annual near-term funding review process, provide notification to the Administration and Congress of updated capital and expense funding levels for FY 2016.

3/ Includes infrastructure investments designed to address the long-term electric power related needs of the Northwest and to reflect significant changes affecting Bonneville's power and transmission markets.

Additional Notes

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Cumulative advance amortization payments as of the end of FY 2015 are $3,291 million.

Refer to 16 USC Chapters 12B, 12G, 12H, and Bonneville's other organic laws, including P.L. 100-371, Title III, Sec. 300, 102 Stat. 869, July 19, 1988, regarding Bonneville's ability to obligate funds.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Net Outlay estimates are based on current cost savings to date and anticipated cash management goals. They are expected to follow anticipated management decisions throughout the rate period that, along with actual market conditions, will impact revenues and expenses. Actual Net Outlays are volatile and are reported in Report on Budget Execution and Budgetary Resources (SF-133). Actual Net Outlays could differ from estimates due to changing market conditions, streamflow variability, and continuing restructuring of the electric industry.

Revenues, included in the Net Outlay formulation, are calculated consistent with cash management goals and assume a combination of adjustments. Assumed adjustments include the use of a combination of tools, including upcoming rate adjustment mechanisms, a net revenue risk adjustment, debt service refinancing strategies and/or short-term financial tools to manage net revenues and cash. Some of these potential tools will reduce costs rather than generate revenue, causing the same Net Outlay result. Adjustments for depreciation and 4(h)(10)(C) credits of the Northwest Power Act are also assumed.

FY 2015 Net Outlays are based on Bonneville's FY 2015 audited actuals. FYs 2016 & 2017 Net Outlays are calculated using Bonneville's revenue forecast from the BP-16 rate case. FYs 2018 & 2019 assume no growth in Offsetting Collections compared to FYs 2016 & 2017. FYs 2020 and 2021 assume a 1% growth in Offsetting Collections.

FTE outyear data are estimates and may change. Bonneville is facing a dynamic and changing transmission marketplace and operations while, at the same time, many of its employees are eligible to retire in the near future. It is important that Bonneville continue to attract and retain skilled individuals to meet the growing demands of a competitive and rapidly changing industry. Accordingly, FTE estimates may need to be adjusted in the future.

Major Outyear Considerations

Bonneville's outyear estimates reflect ongoing efforts to achieve its long-term mission and strategic direction. The outyear estimates are developed with consideration and support of Bonneville's multi-year performance targets that lay out the course for achieving Bonneville's long-term objectives. Outyear capital investment levels support Bonneville's infrastructure program, hydro efficiency program, and its fish and wildlife mitigation projects.

Bonneville continues to incorporate the various aspects of the Energy Policy Act of 2005 related to its business, in particular the energy supply, conservation, and new energy technologies for the future that are highlighted in the legislation.

Overview and Accomplishments

Bonneville provides electric power, transmission, and energy efficiency throughout the Pacific Northwest. Bonneville serves a 300,000 square mile area including Oregon, Washington, Idaho, western Montana, and parts of northern California, Nevada, Utah, and Wyoming with a population of about 12.9 million people. Bonneville markets the electric power produced from 31 federal hydro projects in the Pacific Northwest owned by the U.S. Army Corps of Engineers (Corps) and the U.S. Department of Interior, Bureau of Reclamation (Reclamation) – the hydro projects are known as Associated Projects. Bonneville also acquires non-federal power, including the power from the nuclear power plant, Columbia Generating Station (CGS), to meet the needs of its customer utilities. Bonneville maintains and operates 15,156 circuit miles of transmission lines, 259 substations, and associated power system control and communications facilities over which this electric power is delivered. Bonneville has capital and similar leases for certain transmission facilities. Bonneville also supports the protection and enhancement of fish and wildlife, and promotes conservation and energy efficiency, as part of its efforts to preserve and balance the economic and environmental benefits of the Federal Columbia River Power System (FCRPS).

The organization of Bonneville's FY 2017 Budget reflects Bonneville's business services basis for utility enterprise activities. Bonneville's two major areas of activity on a consolidated budget and accounting basis are Power Services (PS) and Transmission Services (TS) with administrative costs included. The PS includes line items for Fish and Wildlife, Energy Efficiency, Residential Exchange Program (REP), Associated Projects Operations & Maintenance (O&M) Costs, and Northwest Power and Conservation Council (Planning Council or Council).

The mission of Bonneville is to create and deliver the best value for its customers and constituents as it acts in concert with others to assure the Pacific Northwest: (1) an adequate, efficient, economical and reliable power supply; (2) an open access transmission system that is adequate for integrating and transmitting power from federal and non-federal generating units, providing service to Bonneville's customers, providing interregional interconnections, and maintaining electrical reliability and stability; and (3) mitigation of the FCRPS impacts on fish and wildlife. Bonneville is legally obligated to provide cost-based rates and public and regional preference in its marketing of power. Bonneville establishes rates as low as possible consistent with sound business principles and sufficient to ensure the full recovery of all of its costs, including timely repayment of the federal investment in the system. Bonneville's vision is to provide: (1) high reliability; (2) low rates consistent with sound business principles; (3) responsible environmental stewardship; and (4) accountability to the region. Bonneville pursues this vision consistent with its four core values of safety, trustworthy stewardship of the FCRPS, collaborative relationships, and operational excellence.

Alignment to Strategic Plan and President's Climate Action Plan

Bonneville contributes to the Administration's clean energy goals and aligns to Goal 1 of the Department of Energy's (DOE) Strategic Plan to *Advance foundational science, innovate energy technologies, and inform data driven policies that enhance U.S. economic growth and job creation, energy security, and environmental quality, with emphasis on implementation of the President's Climate Action Plan to mitigate the risks of and enhance resilience against climate change*.

The FCRPS is one of the nation's largest nearly carbon-free energy sources and preserving and enhancing the value of the FCRPS for the future continues to be a major Bonneville focus. Bonneville's ongoing prioritization and execution of capital investment in transmission and FCRPS generation assets is the foundation for delivering clean, low cost power to support the communities and economies of the region well into the future.

Bonneville plays a key role in advancing energy efficiency across the region consistent with its statutes, including developing and promoting related technologies, and exploring demand-side management opportunities. Bonneville is making disciplined technology innovation investments and looking to apply new operational and market mechanisms that enhance the reliability, efficiency and flexibility of system operations.

In addition to these efforts, Bonneville is committed to the quality of the Northwest's natural resources. Bonneville funds one of the largest fish and wildlife programs in the nation and continues to be a national leader on environmental protection and compliance.

Together, all of these efforts contribute to sustaining and advancing the region's resilience against climate change.

To validate and verify program performance, Bonneville conducts various internal and external reviews and audits. Bonneville conducts extensive reviews with regional stakeholders of both capital and expense programs. In addition, Bonneville's programmatic activities are subject to review by Congress, the U.S. Government Accountability Office (GAO), the DOE's Inspector General, and other governmental entities. Bonneville's financial statements are audited annually by an independent external auditor. Bonneville has received unqualified audit opinions since the mid-1980s and no material weaknesses have been identified in controls over financial reporting.

Legislative History

The Bonneville Project Act of 1937 provides the statutory foundation for Bonneville's utility responsibilities and authorities. In 1974, passage of the Federal Columbia River Transmission System Act (Transmission Act) applied provisions of the Government Corporation Control Act (31 U.S.C. §§ 9101-9110) to Bonneville. The Transmission Act provides Bonneville with "self-financing" authority, establishes the Bonneville Fund (a permanent, indefinite appropriation) allowing Bonneville to use its revenues from electric power and transmission ratepayers to fund all programs without further appropriation, and authorizes Bonneville to sell bonds to the U.S. Treasury to finance the region's high-voltage electric transmission system requirements.

In 1980, enactment of the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) expanded Bonneville's authorities, obligations and responsibilities to encourage: electric energy conservation to meet regional electric power loads placed on Bonneville; develop renewable energy resources within the Pacific Northwest; assure the Northwest an adequate, efficient, economical, and reliable power supply; promote regional participation and planning; and protect, mitigate and enhance the fish and wildlife of the Columbia River and its tributaries. The Northwest Power Act also established the statutory framework for Bonneville's administrative rate-setting process and established judicial review of Bonneville's final decisions in the U.S. Court of Appeals for the Ninth Circuit.

As of 2015, Congress has provided Bonneville with revolving U.S. Treasury borrowing authority of $7.7 billion.

The Columbia River Treaty

On December 13, 2013, the U.S. Entity, which includes Bonneville and the Corps, delivered the final regional recommendation concerning the post-2024 future of the Columbia River Treaty to the U.S. Department of State. The U.S. Government reached consensus on a high level position for negotiations of the Treaty in June 2015. The State Department selected a lead negotiator in August 2015. U.S. Government discussions of a path forward for formal negotiations are underway.

Judicial and Regulatory Activity

The Energy Policy Act of 2005 authorized the Federal Energy Regulatory Commission (FERC) to approve and enforce mandatory electric reliability standards with which users, owners, and operators of the bulk power system, including Bonneville, are required to comply. These standards became enforceable on June 18, 2007, and compliance is monitored by the North American Electric Regulatory Corporation (NERC) and the regional reliability organizations.

Fish and Wildlife Program Overview

Bonneville is committed to continue funding its share of the region's efforts to protect and mitigate Columbia River Basin fish and wildlife. To the extent possible, Bonneville is integrating actions to protect listed species in response to the FCRPS Biological Opinions (BiOps), including the National Oceanic and Atmospheric Administration (NOAA) Willamette River BiOp and the United States Fish and Wildlife Service's (USFWS) 2006 Libby Dam BiOp, with projects implemented under the Council's Fish and Wildlife Program (Program). The Program, BiOps, and long-term agreements include prioritized strategies for mitigation actions that help guide project selection to meet both Bonneville's Endangered Species Act (ESA) and Northwest Power Act responsibilities.

Included with the budget schedules section of this document is the current tabulation of Bonneville's fish and wildlife costs from FY 2006 through FY 2015.

Infrastructure Investments

Bonneville is moving forward with infrastructure investments in the Pacific Northwest to meet transmission and reliability needs and continues to support a competitive wholesale market in the Western Interconnection, which encompasses 14 western states, two Canadian provinces, and one Mexican state. The McNary-John Day line – completed in FY 2012, under budget and ahead of schedule – added 79 miles, and three additional transmission projects would add more than 140 miles of lines to the Northwest transmission grid, increasing service and improving reliability. In combination with other transmission projects, these projects would allow Bonneville to provide service to about 3,881 megawatts (MWs) of requests for Bonneville transmission, including 3,138 MWs of additional renewable resource generation. One transmission project is the proposed Bonneville's I-5 Corridor Reinforcement Project, which is currently undergoing environmental review. The Big Eddy-Knight 500kV transmission line and substation project resumed construction in 2014 and was energized in November 2015. In addition, Central Ferry-Lower Monumental 500kV Reinforcement began construction in May 2014 and was also energized in November 2015. If the I-5 Corridor Reinforcement Project is constructed, these three projects plus the McNary-John Day will provide almost 6,000 MW of transmission service. In addition, Bonneville is continuing to target additional transmission investments in those areas with reliability needs.

In FY 2012, Bonneville signed two agreements to participate with two investor-owned utilities in the environmental work and permitting for the proposed Boardman-to-Hemingway 500kV line. Participation in this preliminary review keeps Bonneville's options open for serving its six southeast Idaho preference customers after the current transmission service agreements terminate. Bonneville has not made a decision to co-develop or purchase capacity in these projects. On January 17, 2014, Public Law 113-76 was enacted into law, which provided Bonneville with expenditure authority approval to construct or participate in the construction of a transmission line to southeast Idaho, should Bonneville decide to continue pursuing that service arrangement.

Bonneville has experienced significant growth within its balancing area in installed variable renewable generation, primarily in the form of wind generation. Since 2001, installed wind generation has grown from 115 MWs to 5,081 MWs through December 2015. This substantial increase in variable renewable generation has resulted in additional uncertainties in the balance between load and generation required for maintaining a reliable grid. Wind is a non-dispatchable source of energy, meaning it cannot be relied upon for capacity. As a result, Bonneville has implemented and continues to study operational tools for integrating this variable generation more cost effectively and reliably.

Bonneville is considering approaches, in addition to the use of its U.S. Treasury borrowing authority, to sustain funding for its infrastructure investment requirements. These approaches include reserve financing of some amount of transmission investments, and seeking, when feasible, third party financing sources. See the BP-5 Potential Third Party Financing Transparency table (page 80) in the budget schedules section of this document. This FY 2017 Budget assumes $15 million of annual reserve financing in FYs 2016-2021 for transmission infrastructure capital, which is included in this budget under Projects Funded In Advance.

Radio Spectrum Communications

Bonneville's wireless communication system is used to operate and control critical national transmission grid infrastructure in a reliable, secure, and safe manner. Bonneville's communication systems are designed to meet strict reliability/availability objectives required by NERC and Western Electricity Coordinating Council (WECC) standards. Concerning proper spectrum stewardship, Bonneville designs highly efficient radio systems that use minimal radio frequency (RF) channel bandwidths to meet critical mission needs. However, in certain circumstances, efficiently designed spectrum radio systems will require broad RF channels and/or lower state RF modulation schemes to meet existing and future requirements in order to meet operational and reliability/availability objectives.

In order to meet Bonneville's mission/operational requirements, RF communication equipment approved for system use goes through a rigorous evaluation and testing process. RF spectrum efficiency factors are considered during the

evaluation/testing period. RF terminal equipment approved for use is normally purchased directly from vendors and is not typically supplied through a Request for Proposal process.

Bonneville's operational telecommunications and other capital equipment and systems are acquired using Bonneville's self-financing and procurement authorities. The Bonneville budget includes a system-wide electric reliability performance indicator, consistent with NERC rules, to track and evaluate performance.

Bonneville may share temporarily-available spare capacity on its RF communication system with other government agencies (both Federal and State), and with other electric utilities in the region whose power systems interconnect with Bonneville. Non-critical administrative traffic is typically supported by commercial carrier enterprises. However, to meet NERC/WECC electrical bulk transmission requirements, Bonneville exclusively operates highly critical transmission control traffic over its private telecommunication system as Bonneville has no control over the reliability/availability of the commercial enterprise or on how quickly critical operational control circuits are restored to active service during an interruption.

For high capacity communication system applications, Bonneville considers and operates non-spectrum dependent alternatives such as fiber optic cable infrastructure systems.

During FY 2014, Bonneville began upgrading the Very High Frequency (VHF) land mobile system and installing a number of digital Synchronous Optical Network (SONET) rings typically consisting of fiber segments in combination with point-to-point microwave hops operating in the 4 GHz and 7/8 GHz bands. These various telecommunication systems operate within Bonneville's approximate 300,000 square mile utility responsibility service territory (Oregon, Washington, Idaho, western Montana) with the majority of the RF infrastructure located in low population-rural areas.

The FCRPS hydroelectric projects, owned by the Corps and Reclamation, also utilize federal radio spectrum to preserve very high operational telecommunications and power system reliability.

In FY 2014, Bonneville completed work costing approximately $40,000, funded through the Spectrum Relocation Fund, to relocate its operational telecommunication systems from the 1710-55 MHz radio spectrum bands to alternative federal radio spectrum bands. In accordance with Federal law, Bonneville plans to return the approximately $8.2 million of excess funds to the U.S. Treasury, via the Spectrum Relocation Fund, as soon as the National Telecommunications and Information Administration (NTIA) officially notifies the Federal Communications Commission (FCC) that the DOE relocation effort is complete.

Bonneville is participating in a new spectrum relocation effort. The NTIA has approved and, in July 2014, web-posted federal agency relocation plans, including the Bonneville relocation plan. The FCC held an auction of this spectrum on November 13, 2014. Bonneville received an additional $5.2 million from the Spectrum Relocation Fund on July 29, 2015 to fully pay for this new relocation effort, including, as in the prior relocation, the purchase and installation of new digital radio equipment. Bonneville received obligational authority to proceed with this relocation effort by apportionment on July 24, 2015.

Financial Mechanisms

Bonneville's program is treated as mandatory and nondiscretionary. Bonneville is "self-financed" with its own revenues and does not rely on annual appropriations from Congress. Under the Transmission Act, Bonneville funds the expense portion of its budget and repays the federal investment with revenues from electric power and transmission sales. Bonneville's revenues fluctuate for a variety of reasons, including in response to variations in market prices for fuels and stream flow in the Columbia River System due to variations in weather conditions and fish mitigation needs. Through FY 2015, Bonneville has returned approximately $30.7 billion to the U.S. Treasury, of which about $3.5 billion was for payment of FCRPS operation and maintenance (O&M) and other costs, $15.1 billion for interest, and $12.1 billion for amortization of appropriations and bonds.

In the FY 2017 Budget, the term Bonneville "bonds" refers to the debt instruments under which Bonneville receives advances of funds from the U.S. Treasury. This reference is consistent with section 13(a) of the Transmission Act, which

defines Bonneville bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

As of September 30, 2015, debt instruments issued by non-federal entities but secured by payment and other financial commitments provided by Bonneville maintained their credit ratings as follows: Moody's at Aa1 with a stable outlook, Fitch at AA with a stable outlook and Standard & Poor's at AA- with a stable outlook.

Bonneville and the U.S. Treasury have a comprehensive banking arrangement that covers Bonneville's short- and long-term federal borrowings and establishes a phased-in approach to a market-based investing program. This provides Bonneville with the ability to borrow to finance assets and, on a short-term basis, to cover Northwest Power Act-related operating expenses. This latter ability provides Bonneville with much needed liquidity to help manage within-year cash flow needs and mitigate risk. Access to this use of U.S. Treasury borrowing authority has been incorporated into and relied upon in Bonneville's rate-setting process.

Bonneville undertook a Power Prepayment Program in FY 2013 under which all Bonneville preference customers had an opportunity to submit formal offers to provide lump-sum payments to Bonneville as prepayments of a portion of their power purchases through September 30, 2028, the termination date of the Long-Term Regional Dialogue Power Sales Contracts. Bonneville accepted power prepayments from four preference customers, as described below.

Upon Bonneville's receipt of the agreed-to, lump-sum prepayments, the selected preference customers became entitled to future portions of their electricity from Bonneville without further payment. The power prepayments are and will be recognized in the customers' future power bills from Bonneville as fixed, equal monthly prepayment credits. In effect, the amount of electricity that is prepaid may vary by month, depending on Bonneville's power rates and rate schedules that apply to electricity purchases by the prepaying customers in the related month. Because this is structured as a variable amount prepayment and not as a fixed-price/fixed-amount type of prepayment, Bonneville maintains flexibility to establish rates for the electric power that is prepaid.

As a result of the FY 2013 Prepayment solicitation, Bonneville received $340 million in prepayments, which Bonneville is using to fund needed FCRPS hydroelectric investments. The aggregate prepayment credits are set at $2.55 million per month through FY 2028.

Depending on a variety of factors it is possible that Bonneville may seek to implement later phases of the Power Prepayment Program in connection with future FCRPS hydroelectric investment needs.

Treasury Payments and Budget Overview

Bonneville made its full scheduled FY 2015 payment responsibility to the U.S. Treasury. Bonneville's aggregate U.S. Treasury payment was $891 million, comprised of $449 million in principal, which included $229 million in early retirement of higher interest rate U.S. Treasury debt, $350 million in interest, and $92 million for other costs. Total credits associated with fish mitigation and recovery and applied toward Bonneville's U.S. Treasury payment, were about $80 million for FY 2015. These credits are established and applied under section 4(h)(10)(C) of the Northwest Power Act. For FY 2016, Bonneville plans to pay the U.S. Treasury $640 million: $189 million to repay investment principal, $351 million for interest, and $100 million for Associated Project costs and pension and post-retirement benefits. The FYs 2017 and 2018 U.S. Treasury payments are currently estimated at $662 million and $707 million, respectively. The FY 2016-2017 4(h)(10)(C) credits are estimated at $91 million and $88 million, respectively.

Estimates of interest and amortization levels for outyear U.S. Treasury payments are included in the FY 2016-2017 final transmission and power rates. Bond and Appropriations Interest will continue to be revised based on upcoming capital investments and debt management actions. These estimates may change due to revised capital investment plans and actual U.S. Treasury borrowing. In recent years, Bonneville has made amortization payments in excess of those scheduled in its FERC-approved rate filings resulting in a balance of advance repayment. The cumulative amount of advance amortization payments as of the end of FY 2015 is about $3,291 million.

Bonneville has direct funding arrangements to fund the power-related portion of O&M and capital investments at the Corps and Reclamation facilities as well as the O&M costs of the U.S. Fish and Wildlife Service Lower Snake River Compensation Plan facilities. Direct funded capital costs, which were previously funded through appropriations to the Corps and Reclamation prior to the initiation of direct funding, are now paid primarily from the proceeds of bonds issued by Bonneville to the U.S. Treasury. Certain power prepayments have also been a source of proceeds for direct funding. Bonneville's aggregate direct funding provided for capital and O&M was $559 million in FY 2015.

Starting in FY 2014, Bonneville and Energy Northwest, the not-for-profit Washington state joint operating agency that owns and operates the Columbia Generating Station nuclear plant, worked closely to establish a new phase of integrated debt management for their combined total debt portfolios, the debt service of which is borne by Bonneville and recovered from Bonneville ratepayers through Bonneville's rates. Energy Northwest-related debt refinanced under this effort for both fiscal years 2014 and 2015 is called Regional Cooperation Debt.

An important component of Regional Cooperation Debt is the issuance of new bonds by Energy Northwest to refund outstanding bonds shortly before their maturities when substantial principal repayments are due. Funds made available from these refinancings enable Bonneville to prepay higher interest rate federal obligations. The net effect of Regional Cooperation Debt and prepayment of higher interest rate federal obligations is that both the weighted-average interest rate and the maturity of Bonneville's overall debt portfolio will be reduced over the life of the proposal. The refinancings also preserve and restore U.S. Treasury borrowing capacity, enabling Bonneville to make much-needed investments in critical infrastructure.

Energy Northwest accelerated site restoration of the Energy Northwest Nuclear Projects 1 and 4 beginning in the summer of 2015.

This FY 2017 Budget proposes estimated accrued expenditures of $3,049 million for operating expenses, $30 million for Projects Funded in Advance (PFIA), $989 million for capital investments, and $206 million for capital transfers in FY 2017.

The estimated spending levels in this budget are still subject to change to accommodate competitive dynamics in the region's energy markets, debt management strategies, and the continued restructuring of the electric industry.

Current Financial Status

Bonneville is striving to enhance its competitive, cost-effective delivery of utility products and services and continued delivery of the public benefits of its operations, while ensuring its ability to make its scheduled payments to the U.S. Treasury on time and in full. Bonneville employs a strategic planning process using the balanced scorecard model to align all business units around specific goals and align resources to achieve these goals. Results from these efforts include continued efficiency gains, performance integration improvements, and a high assurance for repayment of bonds issued to the U.S. Treasury and the appropriated investment in the FCRPS.

Through cost-based rates and attentive cost management efforts once rates are set, Bonneville has maintained adequate financial reserve levels to assure full recovery of its costs and long-term financial stability while meeting its overall responsibilities to the Pacific Northwest and U.S. taxpayers.

The Final Record of Decision for the FYs 2016-2017 rate case was issued on July 23, 2015 and FERC granted interim approval on September 17, 2015. The new rates went into effect on a provisional basis on October 1, 2015 pending final FERC review.

Budget Estimates and Planning

This FY 2017 Budget includes capital and expense estimates based on Bonneville's Capital Investment Review (CIR), Integrated Program Review (IPR), and Integrated Program Review 2 (IPR2) processes and updated estimates for FYs 2016 and 2017 Transmission capital. FY 2015 actual costs are based on Bonneville's FY 2015 audited financial statements.

Capital funding levels reflect Bonneville's capital asset management process and external factors such as the significant changes affecting the West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region and national energy security goals.

Capital investment levels in this FY 2017 Budget reflect executive management decisions from Bonneville's Finance Committee and the associated capital review process. Bonneville utilizes a structured capital project selection process requiring submission of a standardized business case for review. Each business case consists of a description of the project, a clear statement of objectives, description and mitigation of risks, and a rigorous analysis of project costs and benefits including a status quo assumption and preferred alternatives. In addition, both annual and end-of-project targets are set for each project covering cost, scope, and schedule. Progress reports on these targets are provided to Bonneville's senior executives at least quarterly.

