B O N N E V I L L E   P O W E R   A D M I N I S T R A T I O N

Strategy In Motion

2018 Annual Report

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The Bonneville Power Administration is a nonprofit federal power marketing administration based in the Pacific Northwest. Although BPA is part of the U.S. Department of Energy, it is self-funding and covers its costs by selling its products and services.

BPA markets wholesale electrical power from 31 federal hydroelectric projects in the Northwest, one nonfederal nuclear plant and several small nonfederal power plants. The dams are operated by the U.S. Army Corps of Engineers and the Bureau of Reclamation. The nonfederal nuclear plant, Columbia Generating Station, is owned and operated by Energy Northwest, a joint operating agency of the state of Washington. BPA provides about 28 percent of the electric power used in the Northwest, and its resources — primarily hydroelectric — make BPA power nearly carbon-free.

BPA also operates and maintains about three-fourths of the high-voltage transmission in its service territory. BPA's territory includes Idaho, Oregon, Washington, western Montana and small parts of eastern Montana, California, Nevada, Utah and Wyoming.

BPA promotes energy efficiency, renewable resources and new technologies that improve its ability to deliver on its mission. It also funds regional efforts to protect and rebuild fish and wildlife populations affected by hydropower development in the Columbia River Basin.

BPA is committed to public service and seeks to make its decisions in a manner that provides opportunities for input from all stakeholders. In its vision statement, BPA dedicates itself to providing high system reliability, low rates consistent with sound business principles, environmental stewardship and accountability.

Financial Highlights

Fiscal Year 2018
Federal Columbia River Power System

MILLIONS OF DOLLARS

Total operating revenues	$3,710
Total operating expenses	3,032
Net operating revenues	678
Net interest expense	207
Net revenues	$ 471

Credit Ratings

Moody's	Aa1 with a stable outlook
Fitch	AA with a negative outlook
Standard & Poor's	AA- with a stable outlook

Columbia River Gorge

Up to 4,000 feet deep, the canyon stretches for over 80 miles as the river winds westward through the Cascade Range, forming the boundary between the state of Washington to the north and Oregon to the south.

Photo by Rafael Kaup

Administrator's Letter

2018 was a pivotal year for the Bonneville Power Administration, distinguished by the pursuit of an ambitious new strategy that serves as a blueprint for achieving our historic mission while addressing modern-day challenges and leveraging opportunities. The BPA 2018–2023 Strategic Plan describes how we will deliver on our public responsibilities through a commercially successful business — a business that was created more than 80 years ago to encourage the widest possible use of low-cost federal hydropower.

At the core of the new strategic plan are four goals that define a path for BPA to become more competitive and responsive to customer needs, and to leverage and enable industry change through modernized assets and system operations. In the end, BPA's commercial success will ensure we continue providing low-cost energy to our customers while allowing us to continue meeting our other important public responsibilities, from investing in fish and wildlife to acquiring energy efficiency.

As we made tremendous progress toward our goals in fiscal year 2018, the events that unfolded around us confirmed our strategic direction. I am particularly proud of our effort to bolster financial resiliency by establishing and integrating new financial policies into the foundational processes of BPA. The work we are doing to achieve our financial objectives will enable BPA to better withstand uncertainty in the future, helping to provide a solid foundation for the agency's long-term viability.

Ultimately, the uncertainty of our industry — heavily dependent on Mother Nature and other external factors — worked in our favor in FY 2018 as streamflows provided more fuel for hydropower than expected, boosting both power and transmission sales. That contributed to our end-of-year agency net revenues of $471 million.

But that positive outcome was not a forgone conclusion, and in fact, early forecasts indicated it would be a challenging financial year. In March, we began implementing our new strategic objective to improve cost-management discipline. By revising our budgeting procedures and strengthening our financial analytical capabilities, we were able to reduce our annual budget by $44 million.

We achieved positive net revenues this year despite lower power demand from our public utility customers, as well as the continued devaluation of power in the wholesale market — a result of low natural gas prices

BPA Administrator Elliot Mainzer and Orcas Power and Light Co-op board member Winnie Adams celebrate the installation of a submarine cable in Washington's San Juan Islands.

and an ever-increasing supply of wind and solar energy in the West. This is an ongoing challenge that has weakened the price for our secondary sales, a critical revenue source that helps us keep power rates low for Northwest customers, making it difficult to achieve rate stability. Such disruptive industry dynamics highlight the importance of our strategy's focus on BPA's competitiveness and commercial performance.

The significant cost reductions we made this year and the implementation of our new financial policies are just two examples of our effort to advance our four strategic goals — an effort that requires the collective strengths of our workforce. Our success depends on the commitment of all employees to foster a safe, positive, diverse and inclusive work environment where people feel valued, accountable and enabled to innovate and deliver results. And I am proud to share what we've achieved so far.

Top left: Attendees of the Benton Rural Electric Association annual member meeting in Prosser, Washington, enjoyed our interactive display about the benefits of reliable, clean hydropower. Top right: Employees take part in an Earth Day event to clean up Portland's Forest Park. Bottom: Crews repair wood transmission poles damaged by fire near Grand Coulee Dam.