The FYs 2016-2021 revenue estimates in this budget, included in the Net Outlay formulation, are calculated consistent with cash management goals. The revenue estimates reflect assumed adjustments, which include the use of a combination of tools, including: upcoming rate adjustment mechanisms; reduced cost estimates; a net revenue risk adjustment; debt management strategies; and/or short-term financial tools to manage net revenues and cash. The revenue estimates also include depreciation and U.S. Treasury repayment credit assumptions. These U.S. Treasury repayment credits offset, among other things, Bonneville's fish and wildlife program costs allocable to the non-power project purposes of the FCRPS under section 4h(10(C) of the Northwest Power Act.

Overview of Detailed Justifications

In Bonneville's Detailed Justification Summaries, accrued expenditure is the basis of presenting Bonneville's program funding levels in the power and transmission rate making processes and the basis upon which Bonneville managers control their resources to provide products and services. Accrued expenditures relate period costs to period performance. Traditional budget obligation requirements for Bonneville's budget are assumed on the Program and Financing Summary Schedule prepared in accordance with Office of Management & Budget (OMB) Circular A-11.

The organization of Bonneville's FY 2017 Budget and these performance summaries reflect Bonneville's business services basis for utility enterprise activities. Bonneville's major areas of activity on a consolidated budget and accounting basis include power and transmission, with administrative costs included. Power Services includes line items for Fish and Wildlife, Energy Efficiency, Residential Exchange Program, Associated Projects O&M Costs, and the Council. Environmental activities are shown in the relevant Power Services and Transmission Services sections, as are reimbursable costs. Bonneville's interest expense, pension and post-retirement benefits, and capital transfers to the Treasury are shown by program.

The first section of performance summaries, Capital Investments, includes accrued expenditures for investments in electric utility and general plant associated with the FCRPS generation and transmission services, energy efficiency, fish and wildlife, and capital equipment. These capital investments are estimated to require budget obligations and expected use of $988.8 million in bonds to be issued and sold to the U.S. Treasury in FY 2017.

The near-term forecast of capital funding levels has undergone an extensive internal review as a result of Bonneville's capital asset management strategy. These capital reviews encompass project cost management initiatives, capital investment assessments, and categorization of capital projects to be funded based on risk and other factors. Consistent with Bonneville's near-term capital funding review process and Bonneville's standard operating budget process, this FY 2017 Budget includes updated capital funding levels for FY 2016. Utilizing this review process helps Bonneville in its efforts to compete in the deregulated wholesale energy market. Bonneville will continue to work with the Corps and Reclamation to optimize the mix of projects.

In addition to its internal management assessment of capital investments, Bonneville has developed and implemented an associated external capital investment review process that provides significant benefits to Bonneville. The combined internal and external processes add value by both improving direction on what the FCRPS invests in (tying investments more closely to agency strategy) and by improving how those investments are made (more detailed analysis and review of capital investments and their alternatives).

Bonneville's second section of the performance summaries, entitled Annual Operating Expenses, includes accrued expenditures for services and program activities financed by power sales revenues, transmission sales revenues, and projects funded in advance. For FY 2017, budget expense obligations are estimated at $3,049 million. The total program requirements of all Bonneville programs include estimated budget obligations of $4,068 million in FY 2017.

Evidence and Analysis in the Budget

Consistent with the President's emphasis on evidence and evaluation in the budget, Bonneville has undertaken several initiatives and processes to determine appropriate budget expenditures.

Bonneville's Integrated Program Review (IPR) process allows interested parties to see all relevant FCRPS expense and capital spending level estimates in the same forum. The IPR occurs every two years, or just prior to each rate case, and provides participants with an opportunity to review and comment on Bonneville's program level estimates prior to spending levels being set for inclusion in rate cases. In addition, Bonneville's Capital Investment Review (CIR) process allows interested parties to review and comment on Bonneville's draft Asset Strategies and 10-year capital forecasts. The CIR occurs every two years prior to the IPR. The 2014 IPR and CIR processes concluded in 2014. Bonneville's IPR2 process, a follow-up to the 2014 IPR process, concluded in May 2015. The 2016 IPR and CIR processes will be combined and is expected to begin in June 2016.

Bonneville also is focused on institutionalizing operational excellence – continuous improvement that produces more efficient and effective ways to deliver on Bonneville's mission and vision. Bonneville's Strategy Execution organization provides programs and process support to improve business operations, and the quality of outputs, while applying the tools and principles of operational excellence in alignment with the vision of Bonneville's strategic direction. In FY 2012, Bonneville embarked on an extensive assessment of utility benchmarking and elected to adopt a benchmarking program to support meaningful evidence of efficiency and cost-effectiveness. In FY 2013, the Bonneville Benchmarking & Operational Excellence Program comprehensively benchmarked four specific strategic focus areas around Safety, Supply Chain, Reliability Compliance, and Energy Accounting and Determination of Loads. As a result of those efforts, in FY 2014 Bonneville took the data collected and implemented process improvement actions to move its business units towards becoming top quartile performers. In FY 2015, Bonneville refocused its continuous improvement efforts to concentrate on seven Key Strategic Initiatives. One of these initiatives resulted in a major program overhaul to our Safety and Health program. This effort encompassed changes to safety governance, improved safety culture, organization design modifications, process improvement projects to close gaps, and improvements in policy, human performance and job specific training.

Educational Activities

The Bonneville Power Administration is a supporter of science, technology, engineering and math (collectively known as "STEM") education programs. These programs provide support and encouragement to middle and high school students to study the sciences in school and to pursue careers in these fields. Working with Bonneville employees as volunteer ambassadors, the Bonneville education program provides value-added presentations, curricula and activities to K-12 schools that enhance the learning experience for students and teachers, and extend awareness of the value of the region's hydroelectric system to future generations. As a regional leader in STEM education, Bonneville also proudly supports and organizes an award-winning Science Bowl. Bonneville also sponsors Science Fair competitions for students in Washington state, as well as a Lego Robotics tournament championship.

Power Services - Capital
Funding Schedule by Activity

Funding ($K)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate	FY 2017 vs FY 2016	
				$	%
Power Services – Capital					
Associated Project Costs	43,201	240,790	269,908	29,118	12%
Fish & Wildlife	21,373	40,000	45,602	5,602	14%
Energy Efficiency	87,225	0	0	0	0
Projects Funded in Advance[1]	123,694	0	0	0	0
Total, Power Services – Capital	**275,493**	**280,790**	**315,510**	**34,720**	**12%**

Outyears ($K)

	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Power Services – Capital					
Associated Project Costs	269,908	281,511	313,754	333,297	347,926
Fish & Wildlife	45,602	18,646	34,806	35,033	33,599
Energy Efficiency	0	0	0	0	0
Projects Funded in Advance	0	0	0	0	0
Total, Power Services - Capital	**315,510**	**300,157**	**348,560**	**368,330**	**381,525**

[1] Amount is attributable to Bonneville's Power Prepayment Program.

Program Overview

Associated Project Costs provide for direct funding of additions, improvements, and replacements of existing Reclamation and Corps hydroelectric projects in the Pacific Northwest. The FCRPS hydro projects produce electric power that is marketed by Bonneville.

Maintaining the availability and increasing the efficiency of the FCRPS is critical to ensuring that the region has an adequate, efficient, economic, and reliable power system. The FCRPS represents about 80 percent of Bonneville's firm power supply and includes 31 operating federal hydroelectric projects with over 200 generating units. These projects have an average age of about 50 years, with some that exceed 60 years of age. Through direct funding and the cooperation of the Corps and Reclamation, Bonneville uses its U.S. Treasury borrowing authority and customer prepayment program to make investments needed to restore generation availability and improve efficiency, reducing demand on Corps and Reclamation appropriations for power-related investments.

Since the beginning of direct funding in FY 1997, Bonneville, along with its joint operating partners, the Corps and Reclamation, has improved system performance. In 1999, at the direction of Congress, Bonneville issued a report that it soon began to implement called the "Asset Management Strategy for the FCRPS." In this report, Bonneville concluded that it needed to invest nearly $1 billion, in aggregate, in the hydroelectric projects over the ensuing 12 to 15 years. Supplementary analyses and experience with the system have revealed additional and ongoing investment needs above and beyond the levels originally planned under the 1999 Asset Management Strategy. In 2008, 2010, 2012, and 2014, Bonneville updated its asset strategy and refined its understanding of the long-term capital investments needed to preserve system performance.

These planned investments, included in the FY 2017 Budget estimates, will maintain the generation performance of the FCRPS. Moving forward with the cost-effective opportunities to expand the generation and to preserve and enhance the capability of the FCRPS is a smart, economic, and environmentally beneficial decision when compared to purchasing power from the market to serve growing Pacific Northwest electricity needs.

Fish and wildlife capital costs incurred by Bonneville are directed at activities that improve Columbia River Basin fish and wildlife resources. It includes projects designed to increase juvenile and adult fish passage through the Columbia River system, to increase fish production and survival through construction of hatchery, acclimation and fish monitoring facilities, and to increase wildlife and resident fish populations through land acquisitions. These capital projects support both Northwest Power Act and ESA priorities and are integrated with the Program in order to efficiently meet Bonneville's legal responsibilities to mitigate hydrosystem impacts to Columbia River Basin fish and wildlife.

Bonneville implements projects consistent with the Program and the purposes of the Northwest Power Act. Most projects recommended by the Council undergo independent scientific review as directed by the 1996 Energy and Water Appropriations Act, which added section 4(h)(10)(D) to the Northwest Power Act. As a result, the Council appoints an Independent Scientific Review Panel (ISRP) "to review a sufficient number of projects" proposed to be funded through Bonneville's annual fish and wildlife budget "to adequately ensure that the list of prioritized projects recommended is consistent with the Program." The Northwest Power Act further states that "in making its recommendations to Bonneville, the Planning Council shall consider the impact of ocean conditions on fish and wildlife populations; and shall determine whether the projects employ cost effective measures to achieve program objectives." Today, most mitigation projects funded by Bonneville receive ISRP review as part of the Council recommendation process. The Council uses a multi-year project review cycle during which the ISRP will review categories of projects grouped together.

Under the Northwest Power Act, the Council must develop a Fish and Wildlife Program that protects, mitigates, and enhances Columbia River Basin fish and wildlife affected by the federal and non-federal hydroelectric projects in the basin. The Program, FCRPS BiOps, and Bonneville's long-term agreements include prioritized strategies for mitigation actions and projects to meet Bonneville's responsibilities under the Northwest Power Act, the ESA, the Federal Clean Water Act, and other laws. When issues arise that potentially trigger the *in lieu* provision of the Northwest Power Act, which prohibits Bonneville from funding mitigation that other entities are authorized or required to undertake, Bonneville works with the

Council and the regional fish and wildlife managers, customers, and tribes, as appropriate, to ensure ratepayers fund only appropriate mitigation.

As required under the ESA, Bonneville implements additional measures to avoid jeopardizing listed species. ESA measures are part of the most recent BiOp issued by NOAA in 2008, as supplemented in 2010 and 2014, and USFWS BiOp in 2006/2010.

- In February 2006, USFWS issued a BiOp for Libby Dam for the Kootenai River white sturgeon and bull trout. A subsequent Settlement Agreement between USFWS and the Center for Biological Diversity was memorialized by modifying the BiOp in 2008. Additional consultation is occurring as part of the larger USFWS bull trout consultation.
- In 2010 USFWS designated critical habitat for bull trout (following USFWS's issuance in 2000 of a BiOp for FCRPS impacts on bull trout). The Action Agencies (Corps, Reclamation, and Bonneville) are preparing a biological assessment covering FCRPS operational effects on bull trout and designated bull trout critical habitat.
- In May 2008, NOAA issued a FCRPS BiOp for 13 listed species of salmon and steelhead, supplemented in a 2010 Supplemental BiOp that incorporated the Action Agency's Adaptive Management Implementation Plan, and further supplemented in a 2014 Supplemental BiOp. On January 17, 2014, NOAA released its 2014 Supplemental BiOp. The 2008/2010/2014 BiOp is now under legal review.
- In July 2008, USFWS and NOAA issued Willamette River BiOps to address impacts from 13 federal dams on salmon, steelhead, Oregon chub, and bull trout. Implementation of a BiOp measure related to hatchery fish in the McKenzie River was the subject of litigation in Federal District Court. The Action Agencies are currently engaged in discussion with NOAA related to BiOp implementation for downstream passage and for hatchery consultations.

Under these collective BiOps, the Action Agencies have committed to implement hydro, habitat, hatchery, and other actions throughout the Columbia River Basin to address impacts stemming from the operation of the federal hydro-electric dams on ESA-listed fish, and to ensure that operations of the federal dams do not jeopardize the continued existence of the listed species or adversely modify their designated critical habitat.

The Action Agencies also signed the 2008 Columbia Basin Fish Accords (Fish Accords or Accords) with five Northwest Tribes, and the states of Idaho and Montana. In 2009, an agreement was signed with the state of Washington and federal agencies (the state of Washington Estuary agreement). And in 2012, the Action Agencies signed an agreement with the Kalispel Tribe of Indians covering Albeni Falls Dam and FCRPS operations. Wildlife settlement agreements have been signed with the states of Oregon and Idaho to help extinguish the required mitigation for the flooding and inundation caused by FCRPS dams operating in those states. These Fish Accords and settlements complement the BiOps and provide firm commitments to prioritize mitigation actions and secure funding over the life of the agreements.

As noted above, BiOps, Fish Accord and wildlife settlement commitments are integrated along with other projects and implemented through the Program under the Northwest Power Act. They provide the basis for the Bonneville Fish and Wildlife Program's planned capital investment.

Energy Efficiency is an important part of Bonneville's diverse portfolio of resources that provides a reliable approach to meeting Bonneville's load obligations. When acquiring resources to meet planned future loads, the Northwest Power Act requires the Administrator to first consider and acquire all cost-effective conservation that the Administrator determines is consistent with the Council's Power Plan. The Council's 6th Power Plan, finalized in February 2010, established a regional target of 1,200 annual average megawatts (aMW) of energy efficiency in 2010 through 2014. Bonneville, in collaboration with its public power customers, took responsibility for public power's share of the regional target, approximately 42 percent (504 aMW). Bonneville exceeded the target of 504 aMW by approximately 109 aMW, at the end of FY 2014. Since the 7th Power Plan is not expected to be issued until early in 2016, in the interim, Bonneville's planning is focused on consistency with the 6th Power Plan's later years. Bonneville has adopted an interim goal of 400 aMW of energy efficiency in FY 2015 through FY 2017. In FY 2015, Bonneville anticipates that between 45 and 50 aMW of this amount will be acquired under its capital energy efficiency program. Beginning in FY 2012, at least 70 percent of this energy efficiency budget was allocated to utilities to fund energy efficiency incentives with the remainder going to support regional programs. Program performance measurements ($/aMW) indicate that Bonneville is realizing value for these investments relative to other

resources. As of FY 2016, new expenditures in this program are being expensed and are included in the Power Services – Operating Expense category discussed further below.

In general, long-term investments in energy efficiency help buffer the FCRPS against future resource uncertainties. During periods of price volatility, energy efficiency reduces financial risk associated with relying on the market for energy purchases.

Accomplishments

- Issued final Record of Decision for the FYs 2016-2017 rate case on July 23, 2015.
- Facilitated integration of 5,081 MW of wind generation through December 2015.
- Completed 500 kV switchyard relay replacements at Grand Coulee.
- Completed fire detection and alarm system at Palisades.
- Completed governor replacements and vibration and air gap monitoring installation at Bonneville Dam.
- Completed powerhouse roof replacement at Libby.
- Completed spillway crane modernization, spillway gate modification, and intake crane modernization at Albeni Falls.
- The returns of adult salmon and steelhead to the Columbia River system from 2009 to 2014 vary by species, but many stocks (especially Snake River fall Chinook and Snake River sockeye) have returned at the highest numbers in decades. Research shows that survival of juvenile salmon and steelhead migrating down the Snake and Columbia rivers has improved in recent years and is on track to meet performance standards of 96 percent survival per dam for spring-migrating fish and 93 percent survival for summer migrants.

Explanation of Changes

Bonneville's budget includes $315.5 million in FY 2017 for Power Services capital, which is a 12.4 percent increase over the FY 2016 forecasted level. The FY 2017 level reflects a continuing need for investment in the hydro electric system assets, and funding necessary to implement the BiOps, Fish Accords, and Columbia Basin Fish and Wildlife activities.

The FY 2017 budget increases the levels for Associated Projects (+$29.1 million) and Fish & Wildlife (+$5.6 million), relative to FY 2016. Energy Efficiency will be funded out of expense beginning in FY 2016.

Strategic Management

Bonneville provides electric power while supporting the achievement of its vital responsibilities for fish and wildlife, energy efficiency, renewable resources, and low-cost power in the Pacific Northwest region. Bonneville will continue to implement the following strategies to serve the region:

1. Bonneville coordinates its power operational activities with the Corps, Reclamation, NERC, regional electric reliability councils, its customers, and other stakeholders to provide the most efficient use of federal assets.
2. Ongoing work with the Corps and Reclamation is focused on improving the reliability of the FCRPS, increasing its generation efficiency, and optimizing hydro facility operation.
3. Bonneville is committed to continue funding efforts to protect listed fish and wildlife species in the Columbia Basin under the ESA and to work closely with the Council, regional fisheries managers, and other federal agencies to prioritize and manage projects to address Fish and Wildlife Program priorities.
4. Bonneville's utility customers have been, and continue to be, a critical part of Bonneville's collaborative efforts to promote and foster the efficient use of energy.
5. Bonneville has partnered and assisted with a DOE Wind Power crosscutting initiative to strengthen energy security by adding alternative sources of renewable energy.

The following external factors present the most significant risk and impact to overall achievement of the program's strategic goals:

1. Continually changing regional economic and institutional conditions;
2. Competitive dynamics; and
3. Ongoing changes in the electric industry.

Associated Projects

Overview

Bonneville will work with both the Corps and Reclamation to reach mutual agreement on budgeting and scheduling those capital improvement projects that are cost-effective and provide system or site-specific enhancements, increase system reliability, or provide generation efficiencies.

The work is focused on improving the reliability of the FCRPS and on increasing its generation efficiency or capacity through turbine runner replacements, optimizing hydro facility operation, and new unit construction. Also, limited investments may be made in joint-use facilities that are beneficial to both the FCRPS operations and to other Corps and Reclamation project purposes.

Corps of Engineers Projects
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
33,712	154,324	160,429

Bonneville Dam:

- **FY 2015.** Completed governor replacements and vibration and air gap monitoring installation. Continued main unit breaker and station service reconfiguration, governor oil filtration system installation, generator step-up (GSU) transformer instrumentation, Powerhouse 2 transformer refurbishment, and control room fire protection upgrades.
- **FY 2016.** Complete governor oil filtration system installation. Continue control room fire protection upgrades, Powerhouse 2 transformer refurbishment, GSU transformer instrumentation, and main unit breaker and station service reconfiguration. Begin Powerhouse 1 DC and preferred AC upgrades.
- **FY 2017**. Continue main unit breaker and station service reconfiguration, Powerhouse 2 transformer refurbishment, GSU transformer instrumentation, and Powerhouse 1 DC and preferred AC upgrades. Begin Powerhouse 2 tailrace gantry crane rehabilitation and fire protection projects for the control room and both oil storage rooms, and purchase draft tube stop logs for the Powerhouse 2.

John Day Dam:

- **FY 2015.** Continued governor replacements, DC system upgrades, Baldwin-Lima Hamilton (BLH) turbine hub upgrades, draft tube bulkhead refurbishment, station service transformer replacements, and control room fire protection upgrades. Began transformer and powerhouse oil/water separator and rotor pedestal installation.
- **FY 2016**. Complete governor replacements and DC system upgrades. Continue BLH turbine hub upgrades, control room fire protection upgrades, transformer and powerhouse oil/water separator, rotor pedestal installation, and station service transformer replacements. Begin 500kV disconnect replacement.
- **FY 2017**. Complete draft tube bulkhead refurbishment and rotor pedestal installation. Continue BLH turbine hub upgrades, control room fire protection upgrades, 500kV disconnect replacement, and station service transformer replacement. Begin SQ board (switchgear) replacement and powerhouse oil detection system installation.

The Dalles Dam:

- **FY 2015.** Completed control room fire protection upgrades, Station Control Console (SCC) replacement, and elevator refurbishments. Continued tailrace gantry crane refurbishment and transformer replacements.
- **FY 2016**. Complete tailrace gantry crane refurbishment. Continue transformer replacements and elevator refurbishments. Begin emergency crane rehabilitation, arc flash hazard reduction project, and SR panel (switchgear) replacement.
- **FY 2017**. Complete elevator refurbishments. Continue transformer replacements, SR panel replacement, arc flash hazard reduction project, and emergency crane rehabilitation. Begin fish unit breaker replacement and thrust bearing oil coolers installation.

Willamette Plants:

- **FY 2015.** Completed spillway tainter gate repair at Dexter and butterfly valve replacement at Lost Creek. Completed turbine runner replacements at Hills Creek and governor replacement at Green Peter and Foster. Continued governor replacements at Big Cliff, Cougar, Dexter, Detroit, and Lookout Point. Continued electrical reliability upgrades at Dexter and Foster. Continued spillway tainter gate rehabilitation at Green Peter. Continued Generic Data Acquisition and Control System (GDACS) installation and communication system upgrade at all Willamette Valley plants. Began main unit breaker replacement at Green Peter and bridge crane rehabilitation at Foster and Green Peter. Began Hills Creek and Detroit spillway tainter gate rehabilitation.
- **FY 2016**. Complete governor replacements at Big Cliff, Cougar, Dexter, Detroit, and Lookout Point. Complete spillway tainter gate rehabilitation at Lookout Point, Green Peter, and Hills Creek. Complete electrical reliability upgrades at Dexter. Continue Detroit spillway tainter gate rehabilitation and electrical reliability upgrades at Foster, as well as bridge crane rehabilitation at Foster and Green Peter. Continue GDACS installation and communication system upgrade at all Willamette Valley plants. Begin electrical reliability upgrades at Lookout Point and spillway gate rehabilitation at Hills Creek and Cougar.
- **FY 2017**. Complete Foster bridge crane rehabilitation. Continue Detroit spillway gate rehabilitation and electric reliability upgrades at Foster and Lookout Point. Continue GDACS installation and communication system upgrade at all Willamette Valley plants. Continue main unit breaker and electrical reliability upgrades and powerhouse bridge crane refurbishment at Green Peter. Begin powerhouse roof replacement at Cougar and turbine platform installations at all Willamette Valley plants.

Albeni Falls Dam:

- **FY 2015.** Completed spillway crane modernization, spillway gate modification, and intake crane modernization. Began transformer replacement and station service switchgear replacement.
- **FY 2016**. Continue transformer replacement and station service switchgear replacement. Begin generator fire suppression system upgrade.
- **FY 2017**. Complete station service switchgear replacement. Continue transformer replacement.

Libby Dam:

- **FY 2015.** Completed powerhouse roof replacement. Continued governor installation and powerhouse and dam electrical distribution equipment replacement. Began powerhouse DC emergency lighting system installation and control console replacement.
- **FY 2016**. Complete powerhouse and dam electrical distribution equipment replacement. Complete powerhouse DC emergency lighting system installation and control console replacement. Continue governor installation.
- **FY 2017**. Complete governor installation.

Chief Joseph Dam:

- **FY 2015**. Completed exciter replacement. Continued governor installation, generator cooling system upgrades, DC and preferred AC upgrades, Station Control Console (SCC) board replacement, and turbine replacements. Began upgrades for station service units.
- **FY 2016.** Complete SCC board replacement. Continue governor installation, generator cooling system upgrades, DC and preferred AC upgrades, upgrades for station service units SS01 and SS02, and turbine replacements. Begin Units 17-27 generator rewinds.
- **FY 2017**. Complete turbine replacements. Continue DC and preferred AC upgrade, generator cooling system upgrades, Units 17-27 generator rewinds.

Dworshak Dam

- **FY 2015**. Continued governor replacement and Unit 3 rehabilitation. Began Regulating Outlet (RO) valve upgrade.
- **FY 2016**. Complete powerhouse Heating, Ventilating, Air Conditioning (HVAC) upgrade. Continue governor replacement and Unit 3 rehabilitation. Continue upgrade RO valve. Begin exciter replacement and tailrace crane rehabilitation.
- **FY 2017**. Complete unit 3 stator and cooler replacement. Continue exciter replacement, RO valve upgrade and

tailrace crane rehabilitation.

McNary Dam

- **FY 2015**. Continued generator winding replacements. Continued turbine design and replacement, 4160-480V station service rehabilitation, exciter replacement, potable water system upgrade, and levee drainage pump station upgrades. Began governor installation, powerhouse bridge crane skew control, spillway gate rehabilitation, main unit (MU) cooling water strainers replacement, and 230kV transformer design.
- **FY 2016**. Complete generator winding replacements and potable water system upgrade. Continue turbine design and replacement, 4160-480V station service rehabilitation, exciter replacement, MU cooling water strainers replacement, levee drainage pump station upgrades, and governor installation. Begin isophase bus upgrade.
- **FY 2017**. Complete transformer purchase, bridge crane skew control, digital governor replacements and exciter replacements. Continue turbine design, isophase bus upgrade, levee drainage pump station upgrades, MU cooling water strainers replacement, and 4160-480V station service rehabilitation. Begin spare main unit bearing design and purchase.

Ice Harbor Dam

- **FY 2015.** Completed governor replacement, drainage and dewatering pump upgrade, and oil storage and handling upgrade. Continued Units 1-3 runner replacements and stator winding replacement. Began HVAC controls upgrade.
- **FY 2016**. Continue Units 1-3 runner replacements, stator winding replacement, and HVAC controls upgrade.
- **FY 2017**. Continue Units 1-3 runner replacements.

Little Goose Dam

- **FY 2015.** Completed powerhouse bridge crane rehabilitation. Continued governor installations. Began station service transformers replacement.
- **FY 2016**. Complete governor installation. Purchase spare tailrace stoplogs. Continue station service transformers replacement.
- **FY 2017**. Purchase spare main unit bearing.

Lower Granite Dam

- **FY 2015**. Completed sewage treatment plant upgrade and powerhouse bridge crane refurbishment. Continued governor replacement, powerhouse HVAC system upgrade, and Unit 1 BLH linkage upgrade.
- **FY 2016**. Complete powerhouse HVAC system upgrade. Continue Unit 1 BLH linkage upgrade and governor replacement.
- **FY 2017**. Complete Unit 1 BLH linkage upgrade and governor replacement. Purchase spare main unit bearing.

Lower Monumental Dam

- **FY 2015**. Continued Unit 1 BLH linkage upgrade and generator rewind. Continued governor replacement.
- **FY 2016**. Continue Unit 1 BLH linkage upgrade and generator rewind. Continue governor replacement. Begin ispohase bus rehabilitation.
- **FY 2017**. Complete Unit 1 BLH linkage upgrade and generator rewind. Continue governor replacement. Begin station service breaker replacement.

Bureau of Reclamation Projects
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
9,489	86,466	109,479

Grand Coulee Dam

- **FY 2015.** Completed 500 kV switchyard relay replacements. Continued Supervisory Control and Data Acquisition System (SCADA) replacement, purchase of another left and right powerhouse spare winding, G22-24 wear ring replacements, and right powerplant transformer replacements. Continued powerplant battery replacement, drumgate floating bulkhead, Units 1-18 stator windings, cores, and spare replacement program, Units 1-18 exciter and governor replacement, station service compressed air system upgrades, and Units 21-24 transformer replacement. Began design for Units 19-21 upgrades including winding replacements.
- **FY 2016.** Complete powerplant battery replacement. Continue SCADA replacement, G22-24 wear ring replacements, drumgate floating bulkhead, Units 1-18 stator windings, cores, and spare replacement program, Units 1-18 exciter and governor replacement. Continue purchase of another left and right powerhouse spare winding, Units 19-21 upgrades including winding replacements, station service compressed air system upgrades, and Units 21-24 transformer replacement. Begin Units 22 and 23 wicket gate replacements.
- **FY 2017**. Complete G22-24 wear ring replacements and floating drumgate bulkhead. Continue SCADA replacement, Units 19-21 upgrades including winding replacements, Units 1-18 windings, core, exciter and governor replacements. Continue Units 22 and 23 wicket gate replacements, Units 21-24 transformer replacements and compressed air system upgrades. Begin Units 11-18 transformer replacements.

Keys Pump Generating Plant

- **FY 2015.** Continued P1-P6 exciters, relays and unit controls, PG7-PG12 governors, exciters, relays and unit controls. Continued PG7-PG12 circuit breaker replacement, and P5 and P6 impeller and core replacement and rewinds.
- **FY 2016.** Continue P1-P6 exciters, relays and unit controls, PG7-PG12 governors, exciters, relays and unit controls. Continue PG7-PG12 circuit breaker replacement, and P5 and P6 impeller and core replacement and rewinds. Begin phase reversal switch replacement.
- **FY 2017**. Complete PG7-PG12 circuit breaker replacement. Continue P5 and P6 impeller and core replacement and rewinds. Continue P1-P6 exciters, relays and unit controls and PG7-12 governors, exciters, relays and unit controls. Continue phase reversal switch replacement.

Hungry Horse Dam

- **FY 2015.** Continued SCADA replacement and station service and Motor Control Center (MCC) upgrades, main unit transformer fire protection system replacement, powerhouse crane controls, and exciter and governor replacement.
- **FY 2016.** Complete station service and MCC upgrades. Continue SCADA replacement, main unit transformer fire protection system replacement, powerhouse crane controls, and exciter and governor replacement.
- **FY 2017**. Continue SCADA replacement, G1-G4 exciter and governor replacement, main unit transformer fire protection system replacement, and powerplant crane controls.

Chandler Dam

- **FY 2015.** No capital projects underway.
- **FY 2016.** Begin Units 1 and 2 generator rewinds.
- **FY 2017**. Continue Units 1 and 2 generator rewinds.

Palisades Dam

- **FY 2015.** Completed fire detection and alarm system. Continued turbine runner replacement. Begin microwave system backbone east side.
- **FY 2016.** Complete turbine runner replacement and arc flash mitigation.
- **FY 2017**. Continue microwave system backbone eastside.

Green Springs Dam

- **FY 2015**. Continued exciter and transformer replacement.
- **FY 2016**. Complete transformer replacement.
- **FY 2017**. Complete exciter replacement.

Black Canyon Dam

- **FY 2015**. Continued Units 1 and 2 upgrades, and trash rake system.
- **FY 2016**. Continue Units 1 and 2 upgrades, and trash rake system.
- **FY 2017**. Complete installation of trash rake system. Continue Units 1 and 2 upgrades.

Anderson Ranch Dam

- **FY 2015**. Continued station service upgrade.
- **FY 2016**. Complete station service upgrade.
- **FY 2017**. No planned capital projects.

Roza Dam

- **FY 2015**. Continued switch rehabilitation and breaker upgrade.
- **FY 2016**. Complete switch rehabilitation and breaker upgrade.
- **FY 2017**. No planned capital projects.

Minidoka Dam

- **FY 2015**. Began Units 8 and 9 governor replacement and microwave system backbone east side. Continued arc flash mitigation.
- **FY 2016**. Complete arc flash mitigation. Continue Units 8 and 9 governor replacement and microwave system backbone east side. Begin switchyard modernization.
- **FY 2017**. Continue Units 8 and 9 governor replacement, switchyard modernization and microwave system backbone eastside.

Fish & Wildlife
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
21,373	40,000	45,602

Overview
Bonneville continues to develop budgets for the suite of fish and wildlife mitigation projects originally adopted in FY 2007 based on recommendations from the Council. Bonneville reaffirmed and expanded many project-specific commitments in subsequent agreements and processes, including BiOps and Fish Accords, and since then, virtually all these projects received independent science review through the Council and its project review processes. Bonneville's funding decisions embrace many of the management objectives and priorities in the Program and continue to integrate ESA responsibilities as described in the NOAA Fisheries' and USFWS's FCRPS BiOps. Coordination continues among Bonneville, Council, federal resource management agencies, states, tribes, and others to support the projects that satisfy Bonneville's mitigation responsibilities.

Bonneville intends to continue implementing the kinds of projects listed below. These projects are based upon the best available science and are regionally important in that they provide high priority mitigation and protection actions for fish and wildlife populations affected by the construction and operation of the FCRPS dams. Projects and facilities listed below deliver direct on-the-ground benefits to both ESA listed and non-listed fish and wildlife throughout the Columbia River Basin and have been evaluated and coordinated with the Council, state, federal and tribal fish and wildlife resource managers, local governments, watershed and environmental groups, and other interested parties. Specifically, as capital construction projects, hatchery facilities typically go through the Council's three-step process, which includes development of a Master Plan, environmental compliance, ESA consultation, value engineering analysis, and review by the Independent Science Review Panel.

Bonneville also may capitalize investment in some fish and wildlife habitat acquisitions if it provides a creditable and quantifiable benefit against a defined obligation for Bonneville and follows Bonneville's Capitalization Policy.

The three types of fish and wildlife projects that Bonneville capitalizes are as follows:

1) Fish passage structures -- Structures that enhance fish access to habitat in the Columbia River Basin. Work elements could contain the following: wells, ladders, screens, pumping, culverts, diversion (irrigation) consolidation, piping to reduce water loss, irrigation efficiencies (drip irrigation), lining of ditches (seepage reduction), removal of objects impeding fish passage or pushup dams, and construction-related habitat restoration.
2) Hatchery facility construction -- Projects and activities relating to the construction of fish hatcheries, including related satellite facilities (acclimation ponds and collection weirs). This may also include construction-related habitat restoration.
3) Land acquisition and stewardship -- Land acquisition projects protect, enhance, and maintain instream wetland and riparian habitat and provide credit to Bonneville, such as habitat units (HUs) or acres for wildlife or instream miles for resident fish, to fulfill the legal obligation of Bonneville to mitigate the impacts from construction and operation of the FCRPS.

Fish supplementation, production, and related facilities that may require capital funds in FY 2017 include the following:

<u>The Consolidated Appropriations Act, 2016 (Public Law 114-113) provided Expenditure Authority for the following projects:</u>
- Shoshone Paiute Trout Hatchery: The Shoshone Paiute Tribes of the Duck Valley Reservation propose that Bonneville fund the purchase and/or construction of a trout hatchery. The Tribes would own and operate the hatchery to produce trout for stocking in reservoirs located on the Duck Valley Reservation. Bonneville would fund the capital expenditure to meet contemporary aquaculture standards and achieve fish production goals. The Tribes believe they can reduce federal reservoir stocking costs—some of which Bonneville pays now on an annual basis.

- Spokane Tribal Hatchery: The Spokane Tribal Hatchery, funded by Bonneville in 1989 as partial mitigation for the impacts of the FCRPS, is owned and operated by the Spokane Tribe of Indians. The facility spawns, incubates, and rears Kokanee salmon and rainbow trout near Wellpinit, WA. In June 2015, the Tribe and Bonneville signed a 20-year agreement renewing commitments to operate and maintain the facility. The renewed agreement also plans to upgrade aging infrastructure, including ground water pumps and rearing containers. The work could begin in FY 2017.

-Snake River Sockeye Weirs: Bonneville funds efforts implemented by the Idaho Department of Fish and Game and the Shoshone Bannock Tribes to rebuild Snake River sockeye throughout their historic range. The combination of substantially increased numbers of returning adults as well as the completion of the Springfield Sockeye Hatchery in 2013 and its associated increased production, has created the need for Bonneville to potentially fund the construction, operation, and maintenance of weirs to further sockeye management objectives.

<u>The FY 2014 Omnibus Appropriations Act (Public Law No. 113-76) provided Expenditure Authority for the following projects:</u>

- John Day Reprogramming and Construction: This project is being proposed by the Columbia River Inter-Tribal Fish Commission (CRITFC) under the Accords to work on the balance between upriver and down river salmon hatchery production mitigating for John Day and The Dalles Dams. Final reprogramming facilities and locations are still being analyzed by the Tribes, the Corps, and Bonneville. The project area encompasses the mainstem Columbia River from the base of McNary Dam downstream to The Dalles Dam. Capital dollars for this project will integrate with the Corps funds constructing additions to new or existing FCRPS hatchery facilities to accommodate the reprogramming of hatchery fish.

- Columbia River Basin White Sturgeon Hatchery: The Columbia River Basin White Sturgeon Hatchery, proposed by the CRITFC under the Accords, will mitigate for white sturgeon population declines due to consistent poor recruitment upstream of Bonneville Dam. Expected production at a new or existing facility will be 15,000 - 20,000 yearling white sturgeon per year. The final project may include broodstock collection and holding, rearing wild-spawned juveniles, and acclimating juveniles prior to release. A location for the facility has not yet been determined, but it will likely be located within 60 miles of the confluence of the Columbia and Snake Rivers. The Master Plan for the hatchery is currently under review by the Council.

- Kelt Reconditioning and Reproductive Success Evaluation Research: CRITFC, under the Accords, is proposing a relatively small holding tank facility to recondition female steelhead (kelts) after they have spawned. The fish will be held and fed until they have rematured and then be released into the Snake River where they will contribute to the spawning run. The capital portion of the project is expected to be constructed in the Snake River Basin, potentially at Lower Granite Dam. As specified in the 2008 FCRPS BiOp and Supplemental FCRPS BiOps issued in 2010 and 2014, Bonneville will implement the kelt reconditioning plan to improve the productivity of Snake River basin B-run steelhead populations that are listed for protection under the ESA. NOAA's analysis of Prospective Actions indicates that a combination of transportation, kelt reconditioning, and in-stream passage improvements (e.g., spill-flow modifications) could increase kelt returns enough to increase the number of returning Snake River B-run steelhead spawners to Lower Granite Dam by a target of 6 percent as specified under the BiOp. The Master Plan for the facility is currently being reviewed by Bonneville.

<u>Ongoing Projects (Expenditure Authority previously received):</u>

- Crystal Springs Hatchery Facilities: This project is for facilities for rearing and out-planting resident and anadromous fish in central and southern Idaho. The facility would be located near the American Falls Reservoir in Idaho. It may produce Yellowstone Cutthroat, a resident fish, and anadromous fish including Snake River spring Chinook salmon Snake River steelhead, and Snake River sockeye. The facility is expected to produce up to one million Chinook smolts annually. The facility is sponsored by the Shoshone-Bannock Tribes under their Accord, who are expected to operate and manage the facility once it is complete. A final Environmental Impact Statement is expected to be complete in 2016 and a Record of Decision is expected in February 2017.

- Redfish Lake Sockeye Salmon program: The Snake River sockeye salmon, an Evolutionarily Significant Unit (ESU), was listed under the Endangered Species Act in 1991 (56 FR 58619). The Snake River Sockeye Salmon Captive Broodstock Program has

prevented the extinction of endangered Snake River sockeye salmon. The program has been able to help successfully conserve the genetic resources of the founding population and begun producing fish for rebuilding the naturally spawning population in Redfish Lake. The program uses state of the art hatchery facilities and fish husbandry protocols, genetic support, and monitoring and evaluation to continue rebuilding numbers of fish. Currently, the program retains replicate, captive broodstock within multiple facilities (Eagle Fish Hatchery (FH) located in Idaho state and Burley Creek FH and Manchester Research Station, both located in Washington state). Eggs produced from these locations are transferred to other facilities (Oxbow FH, located in Oregon state and/or Sawtooth FH located in Idaho state) for release programs. The project continues to expand by increasing the capacity of existing facilities and also by acquiring a new facility under the Idaho Columbia Basin Fish Accord. The newly constructed Springfield FH located in Idaho produces additional smolts as called for in the NOAA Fisheries FCRPS BiOp. The expanded smolt releases have already resulted in an increase in the abundance and productivity of the naturally-spawning population. This strategy will greatly increase the likelihood of higher adult returns. Additional expansions include improvements at the Redfish Lake Creek trap and Sawtooth FH weir to hold/trap an increased number of adults to support increased smolt production from Springfield Hatchery. The biological goals are to increase the number of adults spawning naturally in the Sawtooth Valley and transition the captive broodstock to a conventional hatchery production program that uses anadromous adults as broodstock.

- Klickitat Production Expansion: The Klickitat River Master Plan was submitted by the Yakama Nation, reviewed by the ISRP, recommended with comments by the Council, and approved by Bonneville in 2008. The plan's goal is to protect and increase naturally producing populations of spring Chinook and steelhead while protecting the biological integrity and the genetic diversity of indigenous fish stocks in the sub-basin. The Klickitat Master Plan includes three main elements: Lyle Falls Fishway upgrades; construction of the Castile Falls enumeration facility; upgrades to the Klickitat hatchery with the potential for constructing a new facility in the lower Klickitat River to accommodate the ongoing production of coho and fall Chinook; and an acclimation site in the upper watershed at McCreedy Creek. In early 2009 Bonneville completed the Lyle Falls Environmental Impact Statement (EIS) and Record of Decision (ROD). Upgrades to enumeration and collection facilities at Lyle and Castile have been completed. Certain upgrades at the Klickitat Hatchery have also been made to maintain existing fish and wildlife program activities and to address hatchery safety concerns. Lyle and Castile Falls fishways have passive integrated transponder (PIT) tag interrogation capability, and the Lyle Falls facility includes a lamprey passage structure. A new Klickitat Hatchery Complex EIS initiated in July 2009 will examine options for the development and operation of new production and supplementation facilities and acclimation alternatives, and additional upgrades to the existing hatchery facility. The Yakama Nation issued a revised Master Plan, July 2012, providing updates to their fish management plans. When the EIS is complete and Master Plan accepted, the Council will review the Step 3 recommendation in the Council 3-Step Review process. The final EIS has been held up while the Yakama Nation refines its proposal. The National Environmental Policy Act (NEPA) process will resume shortly after the tribe settles on its proposal. Construction would occur only after Bonneville issues a ROD and the National Marine Fisheries Service (NMFS) completes the Biological Opinion for the Klickitat Production/Fish Management plans. Bonneville is working with the Yakama Nation to identify and focus on the highest priority construction actions in the Klickitat Watershed.

- Hood River Production Facility: This project is underway and includes expansion of existing Parkdale fish hatchery to accommodate spring Chinook rearing, construction of new Hood River adult salmonid trapping facilities, and development of alternative adult trapping sites. The Powerdale Dam Fish Trap formerly provided the foundation for many of the activities associated with implementation of the Hood River Production Program. These include: monitoring escapement, collecting life history characteristics, and broodstock acquisition. PacificCorps' demolition of its Powerdale Dam and the associated fish trapping facility in 2010 necessitated the development of alternative adult broodstock trapping sites. One permanent fish trap on the West Fork of the Hood River was completed in 2013, and a temporary trapping site is operational on the East Fork Hood River. A permanent trap site on the East Fork is currently being evaluated. The Hood River Production Program has four primary goals: 1) re-establish naturally sustaining runs of spring Chinook in the Hood River; 2) re-build naturally sustaining runs of summer and winter steelhead in the Hood River; 3) maintain genetic characteristics of Hood River fish populations; and 4) provide fish for sustainable harvest by both sport and tribal fishers.

- Mid-Columbia Coho Restoration: This Yakama Accord project's vision is to re-establish naturally reproducing coho salmon populations in the Wenatchee River and Methow River sub-basins at biologically sustainable levels which provide significant harvest in most years. This program will construct a facility on the Wenatchee River for holding and spawning broodstock,

incubating eggs, and rearing juveniles. Additional semi-natural ponds will also be constructed in the Wenatchee and Methow sub-basins for acclimating smolts prior to their release. The phased approach, including associated facilities, incorporates development of a mid-Columbia hatchery broodstock, local adaptation to tributaries in the Wenatchee and Methow Basins, and habitat restoration that will benefit coho as well as ESA-listed spring Chinook, steelhead, and bull trout. Major facility construction is expected to occur over the FYs 2016-2017 timeframe.

- Walla Walla Hatchery: The Walla Walla Hatchery is proposed by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) under their Accord. The Tribes would own and operate the hatchery, which will produce up to 500,000 spring Chinook smolts annually for release into the Walla Walla River. Final-design started in the summer of 2013, upon finalization of the Council/BPA/CTUIR agreement to proceed. An environmental impact statement, which was started in January 2013, is now expected to be completed in 2016. Construction may commence as early as 2016. The facility will hold, spawn, incubate and rear spring Chinook on the South Fork Walla Walla River near Milton-Freewater, Oregon.

- Yakima Coho Facility: This hatchery is proposed by the Confederated Tribes and Bands of the Yakama Nation under the Yakama Nation Accord, and is presented in the Yakima River Subbasin Summer and Fall Run Chinook and Coho Salmon Hatchery Master Plan. The Yakama Nation would own and operate the hatchery which will produce 500,000 parr and 200,000 smolts using broodstock collected at Roza and Sunnyside dams. Pre-design is completed. Bonneville will hold the design and construction contract on behalf of the Yakama Nation. A Request for Offers went out in June 2015 and proposals are expected later in the summer of 2015. Shortly afterward, Bonneville expects to begin scoping an environmental impact statement. Construction is not expected to begin until 2017.

Potential non-construction capital Wildlife and Resident Fish Habitat Acquisitions (including Conservation Easements) eligible for capitalization are:

- Albeni Falls Wildlife Mitigation
- Willamette Wildlife Habitat Acquisitions
- Libby and Hungry Horse Reservoirs Resident Fish Acquisitions
- Southern Idaho Habitat Acquisitions

Energy Efficiency
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
87,225	0	0

Overview

Bonneville's energy efficiency program offers several ways for customer utilities to participate in regional energy efficiency. Program components include: (1) standard offer efficiency measures and custom projects, which result in customer proposals to conserve energy through such programs as residential weatherization, commercial lighting, Heating, Ventilation, and Air Conditioning (HVAC), industrial processes and lighting, irrigated agriculture, etc.; (2) third party delivery programs, such as Simple Steps Smart Savings, Energy Smart Industrial, and Green Motors programs; and, (3) programs to help regional federal installations reduce energy use, including federal hatcheries and irrigation districts, and to support the Corps and Reclamation in their efforts to reduce energy use. Support is also available through the large project program which offers funding for larger energy efficiency opportunities. Beginning in FY 2016, all but the large project program will transfer funding from capital to operating expense. Bonneville does not currently have any projected spending for the large project program. This funding conversion from capital to expense eliminates the growth of long-term energy efficiency debt and associated debt service costs without reducing the ability to help the region meet its energy efficiency goals.

Bonneville's energy efficiency budget reflects a need to meet aggressive targets from the Council's 6th Power Plan and anticipated targets in the 7th Power Plan. Specifically, Bonneville's energy efficiency targets increased from about 280 aMW under the Council's 5th Power Plan (2005-09) to 504 aMW under its 6th Power Plan (2010-14). The 504 aMW reflects conservation that was expected to be achievable in the service territories of Bonneville's public power customers. In FY 2014, Bonneville exceeded the five-year target and FY 2015 performance continued on that trajectory, exceeding the 117 aMW which was the target for FY 2014 and FY 2015 combined. Because the 7th Power Plan draft is expected to be released in early 2016, Bonneville has determined its level of energy efficiency performance and associated budget based on the 6th Power Plan's annual savings targets, which call for an incremental 400 aMW of energy efficiency between 2015 and 2017. In meeting its energy efficiency goals, Bonneville may employ resource acquisition agreements, as authorized by Northwest Power Act section 6, and customer self-funded conservation.

Activities and Explanation of Changes

FY 2016 Estimate	FY 2017 Estimate	Explanation of Changes FY 2017 vs FY 2016 Estimate
Power Services – Capital $280,790,000	**$315,510,0000**	**+$34,720,000**
Associated Projects $240,790,000 Milestones[1]: • Complete powerplant battery replacement at Grand Coulee. • Complete governor oil filtration system installation at Bonneville dam. • Complete powerhouse and dam electrical distribution equipment replacement at Libby. • Complete turbine runner replacement and arc flash mitigation at Palisades.	**$269,908,000** Milestones: • Complete G22-24 wear ring replacements and floating drumgate bulkhead at Grand Coulee. • Complete turbine replacements at Chief Joseph. • Complete station service switchgear replacement at Albeni Falls. • Complete draft tube bulkhead refurbishment and rotor pedestal installation at John Day. • Complete governor installation at Libby.	**+$29,118,000/+12.1%** The increase reflects a reshaping of funding needs for investment in the hydro electric system assets.
Fish & Wildlife $40,000,000 Milestones: • Continue implementation of the Program, BiOps and Fish Accords.	**$45,602,000** Milestones: • Continue implementation of the Program, BiOps and Fish Accords.	**+$5,602,000/+14.0%** The increase reflects a long-term, planned effort to reshape funding necessary to implement the BiOps, Fish Accords, Columbia River Basin Fish and Wildlife activities.
Energy Efficiency $0 Milestones: Not applicable	**$0** Milestones: Not applicable	**$0** Not applicable

[1] FY 2016 milestones have been updated from the FY 2016 Congressional submission due to updated forecasts.

Transmission Services – Capital
Funding Schedule by Activity
Funding ($K)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate	FY 2017 vs FY 2016	
				$	%
Transmission Services – Capital					
Main Grid	63,518	104,380	133,777	29,397	28%
Area & Customer Services	4,101	12,946	30,754	17,809	138%
Upgrades & Additions	267,057	253,097	213,994	-39,103	-15%
System Replacements	126,603	329,618	265,952	-63,665	-19%
Projects Funded in Advance	265,983	30,000	30,000	0	0
Total, Transmission Services - Capital	**727,262**	**730,040**	**674,478**	**-55,562**	**-8%**

Outyears ($K)

	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Transmission Services - Capital					
Main Grid	133,777	147,782	149,848	121,797	618
Area & Customer Services	30,754	939	299	232	76
Upgrades & Additions	213,994	63,785	59,268	55,017	52,684
System Replacements	265,952	232,969	235,617	240,052	252,846
Projects Funded in Advance	30,000	30,000	50,000	50,000	50,000
Total, Transmission Services - Capital	**674,478**	**475,475**	**495,032**	**467,097**	**356,225**

Transmission Services – Capital

Overview

Transmission Services (TS) is responsible for about 75 percent of the Pacific Northwest's high-voltage transmission. TS provides funding for all additions, upgrades and replacements to the Bonneville transmission system, resulting in reliable service to northwest generators and transmission customers. The Bonneville transmission system also facilitates the sale and exchange of power to and from the region.

TS continues to make significant infrastructure improvements and additions to the system to assure reliable transmission in the Northwest. These improvements and additions will help the Bonneville transmission system continue to comply with national reliability standards, replace aging and obsolete equipment, allow for interconnection of needed new generation, and remove constraints that limit economic trade or the ability to maintain the system. Many of the proposed TS projects will be funded through Bonneville lease-purchase agreements. The lease-purchases obligate Bonneville to make expenditures to acquire the use of the related facilities and are identified on an as needed basis. Bonneville may also make related expenditures to facilitate lease-purchase opportunities.

Bonneville's completed infrastructure investments in the last decade that further strengthen the network consist of the following projects: Puget Sound Area Additions, North of Hanford/North of John Day, Celilo Modernization, Eastern Washington Reinforcement, Grand Coulee-Bell, Kangley–Echo Lake, Schultz-Wautoma, McNary-John Day, and Portland Area Additions.

Congressionally-approved Production Tax Credits (PTC) for renewable energy enacted in 2005 were extended in 2009 to 2012, and most recently again in 2013, 2014 and 2015. The incentives created by these credits, along with Renewable Portfolio Standards (RPS) implemented by the states of Oregon, Washington, and California, have spurred a large number of renewable interconnection requests to the Bonneville transmission grid. As of December 31, 2015, Bonneville has interconnected a total of 5,243 MW of new renewable qualified generation. Bonneville has more than 7,000 MW in additional renewable (wind, solar, biomass, geothermal, etc.) interconnection requests still remaining in the study queue. The current projections are possibly 8,500 interconnected MW by 2025. Much of the remaining generation demand is the result of the Renewable Portfolio Standards enacted by Oregon and Washington that require utilities to acquire more than 8,000 MW of renewable energy in the Northwest by 2025. Exports to California are limited now by California laws and are expected to remain at 2,000 to 2,500 MW during the same period. Also in the interconnection queue is approximately 800 MW of natural gas fired generation. Efficiency improvements to the FCRPS hydro units that qualify as renewable are also proposed between 2015 and 2021.

In June 2008, Bonneville's first Network Open Season (NOS) received 153 requests from 28 customers for 6,410 MW of new service, about three-fourths for wind energy integration. Bonneville subsequently offered 1,782 MW of new transmission service on its existing system. Bonneville identified four new Main Grid capital projects from the 2008 NOS: (1) McNary-John Day 500 kV transmission line (part of West of McNary Reinforcements Group 1); (2) Big Eddy-Knight 500 kV transmission line and substation (part of West of McNary Reinforcements Group 2); (3) Central Ferry- Lower Monumental 500 kV Reinforcement (formerly Little Goose Area Reinforcement); and (4) I-5 Corridor 500 kV Reinforcement. Construction of the McNary-John Day 500 kV transmission line is complete and Bonneville has completed construction of the Big Eddy-Knight project and the Central Ferry-Lower Monumental 500 kV Reinforcement project. The I-5 Corridor project is currently undergoing environmental review. If all four projects are constructed they will provide almost 6,000 MW of new transmission service.

Bonneville's second NOS window for new transmission service requests in 2009 resulted in 82 service requests resulting in 34 contracts totaling 1,553 MW. Of that amount, approximately 923 MW represent wind project interconnection requests.

Bonneville's third NOS window in 2010 resulted in new requests totaling 3,759 MW, of which 2,993 MW represent wind integration requests. The 2010 process identified one additional Main Grid capital project, the Montana to Washington project, for which environmental review was begun, however, the requests to support this project have been subsequently withdrawn and so all work on the project was terminated.

After a three-year pause, Bonneville re-started the NOS process in the spring of 2013. Bonneville's 2013 NOS included 50 transmission service requests from 18 customers for 3,673 MW demand of which only 95 MW represent new wind integration requests in the Pacific Northwest. The 2013 NOS identified one new area of expansion at the Monroe-Novelty Hill facilities but otherwise found no additional Main Grid capital projects beyond those previously recommended under the prior NOS processes.

As noted, Bonneville's capital program for TS includes a wide variety of specific investments that are determined after internal review and, in some cases, external review. In 2009, TS began implementing best practice frameworks that provide a standardized structure and approach to Asset Management. As a result, TS's Asset Management Strategies, derived from Agency Strategies, drive Bonneville's Asset Plans, which determine its capital and expense needs. On occasion, capital investments must be made on short notice because of unexpected needs; because of the identification of obsolete, worn out, failed, failing, or at-risk systems and facilities; because of system reliability requirements;, and because near-term opportunities to install or construct facilities arise as outages occur or as schedules for outages change. For these and other reasons, TS's capital program is fluid and subject to change. Thus, Bonneville is unable to predict with specificity some of the new capital investments in the transmission system. The types of investments may include but are not limited to: arrestor, bus and bus pedestal, circuit breaker, circuit switcher, communication tower, concrete pole, control center mapboard and video wall displays, control house, converter grading capacitors, converter harmonic filters, converter smoothing reactors, converter transformers, current limiting reactor, current limiting resistor, current transformer, digital fault locator, digital cross-connect system (DCS), disconnect switch, engine generator, engineered steel pole, fiber optic cable, fiber terminal, fuel dispensing facility, grounding system, grounding transformer, microwave multiplex transmitter, network management system (NMS), overhead conductor, overhead ground wire, phase measuring unit (PMU), power control assembly (PCA), power transformer, relay, revenue meter, series capacitor, shunt capacitor, shunt reactor, station service transformer, station service inverter, substation dead end tower, substation perimeter fence, switchyard lighting, thyristor, transfer switch, transmission steel tower, voltage regulator, voltage transformer, water/sewer system, wood pole and cross-arm, and other similar items consistent with Bonneville's capitalization policy determinations (such as spacer damper replacements).

Notwithstanding that the capital program for TS is subject to change, Bonneville has identified several general areas where capital program investment will occur.

Bonneville will continue to fund fiber optic communications facilities needed to meet Bonneville's projected operational needs. To the extent that these investments create temporary periods of excess fiber optic capacity, such dark fiber capacity can be made available to telecommunications providers and to non-profits to meet public benefit internet access needs for rural areas and other needs in Bonneville's service area. Bonneville's investments in fiber optics, including the role of the private sector in building fiber optic networks, is consistent with the "Fiber Optic Cable Plan" submitted to Congress on May 24, 2000, accompanying the FY 2000 Energy and Water Development Appropriations Act. In accordance with this plan, when possible, Bonneville will establish partnerships with fiber optic facility and service providers to meet its needs.

In December 2004, the Congress passed and the President signed the Commercial Spectrum Enhancement Act (CSEA, Title II of P.L. 108-494), creating the Spectrum Relocation Fund (SRF) to streamline the relocation of federal systems from certain spectrum bands to accommodate commercial use by facilitating reimbursement to affected agencies of relocation costs. The Federal Communications Commission has auctioned licenses for reallocated federal spectrum, which will facilitate the provision of Advanced Wireless Services to consumers. Funds were made available to agencies in FY 2007 for relocation of communications systems operating on the affected spectrum. These funds are mandatory and will remain available until expended, and agencies will return to the SRF any amounts received in excess of actual relocation costs. The estimated Bonneville cost of this relocation was $48.7 million. The project was completed in November 2013 and the operational system performance was being observed during FY 2014 and early FY 2015 to determine that it has achieved comparable capability as defined under the CSEA. Bonneville determined in December 2014 that comparable capability had been achieved.

As part of the Homeland Security Presidential Directives, Bonneville has completed a physical security assessment of all critical facilities and is implementing security enhancements at these facilities. These security enhancements increase controlled access to Bonneville's facilities and provide video surveillance and monitoring capabilities.

Accomplishments

- Issued final Record of Decision for the FYs 2016-2017 rate case on July 23, 2015.
- Integrated 5,081 MW of wind by December 2015 on Bonneville's transmission system.
- Completed construction of the Big Eddy-Knight Transmission Project.
- Completed construction of the Central Ferry-Lower Monumental Transmission Project.
- Completed route analysis for the I-5 Corridor Reinforcement project and completed the draft EIS.
- Completed design of the Paul Substation 500kV Shunt Reactor Addition.
- Completed construction of the Raver Substation Reactor Upgrade.
- Completed construction of the Capacitor Bank at Kalispel.

Explanation of Changes

Bonneville's budget includes $674.5 million in FY 2017 for TS which is an eight percent decrease from the FY 2016 forecasted level. The decrease reflects reduced investment in Systems and Replacements and Upgrades and Additions driven by a reduction in the Pacific Direct Current Line (PDCI) projected spending needs as construction nears completion offset by increases in Main Grid and Area and Customer Services driven by an increase in the I-5 Corridor Reinforcement project and other projects.

The FY 2017 budget increases the levels for Main Grid (+$29.4 million) and Area & Customer Services (+$17.8 million). The budget decreases levels for Upgrades & Additions (-$39.1 million) and System Replacements (-$63.6 million). There is no change in funding for PFIA.

Strategic Management

Bonneville provides transmission and energy services while supporting integration of renewable resources in the Pacific Northwest. Bonneville will continue to implement the following strategies to serve the region:

1. To improve system adequacy, reliability and availability, Bonneville has embarked on major transmission infrastructure projects. The projects shore up the region's transmission system and help deliver the region's future power needs. These projects address multiple challenges, such as integration of renewable energy, the need to relieve a number of congested transmission paths, the challenge to keep up with growing energy demands, and the need to meet Bonneville's open access policy in support of competitive markets. Specific strategies for these efforts are outlined in the TS Load Service and Generation Integration strategies.

2. Bonneville will continue to replace aging assets that are vital to the reliability of the existing transmission system. To that end, TS has developed specific long-term strategies for the following asset categories:
    a. Substations AC
    b. Power System Control/System Telecommunications
    c. Wood Lines
    d. Steel Lines
    e. Rights of Way (ROW), (Land Rights, Access Roads, and Vegetation Management)
    f. System Protection and Control
    g. Control Center

The following external factors present the strongest impact to overall achievement of the program's strategic goal:

- Continually changing economic and institutional conditions
- Competitive dynamics
- Ongoing changes in the electric industry
- Siting issues

Main Grid
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
63,518	104,380	133,777

Overview
Bonneville's strategic objectives for Main Grid projects are to assure compliance with the NERC and Western Electricity Coordinating Council (WECC) reliability criteria, provide voltage support, provide a reliable transmission system for open access, and provide for relief of transmission system congestion. During this budgeting period, projects are planned that will provide transmission reinforcement and voltage support to major load areas that are primarily west of the Cascade Mountains. In addition, transmission reinforcements are planned for load centers in central Oregon, central Washington, the Puget Sound area, the Willamette Valley, and along the I-5 Corridor, as well as projects to provide transmission access for new generation projects.

Continued investments in Main Grid assets include:
I-5 Corridor Reinforcement
- **FY 2015**. Concluded route analysis and completing National Environmental Policy Act (NEPA) work.
- **FY 2016**. Complete NEPA work and begin design.
- **FY 2017**. Complete design and possibly begin construction.

Big Eddy-Knight (West of McNary Reinforcements Group 2)
- **FY 2015**. Continued construction.
- **FY 2016**. Completed construction and energized in November 2015.

Central Ferry-Lower Monumental 500 kV Reinforcement (formerly Little Goose Area Reinforcement)
- **FY 2015**. Continued construction.
- **FY 2016.** Completed construction and energized in November 2015.

Midway-Grandview 115 kV Line upgrade
- **FY 2016**. Begin construction.
- **FY 2017**. Continue construction.

Puget Sound Area Northern Intertie (PSANI)
- **FY 2015**. Continued construction.
- **FY 2016**. Continue construction.
- **FY 2017**. Complete construction.

Tucannon, LaPine, Franklin, White Bluffs, Monroe and McNary (6 separate Capacitor projects)
- **FY 2015**. Completed construction.

Alvey Substation Reactors
- **FY 2015**. Began construction.
- **FY 2016**. Complete construction.

Raver Substation Reactor
- **FY 2015**. Completed construction of the 500 kV Reactor upgrade.

Schultz Series Capacitors
- **FY 2017**. Begin design.

Monroe-Echo Lake 500 kV Line Re-termination #2
- **FY 2016**. Begin design.

- **FY 2017**. Begin construction.

McNary Substation 500/230 kV Bank Addition

- **FY 2015**. Completed design and begin construction.
- **FY 2016**. Continue construction.
- **FY 2017**. Continue construction.

Paul Substation 500 kV Shunt Reactor Addition

- **FY 2015**. Completed design and begin construction.
- **FY 2016**. Complete construction.

Continue Planning Studies to: (all years)

- Identify infrastructure additions.
- Identify projects driven by NERC and WECC reliability criteria.
- Identify system reactive needs to mitigate unacceptable low or high voltage problems and other system additions.
- Relieve transmission system congestion and integrate new generation facilities.

Area & Customer Service
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
4,101	12,946	30,754

Overview
Bonneville's strategic objective for Area and Customer Service projects is to assure that Bonneville meets reliability standards and contractual obligations.

Continued investments in Area & Customer Service assets include:
Hooper Springs Substation

- **FY 2015**. Began design.
- **FY 2016.** Begin construction.
- **FY 2017**. Continue construction.

Capacitor Bank at Kalispel

- **FY 2015**. Completed construction.

Continuous Activities (all years)

- Continue preliminary engineering and design for miscellaneous facilities required to meet contractual obligations and maintain reliable service for Bonneville's service area.

Upgrades & Additions
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
267,057	253,097	213,994

Overview
Bonneville's strategic objectives for Upgrades and Additions are to replace older 60 Hz (Hertz) communications and controls with newer technology including fiber optics in order to maintain or enhance the capabilities of the transmission system; to implement special remedial action control schemes to accommodate new generation and mitigate immediate operational and market constrained paths; and to support communications and remedial action schemes, among other proposals.

During this budget period, Bonneville will complete design, material acquisition, construction and activation of several fiber optics facilities to provide bandwidth capacity and high-speed data transfers to eventually replace microwave analog radios, which are technologically obsolete and nearing the end of their useful life. Temporarily, in some areas, excess dark fiber capacity is being offered for a term to telecommunications providers or to public entities such as public utilities, schools, libraries, and hospitals, providing them access to high-speed telecommunication services as a public benefit.

Continued investments in Upgrades & Additions assets include:
VHF Radio System Upgrade

- **FY 2015**. Continued construction.
- **FY 2016**. Continue construction.
- **FY 2017**. Complete construction.

Synchrophasor Project

- **FY 2015**. Continued construction at multiple sites.
- **FY 2016.** Continue construction at multiple sites.
- **FY 2017**. Continue construction at multiple sites.

Pacific DC Intertie from 3,100 MW to 3,800 MW Project

- **FY 2015**. Began construction for upgrade.
- **FY 2016**. Continue construction.
- **FY 2017**. Continue construction.

Ross-Schultz Fiber Circuit Upgrade

- **FY 2015**. Continued construction.
- **FY 2016**. Continue construction.
- **FY 2017**. Continue construction.

Bell-Boundary #DC SONET Ring Upgrade

- **FY 2015**. Continued construction.
- **FY 2016**. Continue construction.
- **FY 2017**. Complete construction.

Operational Megabit Ethernet (OMET) System

- **FY 2015**. Continued construction.
- **FY 2016**. Continue construction.
- **FY 2017**. Continue construction.

Longhorn Annex for Umatilla Electric Cooperative (UEC)

- **FY 2015**. Continued construction.
- **FY 2016**. Complete construction.

500 kV Spares at Wind Integration Substations

- **FY 2016**. Begin design for site 1.
- **FY 2017**. Begin construction for site 1 and design for site 2.

Continuous Activities (all years)

- Upgrading two miles of fiber between Bonneville Power House and Bonneville Control House.
- Planning, design, material acquisition, and construction of special remedial action control schemes required for interconnecting new generation projects and mitigating immediate constrained paths.
- Planning, design, material acquisition, and construction of various system additions and upgrades necessary to maintain a reliable system for Bonneville's service area.
- Construction of secondary fiber related projects and digital radio system upgrades to improve the operational telecommunication system.
- Material procurement and construction to upgrade the main fiber optic backbone system (#KC and #NC systems).
- Continue to upgrade control houses and standby engine generators at various locations.

System Replacements
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
126,603	329,618	265,952

Overview
Bonneville's strategic objectives for the Sustain Program are to replace high-risk, obsolete, and maintenance-intensive facilities and equipment and to reduce the chance of equipment failure by: (1) replacing high voltage transformers and power circuit breakers which are at or near the end of their useful life; (2) replacing risky, outdated and obsolete control and communications equipment and systems, and includes mandated replacements due to legislation; and (3) replacing all other existing high-risk equipment and facilities affecting the safety and reliability of the transmission system. Transmission Services uses a total economic cost model to determine priorities for replacement.

Continued investments in System Replacements assets include:
Continuous Activity (all years)

Non-Electric Replacements
- Continue non-electric replacements as necessary.
- Continue the design, material acquisition, and construction for the Access Road program capital component and the Land Rights program capital component in support of the Lines and ROW Programs.
- Continue design and construction of capital improvements for identified existing facilities.

Electric Replacements
- Continue replacement of system protection and control equipment and other substation and line facilities as needed to maintain reliability using Reliability Centered Maintenance criteria. Such replacements include relays, annunciators, oscillographs, metering and various types of communication related equipment replacing and migrating analog to digital technology and SCADA equipment.
- Continue replacement of under-rated and high maintenance substation equipment.
- Continue replacing spacer dampers on various 500 kV lines.
- Continue replacing critical, operational tools and marketing business systems at the Dittmer and Munro Control Centers.
- Continue replacing deteriorating wood pole transmission line structures, spacer dampers, and insulators.

Projects Funded in Advance
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
265,983	30,000	30,000

Overview
This category includes those facilities and/or equipment where Bonneville retains control or ownership but which are funded or financed by a third party or with reserves, either in total or in part. This program also includes investments associated with the Commercial Spectrum Enhancement Act (CSEA).

Continued investments in PFIA assets include:
Continuous Activity (all years)

- Continue to integrate various new generation and line/load projects into Bonneville transmission grid based on requests placed and processed in accordance with transmission tariff.
- Continue planning studies to identify system impacts and needs regarding proposed new generation projects.
- Engineer and begin construction of several large wind generation interconnection substations.
- Complete environmental cleanup and other work necessary for the sale of Bonneville facilities.
- Continue the design and construction for various radio replacements at accessible sites associated with the CSEA.

Activities, Milestones, and Explanation of Changes

FY 2016 Estimate	FY 2017 Estimate	Explanation of Changes FY 2017 vs FY 2016 Estimate
Transmission Services – Capital $730,040,000	**$674,478,000**	**-$55,562,000**
Main Grid $104,380,000 Milestones: • Complete NEPA and begin design of the I-5 Corridor Reinforcement project. • Begin construction of Midway-Grandview 115kV Line upgrade. • Complete construction of the Big Eddy-Knight project. • Continue construction of the PSANI project. • Complete construction of Central Ferry Lower Monumental.	**$133,777,000** Milestones: • Complete design and possibly begin construction of the I-5 Corridor Reinforcement project. • Continue construction of Midway-Grandview 115kV Line upgrade. • Complete construction of the PSANI project • Continue construction of McNary Substation.	**+$29,397,000/+28.2%** The increase reflects the start of construction on the I-5 Corridor Reinforcement project.
Area & Customer Service $12,946,000 Milestones: • Begin construction of Hooper Springs Substation.	**$30,754,000** Milestones: • Continue construction of Hooper Springs Substation.	**+$17,809,000/+137.6%** The increase reflects the construction work scheduled for the Hooper Springs project.

FY 2016 Estimate	FY 2017 Estimate	Explanation of Changes FY 2017 vs FY 2016 Estimate
Upgrades & Additions $253,097,000 Milestones: • Begin design for site 1 for 500kV spares at wind integration substations. • Continue construction at multiple sites of the Synchrophasor project. • Continue construction for the upgrading of the Pacific DC Intertie from 3,100 MW to 3,800 MW project.	**$213,994,000** Milestones: • Begin construction of site 1 and design for site 2 for 500kV spares at wind integration substations. • Continue construction at multiple sites of the Synchrophasor project. • Continue construction for the upgrading of the Pacific DC Intertie from 3,100 MW to 3,800 MW project.	**-$39,103,000/-15.4%** The decrease reflects the ramping down of construction in the Pacific Direct Current Line (PDCI) project as construction nears completion.
Systems Replacements $329,618,000 Milestones: • Continue design and construction of capital improvements for identified existing facilities. • Continue non-electric replacements as necessary. • Continue replacement of system protection and control equipment and other substation and line facilities as needed to maintain reliability using Reliability Centered Maintenance criteria.	**$265,952,000** Milestones: • Continue design and construction of capital improvements for identified existing facilities. • Continue non-electric replacements as necessary. • Continue replacement of system protection and control equipment and other substation and line facilities as needed to maintain reliability using Reliability Centered Maintenance criteria.	**-$63,665,000/-19.3%** The decrease reflects a decrease in the number of replacement projects.
Projects Funded in Advanced $30,000,000 Milestones: • Continue to integrate new generation as requested. • Continue planning studies on needs and impacts of proposed new generation.	**$30,000,000** Milestones: • Continue to integrate new generation as requested. • Continue planning studies on needs and impacts of proposed new generation.	**$0/0%** No change in funding identified.

Capital Information Technology & Equipment/Capitalized Bond Premium
Funding Schedule by Activity
Funding ($K)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate	FY 2017 vs FY 2016	
				$	%
Capital Information Technology (IT) & Equipment/Capitalized Bond Premium					
Capital IT & Equipment	34,344	37,356	28,794	-8,562	-23%
Capitalized Bond Premium	0	0	0	0	-
Total, Capital IT & Equipment/Capitalized Bond Premium	**34,344**	**37,356**	**28,794**	**-8,562**	**-23%**

Outyears ($K)

	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Capital Information Technology (IT) & Equipment/Capitalized Bond Premium					
Capital IT & Equipment	28,794	10,854	6,417	4,069	11,136
Capitalized Bond Premium	0	2,000	2,000	2,000	2,000
Total, Capital IT & Equipment/Capitalized Bond Premium	**28,794**	**12,854**	**8,417**	**6,069**	**13,136**

Capital Information Technology & Equipment/Capitalized Bond Premium

Overview

Capital Information Technology (IT) provides for the acquisition of general and some dedicated special purpose capital information technologies, and acquisition of special-use capital and IT equipment in support of Bonneville's strategic objectives. This category also includes Bonneville's on-going efforts to facilitate delivery of a highly resilient organization, able to anticipate, withstand and effectively respond to disruptive events affecting it and its partners in the Northwest region. The four main areas of resiliency focus continue to include asset management, emergency management, crisis management, and continuity of operations.

Bonneville continues to move its IT infrastructure to a more efficient architecture. This FY 2017 Budget supports this effort. IT continues to eliminate redundancies in tools and applications, establish an agency-wide IT architecture with standardized IT purchasing criteria, standardize software licensing processes and minimize agency liabilities through stronger contracts, apply continuous improvement practices to IT project management, and implement an agency IT portfolio cost management strategy. The IT estimates in this FY 2017 Budget, under Capital IT and Equipment include all IT functions within the agency except TS grid operations. See the Capital Program – TS section of this budget for additional discussion of grid operations-related IT requirements acquisitions.

Capital equipment provides for the acquisition of general and some dedicated special purchases of capital office furniture and equipment.

Bonneville can incur a bond premium when it repays a U.S. Treasury bond before the due date. When bonds are refinanced and premiums are incurred, the bond premiums can be capitalized. Historically, Bonneville generally has chosen to finance capitalized bond premiums with bonds issued to the U.S. Treasury, as envisioned by the Transmission Act.

Capital IT & Equipment
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
34,344	37,356	28,794

Overview
This category includes enhancements to Bonneville's information technology processes to provide cost effective efficiencies for secure, timely, and accurate information. Investments will enable continued enhancements to Bonneville's enterprise systems that are designed to link key information systems throughout Bonneville and improve business processes. Current efforts include continued functional process improvements in areas not included in the initial development phase. Other investments include acquisition of capital office furniture and equipment, capital automated data processing (ADP) based administrative telecommunications equipment, ADP equipment (hardware), and support of capital software development for certain Bonneville programs.

Continued investments in Capital IT & Equipment assets include:
Continuous Activity (all years)
Capital system developments in support of:

- Corporate IT Projects
- IT Infrastructure Projects
- Power IT Projects
- Transmission Services IT Projects (excluding grid operations)

Capitalized Bond Premium
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
0	0	0

Overview
Continue to assess financial market and when cost-effective, refinance available bonds as prudent.

Activities, Milestones, and Explanation of Changes

FY 2016 Estimate	FY 2017 Estimate	Explanation of Changes FY 2017 vs FY 2016 Estimate
Capital Information Technology & Equipment/Capitalized Bond Premium $37,356,000	**$28,794,000**	**-$8,562,000/22.9%**
Capital Information Technology & Equipment $37,356,000 Milestones: Capital system developments in support of: • Corporate IT Projects • IT Infrastructure Projects • Power IT Projects • Transmission Services IT Projects	**$28,794,000** Milestones: Capital system developments in support of: • Corporate IT Projects • IT Infrastructure Projects • Power IT Projects • Transmission Services IT Projects	**-$8,562,000/22.9%** The decrease reflects an anticipated shift toward using less capital for infrastructure projects and system upgrades. Possible shifting to Software as a Service (SaaS) solutions may also require less capital funding.
Capitalized Bond Premium $0 Milestones: • Bonneville does not expect to refinance any federal bonds with premium in FY 2016.	**$0** Milestones: • Bonneville does not expect to refinance any federal bonds with premium in FY 2017.	**$0/0%** No change in funding.

Power Services – Operating Expense
Funding Schedule by Activity
Funding ($K)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate	FY 2017 vs FY 2016 $	FY 2017 vs FY 2016 %
Power Services - Operating Expenses					
Production	948,520	1,103,239	1,097,286	-5,952	-1%
Associated Projects Costs	414,511	454,869	464,286	9,417	2%
Fish & Wildlife	258,177	267,000	274,000	7,000	3%
Residential Exchange Program	200,265	217,100	217,100	0	0
NW Power & Conservation Council	9,870	11,236	11,446	210	2%
Energy Efficiency & Renewable Resources	74,897	177,636	173,306	-4,329	-2%
Total, Power Services - Operating Expenses	**1,906,240**	**2,231,080**	**2,237,425**	**6,345**	**.3%**

Outyears ($K)

	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Power Services - Operating Expenses					
Production	1,097,286	1,202,507	1,295,414	1,249,570	1,077,360
Associated Projects Costs	464,286	471,846	479,399	498,032	513,942
Fish & Wildlife	274,000	281,000	288,000	295,000	302,000
Residential Exchange Program	217,100	238,600	238,600	251,600	251,600
NW Power & Conservation Council	11,446	11,629	11,812	12,004	12,207
Energy Efficiency & Renewable Resources	173,306	179,120	182,719	186,987	191,380
Total, Power Services - Operating Expenses	**2,237,425**	**2,384,702**	**2,495,944**	**2,493,193**	**2,348,489**

Power Services – Operating Expense

Overview

Production includes all Bonneville non-federal debt service (including Energy Northwest debt service), O&M costs for power system generation resources (including a large nuclear plant, business operations, short- and long-term power purchases[4]), electric utility marketing of power, and oversight of the FCRPS hydroelectric projects and CGS. Bonneville develops products and services to meet the needs of Bonneville's customers and stakeholders, and acquires power as needed.

In FY 2010, Bonneville completed a long-term Resource Program to guide potential future resource acquisitions needed to meet Bonneville's supply obligations. In the event that Bonneville does acquire output from a resource on a long-term basis, Bonneville will modify its budget to reflect the acquisition.

Associated Projects represents funding for operation and maintenance costs for the FCRPS hydroelectric projects, minor additions, improvements and replacements, and liabilities of the Corps and Reclamation hydroelectric projects in the Pacific Northwest, which serve many purposes. All agencies emphasize efficient power production from existing facilities and improvement of the performance and availability of power generating units. Bonneville pays additional financing costs of the FCRPS facilities through its Interest Expense and Capital Transfer budget programs. Bonneville provides funding for the operations and maintenance costs that are part of the USFWS's Lower Snake River Compensation Plan (LSRCP) hatcheries. Bonneville is responsible for annual payments to the Confederated Tribes of the Colville Reservation for their claims concerning their contribution to the production of hydropower by the Grand Coulee Dam in accordance with the Settlement Agreement between the United States and the Colville Tribes (April 1994).

Bonneville's Fish and Wildlife Program provides for extensive protection, mitigation and enhancement of Columbia River Basin fish and wildlife adversely affected by the development and operation of the FCRPS. Bonneville satisfies its fish and wildlife responsibilities by funding projects and activities designed to be consistent with the Program under the Northwest Power Act. Through the Program, Bonneville also implements measures to aid in the protection of fish in the Columbia River and its tributaries, both listed as threatened or endangered as well as unlisted, under the ESA (see ESA discussion in the Power Capital Overview section).

Bonneville's mitigation expenditures will focus on activities that benefit Columbia River Basin fish and wildlife resources, following priorities established through ESA consultations, agreements with resource managers, and the Program, including actions that:

- increase survival of ESA-listed and non-listed fish at FCRPS dams and reservoirs;
- increase survival of ESA-listed and non-listed fish throughout their life cycle by protecting and enhancing important habitat areas;
- protect and enhance important wildlife habitat;
- use of hatcheries to contribute to conservation and recovery of ESA-listed and non-listed fish;
- provide offsite mitigation projects and habitat, passage, and other improvements that address factors limiting improvements of target species; and
- support a focused and well-coordinated research, monitoring, and evaluation program.

In order to address the *in lieu* provision of the Northwest Power Act, which prohibits Bonneville from funding mitigation that other entities are authorized or required to undertake, Bonneville continues its ongoing work with the Council and the regional fish and wildlife managers, customers, and Tribes to review projects to ensure ratepayers fund appropriate mitigation. For example, Bonneville established a cost sharing Memorandum of Understanding (MOU) with the U.S. Forest Service in 2005, and renewed it in 2010, that requires a programmatic 30 percent cost share for fish mitigation projects

[4] Including expenses associated with the use of power financial instruments to hedge Bonneville's exposure to market price risk and certain index sales contract provisions as permitted by Bonneville's internal power transacting risk management guidance.

funded by Bonneville on U.S. Forest Service lands. Bonneville continues to operate in a cooperative manner with the U.S. Forest Service.

The Energy and Water Development Appropriations Act of 1996 added section 4(h)(10)(D) to the Northwest Power Act, directing the Council to appoint an ISRP "to review a sufficient number of projects" proposed to be funded through Bonneville's annual fish and wildlife budget "to adequately ensure that the list of prioritized projects recommended is consistent with the Program." The Northwest Power Act further states that "in making its recommendations to Bonneville, the Council shall consider the impact of ocean conditions on fish and wildlife populations and shall determine whether the projects employ cost effective measures to achieve program objectives." Today, most mitigation projects funded by Bonneville receive ISRP review as part of the Council recommendation process. The Council has shifted to a multi-year project review cycle during which the ISRP reviews categories of projects grouped together; e.g., all wildlife projects were recently reviewed simultaneously.

The Council's major activities include the periodic preparation of a Northwest Conservation and Electric Power Plan (a 20-year electric energy demand and resources forecast and conservation program – known as the Power Plan) and the Fish and Wildlife Program. The Northwest Power Act directs that expenses of the Council, subject to certain limits based on forecasted Bonneville power sales, shall be included in Bonneville's annual budget to Congress. The cost of funding the Council is recovered through Bonneville's power rates.

Bonneville's Energy Efficiency program acquires conservation resources consistent with the Council's Power Plan and acts as a catalyst for energy efficiency actions in the region. Such actions will: 1) meet energy efficiency targets; 2) achieve a least cost resource mix; 3) lessen the cost impacts of power purchases; 4) avoid the costs of ramping programs and infrastructure up and down; 5) extend the value of the FCRPS to customers; and 6) build the region's resource portfolio with energy efficiency. Bonneville is also exploring how best to integrate demand-side management, distributed generation, and other leading edge technologies (e.g., Energy Web and Smart Grid applications) into its generation and transmission planning processes.

Starting in FY 2016, Bonneville's Energy Efficiency program will be expensed. This program offers several ways for customer utilities to participate in energy efficiency. Program components include: (1) standard offer efficiency measures and custom projects, which result in customer proposals to conserve energy through such programs as residential weatherization, commercial lighting, Heating, Ventilation, and Air Conditioning (HVAC), industrial processes and lighting, irrigated agriculture, etc.; (2) third party delivery programs, such as Simple Steps Smart Savings, Energy Smart Industrial, and Green Motors programs; and, (3) programs to help regional federal installations reduce energy use, including federal hatcheries and irrigation districts, and to support the Corps and Reclamation in their efforts to reduce energy use.

Bonneville's Energy Efficiency budgets reflect a need to meet aggressive targets from the Council's 6th Power Plan and anticipated targets in the 7th Power Plan. Specifically, Bonneville's energy efficiency targets increased from about 280 aMW under the Council's 5th Power Plan (FYs 2005-2009) to 504 aMW under its 6th Power Plan (FYs 2010-2014). The 504 aMW reflects conservation that was expected to be achievable in the service territories of Bonneville's preference customers. In FY 2014, Bonneville exceeded the five-year target and FY 2015 performance continued on that trajectory, exceeding the 117 aMW that was the target for FY 2014 and FY 2015 combined. Because the 7th Power Plan draft is not expected to be released until early 2016, Bonneville has determined its level of energy efficiency performance and associated budget based on the 6th Power Plan annual savings targets, which call for an incremental 400 aMW of energy efficiency between 2015 and 2017. In meeting its energy efficiency goals Bonneville may employ resource acquisition agreements, as authorized by Northwest Power Act section 6, and customer self-funded conservation.

The Residential Exchange Program (REP) was created by the Northwest Power Act to extend the benefits of low-cost federal power to the residential and farm customers of Pacific Northwest electric utilities that have high average system costs. Currently, the region's six investor-owned utilities (IOUs) and two of the region's consumer-owned utilities are actively participating in the REP. Payments under the REP are made to individual IOUs based on the difference between Bonneville's utility-specific Priority Firm (PF) Exchange rates and each utility's average system cost (ASC), times a utility's residential and farm loads. ASCs are determined in accordance with the 2008 Average System Cost Methodology (ASCM).

Participating utility ASCs are established in a public process that occurs prior to and during Bonneville's power rate case. Bonneville's utility-specific PF Exchange rates are determined each rate period. As described below, Bonneville and regional parties reached a settlement of the REP in 2011 in which the total amount of REP benefits available to the IOUs was established through 2028. Payments to the IOUs are made monthly based on historical invoiced exchange loads.

Over the past decade, regional parties have filed multiple lawsuits challenging Bonneville's implementation of the REP. These lawsuits were consolidated into four cases that were stayed before the U.S. Court of Appeals for the Ninth Circuit. On July 26, 2011, Bonneville adopted a regionally supported settlement, referred to as the 2012 REP Settlement. Under the settlement, the region's six IOUs will receive about $4.1 billion in REP payments over the 17-year term of the settlement, beginning at $182.1 million in FY 2012, and increasing to $286.1 million in FY 2028. In addition to this settlement, Bonneville has reached related REP settlements with two consumer-owned utilities. A single challenge to the 2012 REP Settlement was dismissed by the U.S. Court of Appeals for the Ninth Circuit in October of 2013.

Explanation of Changes

Bonneville's budget includes $2,237 million in FY 2017 for Power Services operating expenses, which is a 0.3 percent increase over the FY 2016 forecasted level. The increase reflects continuing emphasis on operation and maintenance of hydro generation projects on the FCRPS.

The FY 2017 budget decreases the level for Production (-$5.9 million), increases the level for Associated Projects (+$9.4 million), Fish & Wildlife (+$7.0 million), Planning Council (+$210,000), and decreases the level for Energy Efficiency & Renewable Resources (-$4.3 million). There is no change in funding for Residential Exchange.

Production
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
948,520	1,103,239	1,097,286

Overview

Power Purchases: Includes purchased power to cover power supply obligations as well as balancing loads with generation from the hydro system. These purchases can be made in the form of long-term purchases to meet supply obligations based on long-term planning requirements or they can be made within the year due to the monthly shape of the loads and the monthly shape of the hydro electric generation. Also, purchases can be made within the month and within the day to fill shortages due to fluctuations in the hydro system and load changes.

Power Scheduling/Marketing: Schedule and market (buy/sell) electric energy with Bonneville customers and the Pacific Northwest's interconnected utilities. Scheduling includes Power Services' implementation of physical and memo power schedules and associated transmission schedules, implementation of Electronic Tagging (ETag) in accordance with NERC and in accordance with FERC, and implementation of electronic scheduling.

Columbia Generating Station (CGS): Bonneville has acquired full lifetime project capability of CGS. CGS is on a 24-month fuel and outage cycle. A maintenance and refueling outage occurred in the spring of 2015.

Continued investments in Production include:
Continuous Activity (all years)

- Provide oversight of all power supply contracts and related projects from which Bonneville purchases generation capability to ensure that all Bonneville approval rights are protected; coordinate, communicate, and administer agreements, issues, and programs between Bonneville and the project owners.
- Continue to provide wind resource integration services for customer wind generation.
- Power Purchases. Power expenditures could increase somewhat due to the implementation of the Oversupply Management Protocol.
- Power Scheduling/Marketing.
- Continue to provide oversight of all contracts signed to date. Pursue cost-effective means to mitigate capacity demands associated with interconnecting large amounts of wind into the Bonneville system. Pursue acquisition of additional cost-effective renewable generation to meet load growth. Continue to provide oversight on the wind resource integration services currently purchased by public power customers and offer additional renewable resource shaping services to such customers using wind generation to serve their load.

Associated Projects
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
414,511	454,869	464,286

Overview
Support FCRPS project costs and work to strengthen interagency and regional relationships to improve project performance, supporting functions, and to better understand project resource requirements and costs. This helps to maintain FCRPS reliability and system performance, as well as to attain Bonneville's strategic business objectives.

Continued investments in Associated Projects include:
Continuous Activity (all years)
Bureau of Reclamation:
- Continue direct funding Reclamation O&M power activities.

Corps of Engineers:
- Continue direct funding Corps O&M power activities.

Fish & Wildlife
($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
258,177	267,000	274,000

Overview
Bonneville implements a mature fish and wildlife mitigation program based on recommendations made by the region's fish and wildlife management agencies and tribes to the Council. Several recent Council reviews have made additional fish and wildlife project recommendations to Bonneville. Bonneville, in coordination with the Council, reviews new and on-going projects for consistency with the Program. Bonneville reviews and resets project-specific funding commitments annually, including projects under the FCRPS BiOps and other agreements. Bonneville informs its funding decisions with the management objectives and priorities in the Program (including ISRP reviews), and the Accords as it integrates their implementation with actions necessary to fulfill ESA responsibilities consistent with the applicable BiOps. Regular coordination on implementation priorities continues among Bonneville, the Council, federal resource management agencies, states, Tribes, and others.

Continued investments in Fish &Wildlife include:
Continuous Activity (all years)

- Anadromous Fish: Continue implementing both ongoing and new projects that support ESA-listed species and other measures called for under the 2008 FCRPS BiOp and Supplemental FCRPS BiOps issued in 2010 and 2014, the Fish Accords, the Washington Estuary Agreement, the Kalispel Agreement, and the Willamette and Southern Idaho agreements. Prioritize projects that address the factors that contribute most to mitigation success and that fulfill Bonneville's responsibility for mitigating the impacts from the FCRPS. Implement and develop activities that protect and enhance tributary and estuary habitat; improve mainstream habitat; reduce potentially harmful hatchery practices on ESA-listed populations; and contribute to sustainable fisheries.
- Resident Fish: Implement activities to mitigate the impacts of the FCRPS on lamprey, sturgeon and bull trout and, and promote the reproduction and recruitment of Kootenai River white sturgeon. These activities have been selected in response to the USFWS's 2000 bull trout and 2006 Libby BiOp, the Program, and the Fish Accords.
- Continue mitigation using resident fish to offset anadromous fish losses (substitution); mitigate for reservoir power operation impacts to resident fish and wildlife by seeking projects that provide dual benefits, i.e., benefits to both. Those resident fish habitat acquisition projects that meet Bonneville's Capitalization Policy will be funded under the capital portion of Bonneville's Fish and Wildlife budget.
- Wildlife: Use existing Bonneville policies to continue the current effort to mitigate wildlife in a manner consistent with the Program and fulfill commitments in wildlife agreements such as the Kalispel Agreement, Willamette Wildlife Agreement, and Southern Idaho Wildlife Agreement. Those wildlife projects that meet Bonneville's Capitalization Policy will be funded under the capital portion of Bonneville's Fish and Wildlife budget and credited according to Bonneville's crediting policy and applicable mitigation contracts.

Residential Exchange, Northwest Power and Conservation Council, and Energy Efficiency & Renewable Resources

($K)

FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
285,032	405,972	401,852

Overview

Residential Exchange Program (REP)

- Includes forecasted REP benefits based on the 2012 REP Settlement.

Northwest Power and Conservation Council

- Continue support of the Council activities, as directed under the Northwest Power Act, including regional power plan development and maintenance, and fish and wildlife program activities.

Energy Efficiency & Renewable Resources

- Continue close-out of the legacy conservation resource acquisition contracts, which support Bonneville's contractual obligation to serve customer loads.

- Provide incentives to help utilities acquire Public Power's share of regional energy efficiency targets.

- Deliver regional energy efficiency programs, such as Simple Steps Smart Savings, Energy Smart Industrial, and Green Motors, to acquire energy efficiency throughout the region.

- Provide credible, unbiased information, and technical and financial support to energy efficiency purposes. Bonneville has a statutory responsibility to encourage and support the development of conservation in the Pacific Northwest. Bonneville is participating with other regional entities to support market transformation, low income energy efficiency, and program development activities that meet the needs of Bonneville customers and create business opportunities for the private sector in the Pacific Northwest. Towards that end, Bonneville has been helping create a delivery infrastructure to ensure conservation savings are installed efficiently and effectively throughout the region and that energy efficiency savings can be counted on to be reliable.

- Continue to purchase the output from renewable resources such as wind and solar.

Activities, Milestones, and Explanation of Changes

FY 2016 Estimate	FY 2017 Estimate	Explanation of Changes FY 2017 vs FY 2016 Estimate
Power Services - Operating Expense **$2,231,080,000**	**$2,237,425,000**	**+$6,345,000/.03%**
Production $1,103,239,000 Milestones: • Continue to provide oversight of all signed contracts. • Continue to provide wind resource integration services for customer wind generation.	**$1,097,286,000** Milestones: • Continue to provide oversight of all signed contracts. • Continue to provide wind resource integration services for customer wind generation.	**-$5,952,000/-0.5%** The decrease reflects lower power purchase costs.
Associated Project Costs $454,869,000 Milestones: • Continue direct funding of Corps and Reclamation O&M power activities.	**$464,286,000** Milestones: • Continue direct funding of Corps and Reclamation O&M power activities.	**+$9,417,000/+2.1%** The increase reflects changes to security, biological opinion requirements, non-routine extraordinary maintenance, WECC/NERC compliance activities, and improvements, replacements, and minor additions at the projects.
Fish & Wildlife Costs $267,000,000 Milestones: • Continue implementing both ongoing and new projects that support ESA-listed species and other measures called for under the 2008, 2010, and 2014 FCRPS BiOps, the Fish Accords, the Washington Estuary Agreement, the Kalispel Agreement, the Southern Idaho Agreement, and the Willamette Agreement.	**$274,000,000** Milestones: • Continue implementing both ongoing and new projects that support ESA-listed species and other measures called for under the 2008, 2010, and 2014 FCRPS BiOps, the Fish Accords, the Washington Estuary Agreement, the Kalispel Agreement, the Willamette Agreement, and the Southern Idaho Agreement.	**+$7,000,000/+2.6%** The increase reflects funding associated with the Biological Opinions, Fish Accord commitments, and Northwest Power Act activities.

FY 2016 Estimate	FY 2017 Estimate	Explanation of Changes FY 2017 vs FY 2016 Estimate
Residential Exchange Program $217,100,000 Milestones: • Continue to provide REP benefits.	**$217,100,000** Milestones: • Continue to provide REP benefits.	**+$0/0%** No change in funding.
NW Power & Conservation Council $11,236,000 Milestones: • Continue support of the Council activities, as directed under the Northwest Power Act, including regional power plan development and maintenance, and fish and wildlife program activities.	**$11,446,000** Milestones: • Continue support of the Council activities, as directed under the Northwest Power Act, including regional power plan development and maintenance, and fish and wildlife program activities.	**+$210,000/1.9%** The increase reflects continuing emphasis on the NW Power and Conservation Council.
Energy Efficiency & Renewable Resources **$177,636,000** Milestones: • Continue close-out of the legacy conservation resource acquisition contracts, which support Bonneville's contractual obligation to serve customer loads. • Continue to purchase the output from renewable resources such as wind and solar. • Continue to support utility incentive programs. • Continue to support regional energy efficiency programs. • Continue supporting energy efficiency at direct serve federal agencies.	**$173,306,000** Milestones: • Continue close-out of the legacy conservation resource acquisition contracts, which support Bonneville's contractual obligation to serve customer loads. • Continue to purchase the output from renewable resources such as wind and solar. • Continue to support utility incentive programs. • Continue to support regional energy efficiency programs. • Continue supporting energy efficiency at direct serve federal agencies.	**-$4,329,000/-2.4%** Even though there is a small decrease, there is a continuing emphasis on the energy efficiency program consistent with the Power Plan and increased Renewable Resource acquisition costs.

Transmission Services – Operating Expense
Funding Schedule by Activity
Funding ($K)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate	FY 2017 vs FY 2016 $	FY 2017 vs FY 2016 %
Transmission Services - Operating Expense					
Engineering	103,892	81,574	82,284	710	1%
Operations	155,928	179,207	185,868	6,661	4%
Maintenance	193,645	188,021	190,287	2,266	1%
Total, Transmission Services - Operating Expense	**453,465**	**448,803**	**458,439**	**9,637**	**2%**

Outyears ($K)

	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Transmission Services - Operating Expense					
Engineering	82,284	84,036	85,247	86,512	87,834
Operations	185,868	186,168	189,943	193,854	197,906
Maintenance	190,287	195,238	198,956	202,824	206,848
Total, Transmission Services - Operating Expense	**458,439**	**465,441**	**474,146**	**483,191**	**492,588**

Transmission Services – Operating Expense

Overview

This activity provides for the transmission system services of engineering, operations, and maintenance for Bonneville's electric transmission system, and the associated power system control and communication facilities. Primary strategies of this program are: 1) maintain the safety and reliability of the transmission system; 2) increase the focus on meeting customers' needs; 3) optimize the transmission system; 4) provide open and non-discriminatory transmission access; and 5) improve Bonneville's cost effectiveness.

Explanation of Changes

Bonneville's budget includes $458.4 million in FY 2017 for TS expense which is a two percent increase over the FY 2016 forecasted level. The increase reflects continuing operation and maintenance of Bonneville's transmission assets.

The FY 2017 budget increases the levels for Engineering (+$710,000), Operations (+$6.7 million), and Maintenance (+$2.3 million)

Engineering ($K)		
FY 2015 Actual	**FY 2016 Estimate**	**FY 2017 Estimate**
103,892	81,574	82,284

Overview

Continue efforts to identify best methods for improving system reliability and maintenance practices, and continue cost reduction efforts by identifying opportunities for low-cost reinforcement and voltage support of the existing transmission system.

Continued investments in Engineering include:

Continuous Activity (all years)

- Asset Management: Continue deploying the Asset Management approach to sustain the existing assets and expanding the system to meet Agency objectives using leading practices as guidance for improving Asset Management.

- Research and Development (R&D): Conduct research focused on technologies related to business challenges Bonneville faces including reliability, energy efficiency, and integration of renewable energy resources. Technologies of interest are identified in Bonneville's Technology Roadmaps. A portfolio of research is selected every year through Bonneville's Portfolio Decision Framework.

- Technical Support: Provide technical support activities, such as transmission system planning and studies to optimize portions of the system. Provide support for non-wires solutions studies and pilot projects.

- Capital-to-Expense Adjustments: Conduct annual analysis of Bonneville's outstanding capital work orders to assess whether they should be expensed. As obsolete inventory is identified and disposed of, it is expensed.

- Regulatory Fees: WECC dues and loop flow payments, Department of Commerce/National Telecommunications and Information Administration licensing costs for radio frequencies, DOE Radio Spectrum staff and contractor support, and NERC Critical Infrastructure Protection (CIP) compliance program costs. Includes membership in ColumbiaGrid, a transmission planning organization in the region.

- Reimbursable Transactions: Enter into written agreements with federal and non-federal entities that have work or services to be performed by Bonneville staff at the expense of the benefiting entities. The projects must be beneficial, under agreed upon criteria, to Bonneville operations and to the federal or non-federal entity involved or otherwise be aligned with or supportive of Bonneville's strategic objectives. Additionally, these activities generally contribute to more efficient or reliable construction of the federal transmission system or otherwise enhance electric service to the region.

- Leased and Other Costs: Includes leases, lease purchases, and other costs of financing transmission, delivery, and voltage support facilities when such arrangements are operationally feasible and cost effective to deliver power. Leases and lease purchases enable Bonneville to continue to invest in infrastructure to support a safe and reliable system for the transmission of power. Other costs included are the accrued interest costs associated with Large Generator Interconnection Agreements (LGIA).

Operations ($K)		
FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
155,928	179,207	185,868

Overview

Substation Operations: Perform operations functions necessary to provide electric service to customers and to protect the federal investment in electric equipment and other facilities. Includes equipment adjustments, switching lines and equipment during emergencies or maintenance, isolating damaged equipment, restoring service to customers, inspecting equipment, reading meters, etc.

Power System Dispatching and Supporting Functions: Perform central dispatching, control, and monitoring of the electric operation of the federal transmission system. Also includes load, frequency, and voltage control of federal generating plants, and coordinating long- and short-term outages of system equipment. In addition, provides technical engineering support of dispatching function and provides all technical and systems support for Dittmer Control Center (DCC) and Munro Control Center (MCC).

Marketing and Sales: Provide management and direction of transmission rates, and provide business strategy in marketing of transmission and ancillary products and services of Transmission Services. Involve customers and constituents in the process of product and rate development. Maintain accurate and complete historical records of current and past legacy transmission agreements. Provide guidance for current and future transmission contract negotiations. Provide financial analysis of market strategies. Monitor and report on the financial health of Transmission Services. Support cost management by effective reporting and analysis of current expenditures. Ensure official budget submittals reflect current management financial strategies and adequately fund transmission programs.

Transmission Scheduling: Provide non-discriminatory, open access to the Bonneville transmission system consistent with Bonneville's Open Access Transmission Tariff (OATT). Schedule transmission capacity to eligible Bonneville customers, which include customers acquiring services under Use of Facilities (UFT), Formula Power Transmission (FPT), Integration of Resources (IR), and Part II or Part III of the OATT. Manage the reservations and scheduling of all transmission services associated with the OATT. Update practices, policies, and commercial systems to accommodate a large diversity of resources, including wind.

Continuous Activity (all years):

- Continue to operate within parameters of NERC and WECC.
- Continue support of increased compliance activities related to the reliability of the transmission system, including cyber security.
- Continue developing facilities, policies, procedures, and implementing systems to support integrating the diversity of resources, including wind, into the transmission grid
- Continue preparation for increased complexity of transmission scheduling, power system operations, and dispatching, including congestion management and outage scheduling.
- Continue developing the Dittmer Scheduling Center and Munro Scheduling Center facilities to support continuous real time scheduling operations from both facilities.
- Continue developing a long-term approach to optimize transmission availability through streamlined, cost-effective, and sustainable processes.
- Continue to address succession planning issues across key functions.
- Continue development and implementation of business systems and tools.

Maintenance ($K)		
FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
193,645	188,021	190,287

Overview

In all aspects of maintenance, Bonneville is continuing the use of Reliability Centered Maintenance (RCM) practices. The use of RCM practices is focused on improving system reliability, increasing availability, and meeting new and existing compliance regulations at lowest lifecycle costs. In addition Bonneville is deploying Asset Management to optimize maintain/replace decision making. Maintenance costs are expected to increase as Bonneville addresses the aging transmission system, meeting Reliability Standards, including Vegetation Management, and environmental constraints associated with construction, enhancement, and maintenance of the system. The Bonneville transmission system encompasses 15,156 circuit miles on over 11,860 right-of-way miles (many of these miles are through rugged, inaccessible terrain).

Continued investments in Maintenance include:

Continuous Activity (all years)

- Continue to improve performance to meet System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) targets.
- Continue refining processes and procedures for monitoring and tracking compliance activities related to the reliability of the transmission system.
- Continue to improve system availability performance through new maintenance procedures and work practices.
- Continue to develop and implement work practices and procedures for implementation of a new specialty crew using bare-handing live line practices for maintenance of high-voltage transmission lines.
- Continue increased emphasis on replacement of line hardware (life extension programs for insulators, connectors, dampers & fiber optic cable hardware).
- Continue to prepare for the impact of an expected high attrition rate among Bonneville's aging workforce by recruiting apprentices and replacements for critical minimum crew size workload positions.
- Increase outage-scheduling planning and coordination to increase customer satisfaction and system availability.
- Maintain vegetation management levels to ensure system reliability.
- Continue access road work to provide reliable access to facilities and ensure environmental compliance.
- Continue improving environmental stewardship.

Transmission Line Maintenance: Maintain and repair 15,156 circuit miles of high voltage transmission lines, of which over 7,617 km (4,734 circuit miles) are 500 kV transmission extra-high voltage (EHV). Maintenance of EHV lines is two and one-half times more labor-intensive than maintenance of lower transmission voltages, although more efficient in transmission of power. This responsibility includes maintaining transmission rights-of-way to ensure system reliability, safety, and environmental compliance. Adopt work practices that improve system availability, reliability, and compliance.

Right-of-Way Maintenance: Maintain over 11,860 of Bonneville's right-of-way miles. This responsibility includes vegetation management, danger tree management, and access road maintenance to ensure system reliability, safety, and environmental compliance. Adopt procedures and processes that improve system availability, reliability, environmental compliance, and reliability compliance. Continue to deploy new technologies such as LiDAR (Light Detection and Ranging) to reliably and cost-effectively manage vegetation.

Substation Maintenance: Maintain and repair the transmission system power equipment located in Bonneville's 259 substations. Work includes inspections, diagnostic testing, and predictive and condition-based maintenance.

System Protection Maintenance: Maintain relaying metering and remedial action scheme equipment used to control and protect the electrical transmission system and to meter energy transfers for the purpose of revenue billing. Additionally,

field-engineering services provide technical advice and assure the correct operation of power system relaying and special control systems used to support interregional energy transmission capabilities.

Power System Control Maintenance: Test, repair, and provide field engineering support of Bonneville's highly complex equipment, communications, and control systems, including seven major microwave systems, fiber optic systems, and other critical communications and control equipment that support the power system.

Non-Electric Plant Maintenance: Maintain and manage Bonneville's non-electric facilities. Includes site, building, and building utility maintenance; custodial services; station utility; and other maintenance service activities, as well as, facilities asset management on Bonneville-owned or Bonneville-leased non-electric facilities.

Maintenance Standards and Engineering: Establish, monitor, and update system maintenance standards, policies, and procedures, and review and update long-range plans for maintenance of the electric power transmission system.

Activities, Milestones, and Explanation of Changes

FY 2016 Estimate	FY 2017 Estimate	Explanation of Changes FY 2017 vs FY 2016 Estimate
Transmission Services - Operating Expense **$448,803,000**	**$458,439,000**	**+$9,637,000/2.0%**
Engineering $81,574,000 Milestones: • Continue efforts to identify best methods for improving system reliability and maintenance practices. • Continue cost reduction efforts by identifying opportunities for low-cost reinforcement and voltage support of the existing transmission system.	**$82,284,000** Milestones: • Continue efforts to identify best methods for improving system reliability and maintenance practices. • Continue cost reduction efforts by identifying opportunities for low-cost reinforcement and voltage support of the existing transmission system.	**+$710,000/+0.9%** The increase reflects emphasis on system reliability standards compliance and research and development.
Operations $179,207,000 Milestones: • Continue to operate within parameters of NERC and WECC. • Continue support of increased compliance activities related to the reliability of the transmission system including cyber security.	**$185,868,000** Milestones: • Continue to operate within parameters of NERC and WECC. • Continue support of increased compliance activities related to the reliability of the transmission system including cyber security.	**+$6,661,000/+3.7%** The increase reflects continued emphasis on reliability compliance activities, wind integration activities, security, and control center systems support.
Maintenance $188,021,000 Milestones: • Continue to improve performance to meet System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) targets.	**$190,287,000** Milestones: • Continue to improve performance to meet System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) targets.	**+$2,266,000/+1.2%** The increase reflects a small reduction in the implementation of facilities asset management plans, continued implementation of live-line crew, NERC/WECC compliance activities related to land rights and vegetation management, continuing maintenance program activities, including system protection, right-of-way, line maintenance, and performance improvements.

Interest, Pension, and Post-retirement Benefits
Operating Expense
Funding Schedule by Activity
Funding ($K)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate	FY 2017 vs FY 2016	
				$	%
Interest, Pension, and Post-retirement Benefits					
BPA Bond Interest (Net)	132,324	94,631	118,915	24,285	25.7%
BPA Appropriation Interest	14,482	14,386	8,954	-5,432	-37.8%
Corps of Engineers Appropriation Interest	145,645	136,302	136,223	-79	-.1%
Lower Snake River Comp Plan Interest	16,534	16,534	16,534	0	0%
Bureau of Reclamation Appropriation Interest	40,456	36,921	33,294	-3,627	-9.8%
Bond Premiums Paid/Discounts (not capitalized)	0	0	0	0	0%
Subtotal, Interest – Operating Expense	**349,441**	**298,773**	**313,920**	**15,147**	**5.1%**
Additional Pension, and Post-retirement Benefits	37,638	38,286	39,226	940	2.5%
Total, Interest, Pension, and Post-retirement Benefits	**387,079**	**337,059**	**353,146**	**16,087**	**4.8%**

Outyears ($K)

	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Interest, Pension, and Post-retirement Benefits					
BPA Bond Interest (Net)	118,915	167,034	195,144	213,998	240,293
BPA Appropriation Interest	8,954	4,940	0	0	0
Corps of Engineers Appropriation Interest	136,223	136,841	135,931	137,425	137,672
Lower Snake River Comp Plan Interest	16,534	16,534	16,534	16,534	16,534
Bureau of Reclamation Appropriation Interest	33,294	33,294	29,697	29,697	29,697
Bond Premiums Paid/Discounts (not capitalized)	0	0	0	0	0
Subtotal, Interest – Operating Expense	**313,920**	**358,643**	**377,306**	**397,654**	**424,196**
Additional Pension, and Post-retirement Benefits	39,226	39,814	40,412	41,018	41,633
Total, Interest, Pension, and Post-retirement Benefits	**353,146**	**398,457**	**417,718**	**438,672**	**465,829**

Interest, Pension and Post-retirement Benefits
Operating Expense

Overview

Interest expense provides for interest due on bonds issued to the U.S. Treasury and appropriations repayment responsibilities. The appropriation repayments relate to capital investment in FCRPS hydroelectric generating and transmission facilities of Bonneville, and the Corps and Reclamation. Investments were financed by Congressional appropriations and Bonneville borrowings from the U.S. Treasury. Bonneville repays these amounts through revenue raised in its power sales and transmission services revenues.

Since receiving U.S. Treasury borrowing authority in 1974 under the Transmission Act, all Bonneville U.S. Treasury borrowing has been at market rates. As of October 1, 1996, all of Bonneville's repayment obligations on FCRPS appropriated investment (Corps and Reclamation FCRPS investment and Bonneville investment financed with appropriations prior to the Transmission Act that were unpaid as of September 30, 1996) were restructured and assigned new current-market interest rates. The Bonneville Appropriations Refinancing Act of 1996 (Refinancing Act) called for re-setting (reducing) the unpaid principal of FCRPS appropriations and reassigning (increasing) interest rates. New principal amounts were established as of the beginning of FY 1997 at the present value of the principal and annual interest payments Bonneville would make to the U.S. Treasury for these obligations in the absence of the legislation, plus $100.0 million. The new principal amounts were assigned prevailing market interest rates as of October 1, 1996. Bonneville's outstanding appropriations repayment obligations at the end of FY 1996 were $6.6 billion with a weighted average interest rate of 3.4 percent. The refinancing reduced the principal amount to $4.1 billion with a weighted average interest rate of 7.1 percent. Implementation of the refinancing took place in 1997 after audited actual financial data were available. Pursuant to the legislation, Bonneville submitted its calculations and interest rate assignments implementing the Refinancing Act to the U.S. Treasury for its review and approval. The U.S. Treasury approved the implementation calculations in July 1997. The Refinancing Act also calls for all future FCRPS appropriations to be assigned prevailing U.S. Treasury yield curve interest rates. Bonneville's outstanding appropriations may be prepaid prior to their stated maturities.

Interest estimates are a function of costs of U.S. Treasury borrowing to Bonneville, repayment status of outstanding FCRPS investments, and projected additions to FCRPS plant in service. These estimates may change over time depending on forecasted market conditions. The interest cost estimates include the impact of Bonneville's appropriation refinancing legislation.

Federal employees associated with the operation of the FCRPS participate in either the Civil Service Retirement System or the Federal Employees Retirement System. Employees may also participate in the Federal Employees Health and Benefit Program and the Federal Employee Group Life Insurance Program. All such postretirement systems and programs are sponsored by the Office of Personnel Management; therefore, Bonneville does not record any accumulated plan assets or liabilities related to the administration of such programs. Bonneville makes additional annual contributions to the General Fund of the U.S. Treasury (receipt account 892889) related to the Federal post-retirement benefit programs provided to employees associated with the operation of the FCRPS. These payments were begun with the FY 1998 Administration's budget which assumed Bonneville would prospectively cover the unfunded liability that accrues in fiscal years after FY 1997 of the Civil Service Retirement and Disability Fund (Disability Fund), the Employees Health Benefits Fund (Health Fund), and the Employees Life Insurance Fund (Insurance Fund) that it had not covered prior to FY 1998. Bonneville's additional annual contributions include amounts relating to pension and post-retirement benefits for Bonneville and the power-related portion of the Corps and Reclamation projects.

Capital Transfers
Funding Schedule by Activity
Funding ($K)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate	FY 2017 vs FY 2016 $	FY 2017 vs FY 2016 %
Capital Transfers					
BPA Bond Amortization[1]	212,300	30,000	76,100	46,100	153.7%
Reclamation Appropriation Amortization	49,439	50,728	0	-50,728	-100%
BPA Appropriation Amortization	6,000	74,910	55,489	-29,321	-25.9%
Corps Appropriation Amortization	181,022	33,469	74,279	40,810	121.9%
Total, Capital Transfers	**448,761**	**189,107**	**205,868**	**16,761**	**8.9%**

Outyears ($K)

	FY 2017 Estimate	FY 2018 Estimate	FY 2019 Estimate	FY 2020 Estimate	FY 2021 Estimate
Capital Transfers					
BPA Bond Amortization[1]	76,100	47,862	559,419	533,548	473,598
Reclamation Appropriation Amortization	0	50,295	0	0	0
BPA Appropriation Amortization	55,489	68,458	0	0	0
Corps Appropriation Amortization	74,279	62,176	4,922	56	44,146
Total, Capital Transfers	**205,868**	**228,791**	**564,341**	**533,603**	**517,744**

Overview

This activity conveys funds to the U.S. Treasury for repayment of certain FCRPS costs not included in the Associated Project Costs budget. Since capital transfers are cash transactions, they are not considered budget obligations.

[1] Bonneville "Bond(s)" in this FY 2017 Budget refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13(a) of the Transmission Act (P.L. 93-454), which defines Bonneville bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

Bonneville Power Administration
Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program.

	FY 2015	FY 2016	FY 2017
Performance Goal (Measure)	**BPA Hydropower Generation Efficiency Performance** - Achieve 97.5% Heavy-Load-Hour Availability (HLHA) through efficient performance of Federal hydro-system processes and assets, including joint efforts of BPA, Army Corps of Engineers, and Bureau of Reclamation. HLHA is actual machine capacity available during heavy-load hours (0700-2200 Monday-Saturday), divided by planned available capacity during heavy-load hours.		
Target	≥ 97.5%	≥ 97.5%	≥ 97.5%
Result	Target Met: 100.6%	Not yet available	Not yet available
Endpoint Target	Maintain at least 97.5% Heavy-Load-Hour Availability.		

	FY 2015	FY 2016	FY 2017
Performance Goal (Measure)	**BPA Repayment of Federal Power Investment Performance -** Meet planned annual repayment of principal on Federal power investments.		
Target	≥ 100%	≥ 100%	≥ 100%
Result	Target Met: 100%	Not yet available	Not yet available
Endpoint Target	Continue to meet planned annual repayment of principal.		

	FY 2015	FY 2016	FY2016
Performance Goal (Measure)	**BPA System Reliability Performance - NERC Rating** - Attain average North American Reliability Council (NERC) compliance ratings for NERC Control Performance Standard 1 (CPS1) which measures generation/load balance on one-minute intervals (rating > or = 100%).		
Target	CPS1 ≥ 100%	CPS1 ≥ 100%	CPS1 ≥ 100%
Result	Target Met:139.91%	Not yet available	Not yet available
Endpoint Target	Maintain CPS1 score of >= 100%.		

Additional Tables

BONNEVILLE POWER ADMINISTRATION
TOTAL OBLIGATIONS/OUTLAYS
Current Services
(in millions of dollars)

BP-1 SUMMARY[1/3/]	FISCAL YEAR 2015		2016		2017		2018	2019	2020	2021
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
1 Residential Exchange Program	200	200	217	217	217	217	239	239	252	252
2 Power Services [2/]	1,364	1,364	1,558	1,558	1,562	1,562	1,674	1,775	1,748	1,591
3 Transmission Services	915	915	1,149	1,149	1,103	1,103	911	919	900	799
4 Conservation & Energy Efficiency	162	162	178	178	173	173	179	183	187	191
5 Fish & Wildlife	280	280	307	307	320	320	300	323	330	336
6 Interest/ Pension [4/]	387	387	337	337	353	353	398	418	439	466
7 Associated Project Cost - Capital	43	43	241	241	270	270	282	314	333	348
8 Capital Equipment	34	34	37	37	29	29	11	6	4	11
9 Planning Council	10	10	11	11	11	11	12	12	12	12
10 Misc. Accounting Adjs.	0	0	0	0	0	0	0	0	0	0
11 Projects Funded in Advance	390	390	30	30	30	30	30	50	50	50
12 Capitalized Bond Premiums	0	0	0	0	0	0	2	2	2	2
13 **TOTAL OBLIGATIONS/ OUTLAYS [3/]**	**3,785**	**3,785**	**4,065**	**4,065**	**4,068**	**4,068**	**4,037**	**4,240**	**4,257**	**4,058**

REVENUES AND REIMBURSEMENTS

Current Services

(in millions of dollars)

	BP-1 SUMMARY	FISCAL YEAR 2015		2016		2017		2018	2019	2020	2021
		Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
14	Revenues [5/]	3,164	3,164	4,035	4,035	4,084	4,084	4,084	4,064	4,105	4,146
15	Project Funded in Advance	390	390	30	30	30	30	30	50	50	50
16	**TOTAL**	**3,554**	**3,554**	**4,065**	**4,065**	**4,114**	**4,114**	**4,114**	**4,114**	**4,155**	**4,196**
	BUDGET AUTHORITY (NET) [6/]	**420**		**624**		**556**		**145**	**210**	**(52)**	**(194)**
17	**OUTLAYS (NET) [6/7/8]**		**383**		**(1)**		**(46)**	**(77)**	**126**	**102**	**(138)**

These notes are an integral part of this table.

1/ This FY 2017 budget includes capital and expense estimates based on Bonneville's IPR and CIR processes and updated estimates for the FY 2016 and 2017 Transmission capital.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

2/ Power Services includes Fish & Wildlife, Residential Exchange Program, Planning Council, Conservation & Energy Efficiency and Associated Project Costs which have been shown separately for display purposes.

3/ This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities that are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

4/ See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

5/ Revenues, included in the Net Outlay formulation, are calculated consistent with cash management goals and assume a combination of adjustments. Assumed adjustments include the use of a combination of tools, including upcoming rate adjustment mechanisms, a net revenue risk adjustment, debt service refinancing strategies and/or short-term financial tools to manage net revenues and cash. Some of these potential tools will reduce costs rather than generate revenue, causing the same Net Outlay result. Adjustments for depreciation and 4(h)(10)(C) credits of the Northwest Power Act are also assumed.

6/ BPA received $48.7 million of additional budget authority in FY 2007 to accommodate the work necessary to relocate the radio spectrum consistent with the Commercial Spectrum Enhancement Act (P.L. 108-494). In accordance with Federal law, Bonneville plans to return the forecasted unused balance of approximately $8.2 million to the U.S. Treasury as soon as the National Telecommunications Information Administration notifies the Federal Communications Commission that the DOE relocation effort is complete.

7/ Net Outlay estimates are based on current cost savings to date and anticipated cash management goals. They are expected to follow anticipated management decisions throughout the rate period that, along with actual market conditions, will impact revenues and expenses. Actual Net Outlays are volatile and are reported in Report on Budget Execution and Budgetary Resources (SF-133). Actual Net Outlays could differ from estimates due to changing market conditions, streamflow variability, and continuing restructuring of the electric industry.

8/ FY 2015 Net Outlays are based on Bonneville's FY 2015 audited actuals. FYs 2016 & 2017 Net Outlays are calculated using Bonneville's revenue forecast from the BP-16 rate case. FYs 2018 & 2019 assume no growth in Offsetting Collections compared to FYs 2016 & 2017. FYs 2020 and 2021 assume a 1% growth in Offsetting Collections.

EXPENSED OBLIGATIONS/OUTLAYS [1,4/]
Current Services
(in millions of dollars)
FISCAL YEAR

BP-2	2015		2016		2017		2018	2019	2020	2021
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
1 Residential Exchange Program	200	200	217	217	217	217	239	239	252	252
2 Power Services [2/]	1,364	1,364	1,558	1,558	1,562	1,562	1,674	1,775	1,748	1,591
3 Transmission Services	453	453	449	449	458	458	465	474	483	493
4 Conservation & Energy Efficiency	75	75	178	178	173	173	179	183	187	191
5 Fish & Wildlife	258	258	267	267	274	274	281	288	295	302
6 Interest/ Pension [3/]	387	387	337	337	353	353	398	418	439	466
7 Planning Council	10	10	11	11	11	11	12	12	12	12
8 TOTAL EXPENSE	2,748	2,748	3,017	3,017	3,049	3,049	3,249	3,388	3,415	3,307
9 Projects Funded in Advance	390	390	30	30	30	30	30	50	50	50

CAPITAL OBLIGATIONS/OUTLAYS [1/]

Current Services

(in millions of dollars)

FISCAL YEAR

BP-2 continued	2015		2016		2017		2018	2019	2020	2021
	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Outlays	Oblig.	Oblig.	Oblig.	Oblig.
10 Conservation & Energy Efficiency	87	87	0	0	0	0	0	0	0	0
11 Transmission Services	461	461	700	700	644	644	445	445	417	306
12 Associated Project Cost	43	43	241	241	270	270	282	314	333	348
13 Fish & Wildlife	21	21	40	40	46	46	19	35	35	34
14 Capital Equipment	34	34	37	37	29	29	11	6	4	11
15 Capitalized Bond Premiums	0	0	0	0	0	0	2	2	2	2
16 TOTAL CAPITAL INVESTMENTS	647	647	1,018	1,018	989	989	758	802	791	701
17 TREASURY BORROWING AUTHORITY TO										
18 FINANCE CAPITAL OBLIGATIONS [4/]	647		1,018		989		758	802	791	701

These notes are an integral part of this table.

[1/] This FY 2017 budget includes capital and expense estimates based on Bonneville's IPR and CIR processes and updated estimates for the FY 2016 and 2017 Transmission capital.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

[2/] Power Services includes Fish & Wildlife, Residential Exchange Program, Planning Council, Conservation & Energy Efficiency and Associated Project Costs which have been shown separately for display purposes.

[3/] See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

[4/] This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities which are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

BP-3

CURRENT SERVICES

(in millions of dollars)

	CAPITAL TRANSFERS			**FISCAL YEAR**				
	Amortization:	**2015 Pymts**	**2016 Pymts**	**2017 Pymts**	**2018 Pymts**	**2019 Pymts**	**2020 Pymts**	**2021 Pymts**
19	BPA Bonds	212	30	76	48	559	534	474
20	Reclamation Appropriations	49	51	0	50	0	0	0
21	BPA Appropriations	6	75	55	68	0	0	0
22	Corps Appropriations	181	33	74	62	5	0	44
23	**TOTAL CAPITAL TRANSFERS**	**449**	**189**	**206**	**229**	**564**	**534**	**518**
			STAFFING					
24	**FULL-TIME EQUIVALENT (FTE)**	**2,836**	**3,100**	**3,100**	**3,100**	**3,100**	**3,100**	**3,100**

PROGRAM & FINANCING SUMMARY

Current Services

(in millions of dollars)

Identification Code: 89-4045-0-3-271

		2015	2016	2017 est.	2018	2019	2020	2021
	Program by activities:							
	Operating expenses:							
0.01	Power Services	950	1,103	1,097	1,203	1,295	1,250	1,077
0.02	Residential Exchange Program	200	217	217	239	239	252	252
	Associated Project Costs:							
0.05	Bureau of Reclamation	134	157	158	161	163	165	172
0.06	Corps of Engineers	230	244	251	255	259	274	282
0.07	Colville Settlement	19	22	22	23	23	23	24
0.19	U.S. Fish & Wildlife Service	31	32	33	34	34	35	36
0.20	Planning Council	10	11	11	12	12	12	12
0.21	Fish & Wildlife	258	267	274	281	288	295	302
0.23	Transmission Services	453	449	458	465	474	483	493
0.24	Conservation & Energy Efficiency	75	178	173	179	183	187	191
0.25	Interest	350	299	314	359	377	398	424
0.26	Pension and Health Benefits [1/]	38	38	39	40	40	41	42
0.91	**Total operating expenses [2/]**	**2,748**	**3,017**	**3,049**	**3,249**	**3,388**	**3,415**	**3,307**
	Capital investment:							
1.01	Power Services	43	241	270	282	314	333	348
1.02	Transmission Services	461	700	644	445	445	417	306
1.03	Conservation & Energy Efficiency	87	0	0	0	0	0	0
1.04	Fish & Wildlife	21	40	46	19	35	35	34
1.05	Capital Equipment	34	37	29	11	6	4	11
1.06	Capitalized Bond Premiums	0	0	0	2	2	2	2
1.07	**Total Capital Investment [3/]**	**647**	**1,018**	**989**	**758**	**802**	**791**	**701**
2.01	Projects Funded in Advanced	390	30	30	30	50	50	50
10.00	**Total obligations [4/]**	**3,785**	**4,065**	**4,068**	**4,037**	**4,240**	**4,257**	**4,058**

These notes are an integral part of this table.

[1/] See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

[2/] Assumes expense obligations, not accrued expenses.
Power Services includes Fish & Wildlife, Residential Exchange Program, Planning Council, Conservation & Energy Efficiency and Associated Project Costs which have been shown separately for display purposes.

[3/] Assumes capital obligations, not capital expenditures.

[4/] This FY 2017 budget includes capital and expense estimates based on Bonneville's IPR and CIR processes and updated estimates for the FY 2016 and 2017 Transmission capital.

For purposes of this table, this FY 2017 budget reflects, for FY 2015, actual third party financing expense only for PFIA.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Refer to 16 USC Chapters 12B, 12G, 12H, and Bonneville's other organic laws, including P.L. 100-371, Title III, Sec. 300, 102 Stat. 869, July 19, 1988 regarding Bonneville's ability to obligate funds.

Program and Financing (continued)
Current Services
(in millions of dollars)

		2015	2016	2017 est.	2018	2019	2020	2021
Financing:								
1000	Unobligated balance available, start of year. [5/]	8	13	0	0	0	0	0
1050	Unobligated balance available, end of year.[5/]	8	10	0	0	0	0	0
1900	**Budget authority (gross)**	**3,788**	**4,894**	**4,906**	**4,645**	**4,352**	**4,412**	**4,379**
Budget Authority:								
1400	Permanent Authority: Authority to borrow from Treasury (indefinite) [6/]	619	1,018	989	758	802	791	701
1800	Spending authority from off-setting collections	3,345	4,065	4,114	4,114	4,114	4,155	4,196
1825	Portion applied to debt reduction	(212)	(189)	(206)	(229)	(564)	(534)	(518)
1850	**Spending authority from offsetting collections (adjusted)**	**1,218**	**3,876**	**3,917**	**3,886**	**3,550**	**3,621**	**3,678**
900	Total obligations	3,785	4,065	4,068	4,037	4,240	4,257	4,058
4110	Outlays (gross)	3,728	4,065	4,068	4,037	4,240	4,257	4,058
Adjustments to budget authority and outlays:								
	Deductions for offsetting collections:							
4120	Federal funds	(47)	(90)	(90)	(90)	(90)	(90)	(90)
4121	Interest on Federal Securities	3						
4123	Non-Federal sources	(3,301)	(3,975)	(4,024)	(4,024)	(4,024)	(4,065)	(4,106)
4130	Total, offsetting collections	(3,345)	(4,065)	(4,114)	(4,114)	(4,114)	(4,155)	(4,196)
4160	**Budget authority (net)**	**420**	**829**	**792**	**531**	**238**	**257**	**183**
4170	**Outlays (net) [7/8/]**	**383**	**(1)**	**(46)**	**(77)**	**126**	**102**	**(138)**

These notes are an integral part of this table.

[5/] Reflects estimated cost for radio spectrum fund.

[6/] The Permanent Authority: Authority to borrow (indefinite) from the U.S. Treasury amounts reflect both Bonneville's capital program financing needs and either the use of, or creation of, deferred borrowing. Deferred borrowing is created when, as a cash and debt management decision, Bonneville uses cash from revenues to liquidate capital obligations in lieu of borrowing from Treasury. This temporary use of cash on hand instead of borrowed funds creates the ability in future years to borrow money, when fiscally prudent. The FY 1989 Energy and Water Development Appropriations Act (P.L. 100-371 0f 7/19/88) confirmed that Bonneville has authority to incur obligations in excess of U.S. Treasury borrowing authority and cash in the BPA fund.

[7/] Net Outlay estimates are based on current cost savings to date and anticipated cash management goals. They are expected to follow anticipated management decisions throughout the rate period that, along with actual market conditions, will impact revenues and expenses. Actual Net Outlays are volatile and are reported in Report on Budget Execution and Budgetary Resources (SF-133). Actual Net Outlays could differ from estimates due to changing market conditions, streamflow variability, and continuing restructuring of the electric industry.

Revenues, included in the Net Outlay formulation, are calculated consistent with cash management goals and assume a combination of adjustments. Assumed adjustments include the use of a combination of tools, including upcoming rate adjustment mechanisms, a net revenue risk adjustment, debt service refinancing strategies, and/or short-term financial tools to manage net revenues and cash. Some of these potential tools will reduce costs rather than generate revenue, causing the same Net Outlay result. Adjustments for depreciation and 4(h)(10)(C) credits of the Northwest Power Act are also assumed.

This budget has been prepared in accordance with PAYGO. Under PAYGO all Bonneville budget estimates are treated as mandatory and are not subject to the discretionary caps included in the Budget Control Act of 2011. These estimates support activities which are legally separate from discretionary activities and accounts. Thus, any changes to Bonneville estimates cannot be used to affect any other budget categories which have their own legal dollar caps. Because Bonneville operates within existing legislative authority, Bonneville is not subject to a "pay-as-you-go" test regarding its revision of current-law funding estimates.

[8/] FY 2015 Net Outlays are based on Bonneville's FY 2015 audited actuals. FYs 2016 & 2017 Net Outlays are calculated using Bonneville's revenue forecast from the BP-16 rate case. FYs 2018 & 2019 assume no growth in Offsetting Collections compared to FYs 2016 & 2017. FYs 2020 and 2021 assume a 1% growth in Offsetting Collections.

BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES
(in millions of dollars)

BP-4A

	Fiscal Year							
	2015				**2016**			
	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing
Start-of-Year: Total	3,388	2,846	4,287	4,214	3,823	3,281	4,722	4,649
Plus: Annual Increase								
Cum.-Annual Treasury Borrowing	647	647	647		1,018	1,018	1,018	
Treasury Borrowing (Cash)				647				1,018
Less:								
BPA Bond Amortization	212	212	212	212	30	30	30	30
Net Increase/(Decrease):	435	435	435	435	988	988	988	988
Cum.-End-of-Year: Total	3,823	3,281	4,722	4,649	4,811	4,269	5,710	5,637
Total Remaining Treasury Borrowing Amount				3,051				2,063
Total Legislated Treasury Borrowing Amount				7,700				7,700

These notes are an integral part of this table.

In any given year, BPA may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, Treasury interest rates, and other cash management factors. In such cases, BPA accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2017 budget, BPA "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines BPA bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Bonneville reserve financing of $15 million annually is assumed as part of TS capital-PFIA for FYs 2015-2021.

Cumulative advance amortization payments as of the end of FY 2015 are $3,291 million.

BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES
(in millions of dollars)

BP-4B

	2017				2018			
	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing
Start-of-Year: Total	4,811	4,269	5,710	5,637	5,724	5,182	6,623	6,550
Plus: Annual Increase								
Cum.-Annual Treasury Borrowing	989	989	989		758	758	758	
Treasury Borrowing (Cash)				989				758
Less:								
Total BPA Bond Amortization	76	76	76	76	48	48	48	48
Net Increase/(Decrease):								
Total	913	913	913	913	710	710	710	710
Cum.-End-of-Year: Total	5,724	5,182	6,623	6,550	6,434	5,892	7,333	7,260
Total Remaining Treasury Borrowing Amount				1,150				440
Total Legislated Treasury Borrowing Amount				7,700				7,700

These notes are an integral part of this table.

In any given year, BPA may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, Treasury interest rates, and other cash management factors. In such cases, BPA accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2017 budget, BPA "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines BPA bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

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Bonneville reserve financing of $15 million annually is assumed as part of TS capital-PFIA for FYs 2015-2021.

BONNEVILLE POWER ADMINISTRATION
BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES
(in millions of dollars)

BP-4C Fiscal Year

	2019				2020			
	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing
Start-of-Year: Total	6,434	5,892	7,333	7,260	6,677	6,135	7,576	7,503
Plus: Annual Increase								
Cum.-Annual Treasury Borrowing	802	802	802		791	791	791	
Treasury Borrowing (Cash)				802				791
Less:								
Total BPA Bond Amortization	559	559	559	559	534	534	534	534
Net Increase/(Decrease):								
Total	243	243	243	243	257	257	257	257
Cum.-End-of-Year: Total	6,677	6,135	7,576	7,503	6,934	6,392	7,833	7,760
Total Remaining Treasury Borrowing Amount				197				(60)
Total Legislated Treasury Borrowing Amount				7,700				7,700

These notes are an integral part of this table.

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Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

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As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Bonneville reserve financing of $15 million annually is assumed as part of TS capital-PFIA for FYs 2015-2021.

BPA STATUS of U.S. TREASURY BORROWING
CURRENT SERVICES
(in millions of dollars)

BP-4D

	Fiscal Year 2021			
	Net Capital Obs	Net Capital Obs Subject to BA	Net Capital Expend.	Bonds Out-Standing
Start-of-Year: Total	6,934	6,392	7,833	7,760
Plus: Annual Increase				
Cum.-Annual Treasury Borrowing	701	701	701	
Treasury Borrowing (Cash)				701
Less:				
Total BPA Bond Amortization	474	474	474	474
Net Increase/(Decrease):				
Total	227	227	227	227
Cum.-End-of-Year: Total	7,161	6,619	8,060	7,987
Total Remaining Treasury Borrowing Amount				(287)
Total Legislated Treasury Borrowing Amount				7,700

These notes are an integral part of this table.

In any given year, BPA may issue lower principal amount of bonds to the U.S. Treasury than forecast depending on net revenues, Treasury interest rates, and other cash management factors. In such cases, BPA accumulates a deferred borrowing balance that it accesses as necessary in the future.

Capital funding levels reflect external factors such as the significant changes affecting West Coast power and transmission markets, along with planned infrastructure investments designed to address the long-term needs of the region.

In this FY 2017 budget, BPA "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines BPA bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

As in the past, Bonneville may pursue future restructuring of total debt as opportunities arise.

Budget estimates included in this budget are subject to change due to rapidly changing economic and institutional conditions in the evolving competitive electric utility industry.

Bonneville reserve financing of $15 million annually is assumed as part of TS capital-PFIA for FYs 2015-2021.

BONNEVILLE POWER ADMINISTRATION
POTENTIAL THIRD PARTY FINANCING TRANSPARENCY
(in millions of dollars)

BP-5

		Fiscal Year						
Transmission Services - Capital		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Main Grid	Requirements	63	104	134	148	150	122	1
Area & Customer Services	Requirements	4	13	31	1	0	0	0
Upgrades & Additions	Requirements	267	205	160	24	17	14	15
System Replacements	Requirements	127	377	320	272	278	281	291
Projects Funded in Advance	Requirements	266	30	30	30	50	50	50
Total, Transmission Services - Capital	Requirements	**727**	**730**	**674**	**475**	**495**	**467**	**356**
Associated Project Costs - Capital								
Associated Project Costs	Requirements	43	241	270	282	314	333	348
Projects Funded in Advance[1/]	Requirements	124	NA	NA	NA	NA	NA	NA
Total, Associated Project Costs - Capital	Requirements	**167**	241	270	282	314	333	348
Federal and Non-Federal Funding								
Projects Funded in Advance	Sources	390	30	30	30	50	50	50
Treasury Borrowing Authority	Sources	504	941	914	727	759	750	654
Scenario								
Projects Funded in Advance[1/]	Scenario	124	82	0	0	0	0	0
Third Party Financing	Scenario	249	350	322	223	223	209	153
Alternate Treasury Borrowing Authority	Scenario	NA	509	592	504	536	542	501

These notes are an integral part of this table.

[1/] In this instance, Projects Funded in Advance represents prepayment of Power customers' bills reimbursed by future credits and third party non-federal financing for Conservation initiatives.

The table above shows both the potential use of Treasury borrowing authority for transmission capital projects based on this FY 2017 budget and the use adjusted for potential third-party financing to fund appropriate capital expenditures when feasible in lieu of Treasury borrowing. Estimates included in this FY 2017 budget are uncertain and may change due to revised capital investment plans, changing economic conditions, and an evolving financial market environment. The estimates of third-party financing included in the table show a reduction in the use of Treasury borrowing and do not reflect the actual notional third party financing commitment BPA may enter into in that particular year. The difference of reduction in use of Treasury borrowing and the

Bonneville's Third Party Financing for Transmission Services consists primarily of lease-purchase agreements, which are capitalized obligations that enable BPA to acquire the use of transmission facilities over time. BPA also undertakes the construction and installation of facilities from funds that customers advance to BPA for construction of BPA-owned facilities that assist the customers in obtaining necessary transmission service from BPA. These customers receive monetary payment credits in bills for transmission services from BPA up to the amount of funds advanced to BPA, plus interest.

BPA's historical Third Party Financing amounts may vary over time due to re-assignment of certain lease-purchase agreements to Treasury Financing.

BPA Status of Treasury Borrowing with Potential Third Party Financing & PFIA Scenario

With the potential use of third party financing assumed in the scenario above, BPA's total remaining Treasury Borrowing Amount would be extended to the following amounts. See BP-4 BPA Status of Treasury Borrowing- Current Services.

	Fiscal Year						
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Start-of-Year: Total Bonds Outstanding	4,214	4,649	5,205	5,796	6,283	6,303	6,352
Plus:							
Treasury Borrowing (Cash)	647	1,018	989	758	802	791	701
Less:							
Potential Third Party Financing & PFIA	NA	432	322	223	223	209	153
BPA Bond Amortization	212	30	76	48	559	534	474
Net Increase/(Decrease) Bonds Outstanding:	435	556	591	487	20	48	74
Cum.-End-of-Year: Total	4,649	5,205	5,796	6,283	6,303	6,352	6,426
Total Remaining Treasury Borrowing Amount	3,051	2,495	1,904	1,417	1,397	1,348	1,274
Total Legislated Treasury Borrowing Amount	7,700	7,700	7,700	7,700	7,700	7,700	7,700

U.S. TREASURY PAYMENTS

(in millions of dollars)

		FISCAL YEAR						
		2015	2016	2017	2018	2019	2020	2021
A.	**INTEREST ON BONDS & APPROPRIATIONS**							
	Bonneville Bond Interest							
1	Bonneville Bond Interest (net)	132	95	119	167	195	214	240
2	AFUDC [1/]		53	51	52	58	54	48
	Appropriations Interest							
3	Bonneville	14	14	9	5	0	0	0
4	Corps of Engineers [2/]	146	136	136	137	136	137	138
5	Lower Snake River Comp. Plan	17	17	17	17	17	17	17
6	Bureau of Reclamation [3/]	40	37	33	33	30	30	30
7	Bond Premiums paid/Discounts (not capitalized)		0	0	0	0	0	0
8	**Total Bond and Approp. Interest**	**350**	**351**	**365**	**411**	**435**	**452**	**472**
B.	**ASSOCIATED PROJECT COST**							
9	Bureau of Reclamation Irrigation Assistance	52	61	51	28	57	25	12
10	Bureau of Rec. O & M [4/]	2	0	0	0	0	0	0
11	Corps of Eng. O & M [4/]	1	0	0	0	0	0	0
12	L. Snake River Comp. Plan O & M [4/]	0	0	0	0	0	0	0
13	**Total Assoc. Project Costs**	**55**	**61**	**51**	**28**	**57**	**25**	**12**
C.	**CAPITAL TRANSFERS**							
	Amortization							
14	Bonneville Bonds [6/]	212	30	76	48	559	534	474
15	Bureau of Reclamation Appropriations	49	51		50	0	0	0
16	Corps of Engineers Appropriations	181	33	74	62	5	0	44
17	Lower Snake River Comp. Plan	0	0	0	0	0	0	0
18	Bonneville Appropriations	6	75	55	68	0	0	0
19	**Total Capital Transfers**	**449**	**189**	**206**	**229**	**564**	**534**	**518**
D.	**OTHER PAYMENTS**							
20	Unfunded CSRS Liability [5/]	38	38	39	40	40	41	42
21	**TOTAL TREASURY PAYMENTS**	**891**	**640**	**662**	**707**	**1,098**	**1,051**	**1,044**

These notes are an integral part of this table.

1/ This interest cost is capitalized and included in BPA's Transmission System Development, System Replacments, and Associated Projects Capital programs. AFUDC is financed through the sale of bonds.

2/ Includes interest on construction funding for Corp of Engineers (Corps) fish bypass facilities at Corps dams in the Columbia River Basin, including Lower Monumental, Ice Harbor, and The Dalles.

3/ Includes payments paid by Reclamation to the U.S. Treasury on behalf of Bonneville.

4/ Costs for power O&M is funded directly by Bonneville as follows (in millions):

FISCAL YEAR	2015	2016	2017	2018	2019	2020	2021
Bureau of Reclamation	134	157	158	161	163	165	172
Corps of Engineers	230	244	251	255	259	274	282
Subtotal Bureau and Corps	364	401	409	416	422	440	455
Lower Snake River Comp. Plan	31	32	33	34	34	35	36
Total	395	433	442	449	456	475	490

5/ See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

6/ In this FY 2017 budget, BPA "bond(s)" refers to all bonds issued by Bonneville to and advances received from the U.S. Treasury. This reference is consistent with section 13 (a) of the Transmission Act, which defines BPA bonds as all bonds, notes, and other evidences of indebtednesses issued and sold by Bonneville to the U.S. Treasury.

Does not include Treasury bond premiums on refinanced Treasury bonds.

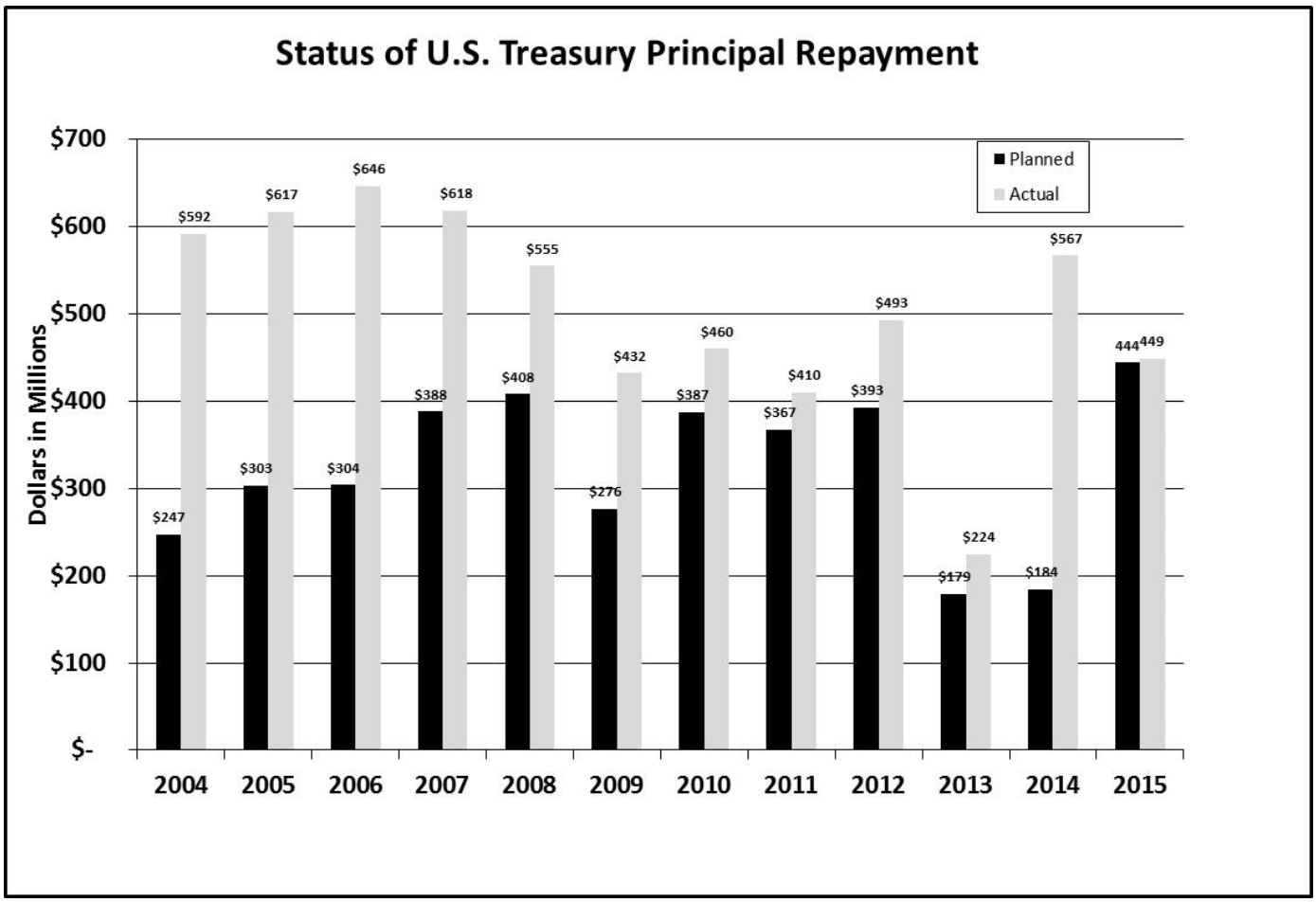


Chart Notes

1/ This chart displays principal repayment only.

2/ U.S. Treasury payment outyear estimates for planned amortization of principal are based on rate case estimates when available and planned amortization for future rate case periods. These estimates may change due to revised capital investment plans, actual U.S. Treasury borrowing, and advanced amortization payments. Bonneville made its full scheduled FY 2015 payment responsibility to the U.S. Treasury. Bonneville's aggregate U.S. Treasury payment was $891.0 million, comprised of $449.0 million in principal, which included $229.0 million in early retirement of higher interest rate U.S. Treasury debt, $350.0 million in interest, and $92.0 million for other costs.

3/ FYs 2002-2012 payments include portions of future planned amortization amounts consistent with Bonneville's capital strategy plan and the Bonneville /Energy Northwest debt optimization program.

4/ Advance amortization due to sale of transmission facilities includes $12.7 million in FY 2003, $5.3 million in FY 2006, $2.0 million in FY 2011, $0.4 million in FY 2013 and $0.4 million in FY 2014.

5/ The cumulative amount of actual advance amortization payments as of the end of FY 2015 is $3,291 million.

OBJECT CLASSIFICATION STATEMENT
(in millions of dollars)

ESTIMATES

	2015 act.	2016	2017
11.1 Full-time permanent	348	372	373
11.3 Other than full-time permanent			
11.5 Other personnel compensation	65	69	69
11.9 Total personnel compensation	**413**	**442**	**442**
12.1 Civilian personnel benefits	130	139	139
13.3 Benefits for former personnel	0	0	0
21.0 Travel and transportation of persons	21	22	22
22.0 Transportation of things	2	2	2
23.1 Rental payments to GSA	17	19	19
23.2 Rents, other	30	32	32
23.3 Communication, utilities & misc. charges	10	11	11
25.1 Consulting Services	221	237	237
25.2 Other Services	1,933	2,088	2,090
25.5 R & D Contracts	13	11	11
26.0 Supplies and materials	59	63	63
31.0 Equipment	232	248	249
32.0 Lands and structures	397	425	425
41.0 Grants, subsidies, contributions	46	49	49
43.0 Interest and dividends	260	277	278
99.0 **Total obligations**	**3,785**	**4,065**	**4,068**

Estimate of Receipts
(in millions of dollars)

	Fiscal Year						
	2015	2016	2017	2018	2019	2020	2021
Reclamation Interest	40	37	33	33	30	30	30
Reclamation Amortization	49	51	0	50	0	0	0
Reclamation O&M	2	0	0	0	0	0	0
Reclamation Irrig. Assist.	52	61	51	28	57	25	12
Revenues Collected by Reclamation Distributed in Treasury Account (credit)	-16	-7	-7	-7	-7	-7	-7
Colville Settlement (credit)	-5	-5	-5	-5	-5	-5	-5
Total 1/ Reclamation Fund	**123**	**137**	**73**	**99**	**75**	**42**	**30**
Corps O&M							
CSRS	38	38	39	40	40	41	42
Total 2/ Repayments on misc.costs	**38**	**38**	**39**	**40**	**40**	**41**	**42**

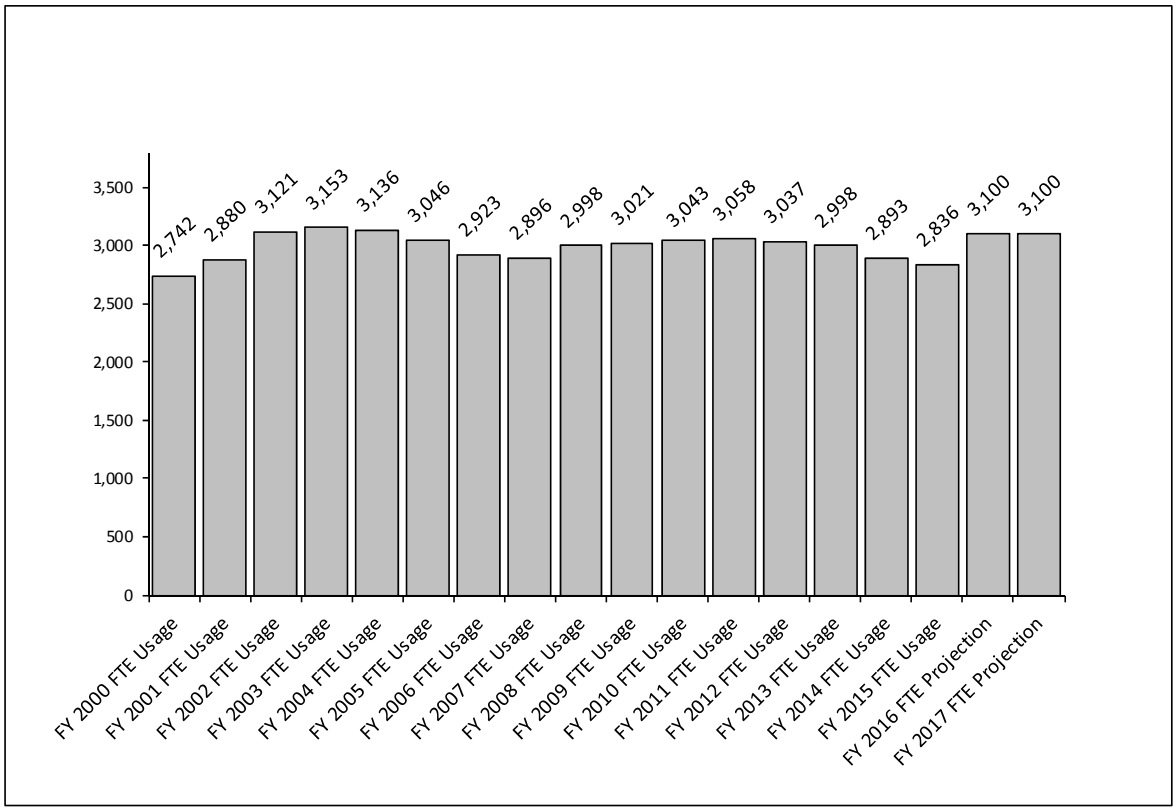
1/ Includes amortization of appropriations and irrigation assistance, and interest costs for Reclamation. The cost of power O&M for Reclamation is no longer included in Proprietary Receipts due to Direct Funding by Bonneville. Represents transfer to Account #895000.26

2/ The costs of power O&M for the Corps and Lower Snake Comp. Plan are no longer included in Proprietary Receipts due to Direct Funding by Bonneville. Represents transfers to Account #892889, Repayments on misc. recoverable costs, not otherwise classified. Costs for power O&M is funded directly by Bonneville as follows (in millions)

	2015	2016	2017	2018	2019	2020	2021
Bureau of Reclamation	134	157	158	161	163	165	172
Corps of Engineers	230	244	251	255	259	274	282
Lower Snake River Comp. Plan	31	32	33	34	34	35	36
Total	**395**	**433**	**442**	**449**	**456**	**475**	**490**

See Interest Expense, Pension and Post-retirement Benefits and Capital Transfers section of this budget for a complete discussion of these cost estimates.

BONNEVILLE FTE



Actual FTE data is consistent with DOE personnel reports.

FTE outyear data are estimates and may change. Bonneville is facing a dynamic and changing transmission marketplace and operations while, at the same time, many of its employees are eligible to retire in the near future. It is important that Bonneville continue to attract and retain skilled individuals to meet the growing demands of a competitive and rapidly changing industry. Accordingly, FTE estimates may need to be adjusted in the future.

Total Cost of BPA Fish & Wildlife Actions

COST ELEMENT	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
CAPITAL INVESTMENTS 1/										
BPA FISH AND WILDLIFE	35.4	35.2	25.5	27.4	40.0	90.2	57.5	52.1	37.4	21.4
BPA SOFTWARE DEVELOPMENT COSTS	0.9	1.0	1.3	0.6	1.2	0.8	0.4	0.0	0.1	1.4
ASSOCIATED PROJECTS (FEDERAL HYDRO)	360.0	60.4	37.3	135.7	56.4	103.0	114.5	103.6	101.7	81.4
TOTAL CAPITAL INVESTMENTS	**396.3**	**96.6**	**64.2**	**163.7**	**97.6**	**193.9**	**172.3**	**155.7**	**139.2**	**104.1**
PROGRAM EXPENSES										
BPA DIRECT FISH AND WILDLIFE PROGRAM	137.9	139.5	148.9	177.9	199.6	221.1	248.9	239.0	231.8	258.2
FISH & WILDLIFE SOFTWARE EXPENSE COSTS								0.2	0.3	0.1
SUPPLEMENTAL MITIGATION PROGRAM EXPENSES 2/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REIMBURSABLE/DIRECT-FUNDED PROJECTS 3/										
O & M LOWER SNAKE RIVER HATCHERIES	20.1	19.3	19.4	20.8	23.3	24.5	22.0	28.7	31.0	30.9
O & M CORPS OF ENGINEERS	31.8	32.9	34.4	34.3	36.5	40.3	41.1	39.2	47.8	46.4
O & M BUREAU OF RECLAMATION	4.5	3.9	4.3	4.5	5.2	5.0	5.3	5.6	6.6	2.6
NW POWER AND CONSERVATION COUNCIL ALLOCATED @ 50%	4.3	4.2	4.1	4.7	4.7	4.5	4.6	5.0	4.9	4.9
SUBTOTAL (REIMB/DIRECT-FUNDED)	60.7	60.3	62.2	64.3	69.7	74.3	73.0	78.5	90.3	84.9
TOTAL OPERATING EXPENSES	**198.6**	**199.7**	**211.1**	**242.1**	**269.3**	**295.3**	**321.9**	**317.70**	**322.40**	**343.17**
PROGRAM RELATED FIXED EXPENSES 4/										
INTEREST EXPENSE	53.4	76.0	76.9	78.7	80.5	79.2	80.6	89.1	83.4	89.2
AMORTIZATION EXPENSE	17.4	22.9	24.4	24.6	25.0	28.3	30.2	35.7	38.7	41.3
DEPRECIATION EXPENSE	16.7	14.0	14.9	16.7	18.0	19.6	20.7	18.6	19.2	20.1
TOTAL FIXED EXPENSES	**87.5**	**112.9**	**116.2**	**120.0**	**123.5**	**127.2**	**131.5**	**143.4**	**141.3**	**150.6**
GRAND TOTAL PROGRAM EXPENSES	**286.1**	**312.7**	**327.3**	**362.1**	**392.8**	**422.5**	**453.4**	**461.1**	**463.7**	**493.7**
FORGONE REVENUES AND POWER PURCHASES										
FOREGONE REVENUES	397.4	282.6	273.5	142.8	99.4	156.7	152.2	135.5	122.7	195.8
BPA POWER PURCH. FOR FISH ENHANCEMENT	168.2	120.7	274.9	240.3	310.1	70.7	38.5	85.8	196.2	67.5
TOTAL FOREGONE REVENUES AND POWER PURCHASES	**565.6**	**403.3**	**548.5**	**383.1**	**409.5**	**227.4**	**190.7**	**221.3**	**318.9**	**263.3**
TOTAL PROGRAM EXPENSES, FOREGONE REVENUES, & POWER PURCHASES	**851.7**	**716.0**	**875.8**	**745.3**	**802.3**	**649.9**	**644.1**	**682.4**	**782.6**	**757.0**
CREDITS										
4(h)(10)(C)	(76.4)	(66.1)	(100.5)	(99.5)	(122.8)	(85.3)	(77.0)	(84.1)	(103.9)	(77.7)
TOTAL CREDITS	**(76.4)**	**(66.1)**	**(100.5)**	**(99.5)**	**(122.8)**	**(85.3)**	**(77.0)**	**(84.1)**	**(103.9)**	**(77.7)**

1/ Capital Investments include both BPA's direct Fish and Wildlife Program capital investments, funded by BPA's Treasury borrowing, and "Associated Projects", which include capital investments at Corps of Engineers' and Bureau of Reclamation projects, funded by appropriations and repaid by BPA. The negative amount in FY 1997 reflects a decision to reverse "plant-in-service" investment that was never actually placed into service. The annual expenses associated with these investments are included in "Program-Related Fixed Expenses", below.

2/ Includes High Priority and Action Plan Expenses and other supplemental programs.

3/ "Reimbursable/Direct-Funded Projects" includes the portion of costs BPA pays to or on behalf of other entities that is determined to be for fish and wildlife purposes.

4/ "Fixed Expenses" include depreciation, amortization and interest on investments on the Corps of Engineers' projects, and amortization and interest on the investments associated with BPA's direct Fish and Wildlife Program.

GENERAL PROVISIONS—DEPARTMENT OF ENERGY
(INCLUDING TRANSFER [AND RESCISSIONS] OF FUNDS)

SEC. 301. (a) No appropriation, funds, or authority made available by this title for the Department of Energy shall be used to initiate or resume any program, project, or activity or to prepare or initiate Requests For Proposals or similar arrangements (including Requests for Quotations, Requests for Information, and Funding Opportunity Announcements) for a program, project, or activity if the program, project, or activity has not been funded by Congress.

(b)(1) Unless the Secretary of Energy notifies the Committees on Appropriations of both Houses of Congress at least 3 full business days in advance, none of the funds made available in this title may be used to—

(A) make a grant allocation or discretionary grant award totaling $1,000,000 or more;

(B) make a discretionary contract award or Other Transaction Agreement totaling $1,000,000 or more, including a contract covered by the Federal Acquisition Regulation;

(C) issue a letter of intent to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B); or

(D) announce publicly the intention to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B).

(2) The Secretary of Energy shall submit to the Committees on Appropriations of both Houses of Congress within 15 days of the conclusion of each quarter a report detailing each grant allocation or discretionary grant award totaling less than $1,000,000 provided during the previous quarter.

(3)The notification required by paragraph (1) and the report required by paragraph (2) shall include the recipient of the award, the amount of the award, the fiscal year for which the funds for the award were appropriated, the account and program, project, or activity from which the funds are being drawn, the title of the award, and a brief description of the activity for which the award is made.

(c) The Department of Energy may not, with respect to any program, project, or activity that uses budget authority made available in this title under the heading "Department of Energy—Energy Programs", enter into a multiyear contract, award a multiyear grant, or enter into a multiyear cooperative agreement unless—

(1) the contract, grant, or cooperative agreement is funded for the full period of performance as anticipated at the time of award; or

(2) the contract, grant, or cooperative agreement includes a clause conditioning the Federal Government's obligation on the availability of future year budget authority and the Secretary notifies the Committees on Appropriations of both Houses of Congress at least 3 days in advance.

(d) Except as provided in subsections (e), (f), and (g), the amounts made available by this title shall be expended as authorized by law for the programs, projects, and activities specified in the "Final Bill" column in the "Department of Energy" table included under the heading "Title III—Department of Energy" in the explanatory statement **[**described in section 4 (in the matter preceding division A of this consolidated**]** *accompanying this* Act).

(e)The amounts made available by this title may be reprogrammed for any program, project, or activity, and the Department shall notify the Committees on Appropriations of both Houses of Congress at least 30 days prior to the use of any proposed reprogramming that would cause any program, project, or activity funding level to increase or decrease by more than $5,000,000 or 10 percent, whichever is less, during the time period covered by this Act.

(f) None of the funds provided in this title shall be available for obligation or expenditure through a reprogramming of funds that—

(1) creates, initiates, or eliminates a program, project, or activity;

(2) increases funds or personnel for any program, project, or activity for which funds are denied or restricted by this Act; or

(3) reduces funds that are directed to be used for a specific program, project, or activity by this Act.

(g)(1)The Secretary of Energy may waive any requirement or restriction in this section that applies to the use of funds made available for the Department of Energy if compliance with such requirement or restriction would pose a substantial risk to human health, the environment, welfare, or national security.

(2) The Secretary of Energy shall notify the Committees on Appropriations of both Houses of Congress of any waiver under paragraph (1) as soon as practicable, but not later than 3 days after the date of the activity to which a requirement or restriction would otherwise have applied. Such notice shall include an explanation of the substantial risk under paragraph (1) that permitted such waiver.

SEC. 302. The unexpended balances of prior appropriations provided for activities in this Act may be available to the same appropriation accounts for such activities established pursuant to this title. Available balances may be merged with funds in the applicable established accounts and thereafter may be accounted for as one fund for the same time period as originally enacted.

SEC. 303. Funds appropriated by this or any other Act, or made available by the transfer of funds in this Act, for intelligence activities are deemed to be specifically authorized by the Congress for purposes of section 504 of the National Security Act of 1947 (50 U.S.C. 3094) during fiscal year **[**2016**]** *2017* until the enactment of the Intelligence Authorization Act for fiscal year **[**2016**]** *2017*.

SEC. 304. None of the funds made available in this title shall be used for the construction of facilities classified as high-hazard nuclear facilities under 10 CFR Part 830 unless independent oversight is conducted by the Office of **[**Independent**]** Enterprise Assessments to ensure the project is in compliance with nuclear safety requirements.

SEC. 305. None of the funds made available in this title may be used to approve critical decision-2 or critical decision-3 under Department of Energy Order 413.3B, or any successive departmental guidance, for construction projects where the total project cost exceeds $100,000,000, until a separate independent cost estimate has been developed for the project for that critical decision.

SEC. 306. Notwithstanding section 301(c) of this Act, none of the funds made available under the heading "Department of Energy—Energy Programs—Science" in this or any subsequent Energy and Water Development and Related Agencies appropriations Act for any fiscal year may be used for a multiyear contract, grant, cooperative agreement, or Other Transaction Agreement of $1,000,000 or less unless the contract, grant, cooperative agreement, or Other Transaction Agreement is funded for the full period of performance as anticipated at the time of award.

[SEC. 307. (a) None of the funds made available in this or any prior Act under the heading "Defense Nuclear Nonproliferation" may be made available to enter into new contracts with, or new agreements for Federal assistance to, the Russian Federation.

(b) The Secretary of Energy may waive the prohibition in subsection (a) if the Secretary determines that such activity is in the national security interests of the United States. This waiver authority may not be delegated.

(c) A waiver under subsection (b) shall not be effective until 15 days after the date on which the Secretary submits to the Committees on Appropriations of both Houses of Congress, in classified form if necessary, a report on the justification for the waiver.**]**

SEC. **[**308**]** *307*. (a) NEW REGIONAL RESERVES.—The Secretary of Energy may not establish any new regional petroleum product reserve unless funding for the proposed regional petroleum product reserve is explicitly requested in advance in an annual budget submission and approved by the Congress in an appropriations Act.

(b)The budget request or notification shall include—

(1) the justification for the new reserve;

(2) a cost estimate for the establishment, operation, and maintenance of the reserve, including funding sources;

(3) a detailed plan for operation of the reserve, including the conditions upon which the products may be released;

(4) the location of the reserve; and

(5) the estimate of the total inventory of the reserve.

[SEC. 309. Of the amounts made available by this Act for "National Nuclear Security Administration—Weapons Activities", up to $50,000,000 may be reprogrammed within such account for Domestic Uranium Enrichment, subject to the notice requirement in section 301(e).**]**

[SEC. 310. (a) Unobligated balances available from appropriations are hereby rescinded from the following accounts of the Department of Energy in the specified amounts:

(1) "Energy Programs—Energy Efficiency and Renewable Energy", $1,355,149.00 from Public Law 110–161; $627,299.24 from Public Law 111–8; and $1,824,051.94 from Public Law 111–85.

(2) "Energy Programs—Science", $3,200,000.00.

(b) No amounts may be rescinded by this section from amounts that were designated by the Congress as an emergency requirement pursuant to a concurrent resolution on the budget or the Balanced Budget and Emergency Deficit Control Act of 1985.]

[SEC. 311. Notwithstanding any other provision of law, the provisions of 40 U.S.C. 11319 shall not apply to funds appropriated in this title to Federally Funded Research and Development Centers sponsored by the Department of Energy.]

[SEC. 312. None of the funds made available in this Act may be used—

(1) to implement or enforce section 430.32(x) of title 10, Code of Federal Regulations; or

(2) to implement or enforce the standards established by the tables contained in section 325(i)(1)(B) of the Energy Policy and Conservation Act (42 U.S.C. 6295(i)(1)(B)) with respect to BPAR incandescent reflector lamps, BR incandescent reflector lamps, and ER incandescent reflector lamps.]

[SEC. 313. (a) Of the funds appropriated in prior Acts under the headings "Fossil Energy Research and Development" and "Clean Coal Technology" for prior solicitations under the Clean Coal Power Initiative and FutureGen, not less than $160,000,000 from projects selected under such solicitations that have not reached financial close and have not secured funding sufficient to construct the project prior to 30 days after the date of enactment of this Act shall be deobligated, if necessary, shall be utilized for previously selected demonstration projects under such solicitations that have reached financial close or have otherwise secured funding sufficient to construct the project prior to 30 days after the date of enactment of this Act, and shall be allocated among such projects in proportion to the total financial contribution by the recipients to those projects stipulated in their respective cooperative agreements.

(b) Funds utilized pursuant to subsection (a) shall be administered in accordance with the provisions in the Act in which the funds for those demonstration projects were originally appropriated, except that financial assistance for costs in excess of those estimated as of the date of award of the original financial assistance may be provided in excess of the proportion of costs borne by the Government in the original agreement and shall not be limited to 25 percent of the original financial assistance.

(c) No amounts may be repurposed pursuant to this section from amounts that were designated by the Congress as an emergency requirement pursuant to a concurrent resolution on the budget or the Balanced Budget and Emergency Deficit Control Act of 1985.

(d) This section shall be fully implemented not later than 60 days after the date of enactment of this Act.]

SEC. 308. Amounts made available by this title may be transferred to the Technology Commercialization Fund in amounts not to exceed 0.9% of the amounts appropriated for applied energy research and development. Amounts so transferred shall be available for a broad spectrum of energy technology or combination of technologies, consistent with section 1001 of the Energy Policy Act of 2005 (42 U.S. Code paragraph 16391(e)), and shall remain available until expended.

SEC. 309. Not to exceed 5 percent of any appropriation made available for Department of Energy activities funded in this Act or subsequent Energy and Water Development and Related Agencies Appropriations Acts may be transferred between such appropriations, but no such appropriation, except as otherwise provided, shall be increased or decreased by more than 5 percent by any such transfers, and notification of any such transfers shall be submitted promptly to the Committees on Appropriations of the House of Representatives and the Senate.

SEC. 310. Consolidated Emergency Operations Center. Amounts available for the Department of Energy under this title in this and prior appropriations Acts shall be available for the design of a consolidated Emergency Operations Center: Provided, That no amounts may be repurposed from amounts that were designated by the Congress as an emergency requirement pursuant to the Concurrent Resolution on the Budget or the Balanced Budget and Emergency Deficit Control Act of 1985, as amended.

SEC. 311. TREATMENT OF LOBBYING AND POLITICAL ACTIVITY COSTS AS ALLOWABLE COSTS UNDER DEPARTMENT OF ENERGY CONTRACTS.

(a) Allowable Costs.—

(1) Section 4801(b) of the Atomic Energy Defense Act (50 U.S.C. 2781(b)) is amended—

(A) by striking "(1)" and all that follows through "the Secretary" and inserting "The Secretary"; and

(B) by striking paragraph (2).

(2) Section 305 of the Energy and Water Development Appropriation Act, 1988, as contained in section 101(d) of Public Law 100–202 (101 Stat. 1329–125), is repealed.

(b) Regulations Revised.—The Secretary of Energy shall revise existing regulations consistent with the repeal of 50 U.S.C. 2781(b)(2) and section 305 of Public Law 100–202 and shall issue regulations to implement 50 U.S.C. 2781(b), as amended by subsection (a), no later than 150 days after the date of the enactment of this Act. Such regulations shall be consistent with the Federal Acquisition Regulation 48 C.F.R. 31.205–22.

(Energy and Water Development and Related Agencies Appropriations Act, 2016.)

Title V – General Provisions

SEC. 501. None of the funds appropriated by this Act may be used in any way, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913.

[SEC. 502. (a) None of the funds made available in title III of this Act may be transferred to any department, agency, or instrumentality of the United States Government, except pursuant to a transfer made by or transfer authority provided in this Act or any other appropriations Act for any fiscal year, transfer authority referenced in the explanatory statement described in section 4 (in the matter preceding division A of this consolidated Act), or any authority whereby a department, agency, or instrumentality of the United States Government may provide goods or services to another department, agency, or instrumentality.

(b) None of the funds made available for any department, agency, or instrumentality of the United States Government may be transferred to accounts funded in title III of this Act, except pursuant to a transfer made by or transfer authority provided in this Act or any other appropriations Act for any fiscal year, transfer authority referenced in the explanatory statement described in section 4 (in the matter preceding division A of this consolidated Act), or any authority whereby a department, agency, or instrumentality of the United States Government may provide goods or services to another department, agency, or instrumentality.

(c) The head of any relevant department or agency funded in this Act utilizing any transfer authority shall submit to the Committees on Appropriations of both Houses of Congress a semiannual report detailing the transfer authorities, except for any authority whereby a department, agency, or instrumentality of the United States Government may provide goods or services to another department, agency, or instrumentality, used in the previous 6 months and in the year-to-date. This report shall include the amounts transferred and the purposes for which they were transferred, and shall not replace or modify existing notification requirements for each authority.**]**

SEC. **[**503**]** *502*. None of the funds made available by this Act may be used in contravention of Executive Order No. 12898 of February 11, 1994 (Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations). *(Energy and Water Development and Related Agencies Appropriations Act, 2016.)*