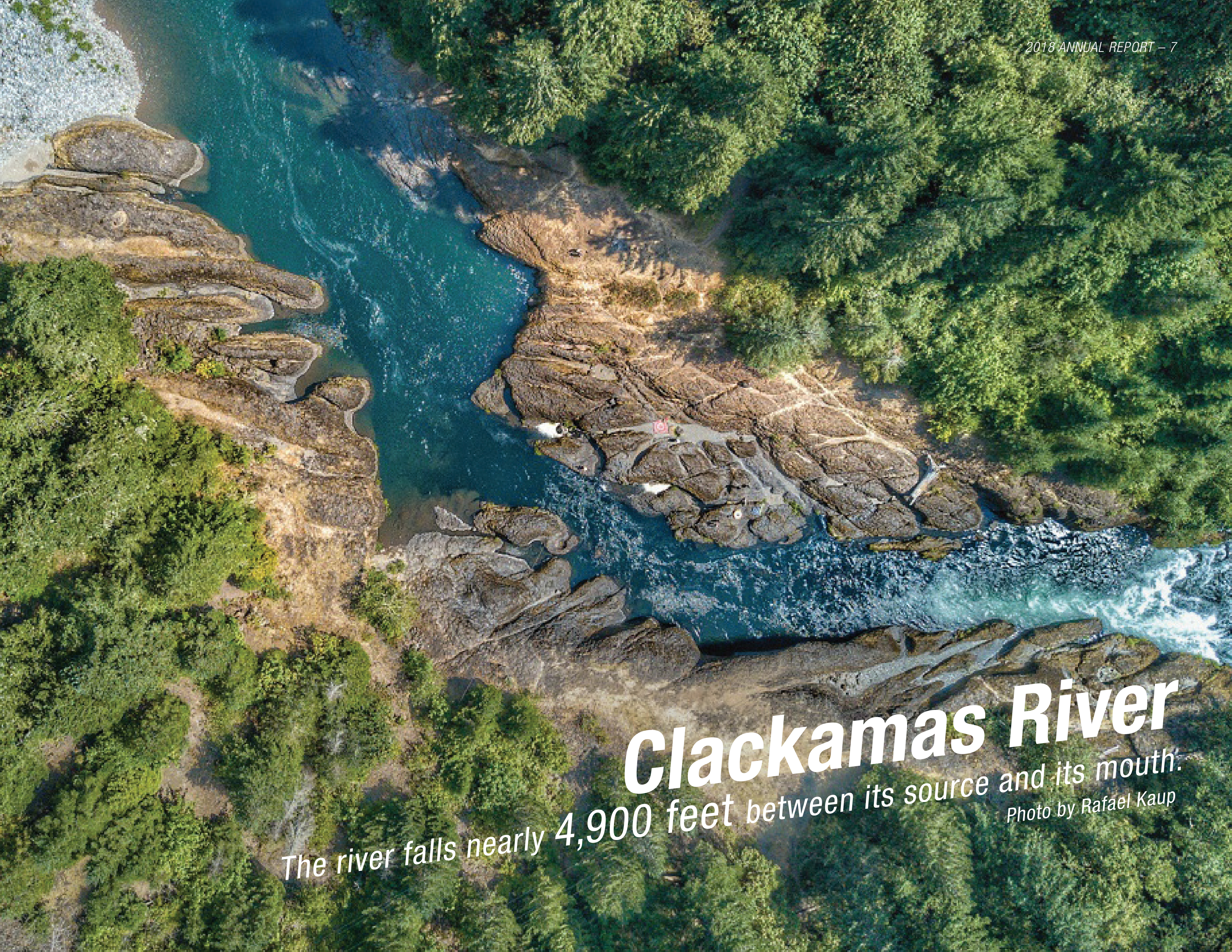
#1 STRENGTHEN FINANCIAL HEALTH

BPA's continued financial health will ensure our ability to carry out our other strategic objectives, from providing competitive rates and maintaining the region's incredibly valuable federal hydropower and transmission assets, to investing in effective fish and wildlife protection.

In addition to the significant reductions we made to FY 2018 spending, we also demonstrated our commitment to cost management in the Integrated Program Review, the public forum where we establish our capital and expense spending levels for the next rate period. We used this forum to demonstrate how BPA is coupling expense reductions with thoughtful prioritization, which resulted in savings of $66 million per year for the BP-20 rate period, covering fiscal years 2020 and 2021, compared to current rate-case spending levels.

Financial strength also requires resiliency to withstand disruptive events, which is why we moved forward with two important policies this year. First, the Financial Reserves Policy establishes how BPA manages and maintains sufficient financial reserves. It defines how we will build reserves or use reserves when they fall above or below a set threshold. And second, our new leverage policy defines the appropriate level of debt compared to the value of our revenue-producing assets. This is an important component to establishing BPA's long-term competitiveness. These policies will reduce debt-service costs, restore Power Services' financial reserves, and are expected to support continued high credit ratings that will help ensure our access to low-cost debt.

Maintaining sufficient access to capital is another important objective in support of financial resiliency. Through collaboration with our regional partners, we have developed a new 10-Year Capital Financing Plan.



Clackamas River

The river falls nearly 4,900 feet between its source and its mouth.

Photo by Rafael Kaup

15,000+ miles of transmission line

serving Idaho, Oregon, Washington, western Montana and small parts of eastern Montana, California, Nevada, Utah and Wyoming.

Photo by Rafael Kaup

Our plan, which includes retaining $1.5 billion in available borrowing authority from the U.S. Treasury, provides certainty that we can meet our critical capital needs over the following decade while preserving sufficient liquidity to meet unexpected demands. An important feature of our financing plan is an extension of the Regional Cooperation Debt refinancing program, which we implement with Energy Northwest.

Our financial accomplishments this year were topped off by our 35th consecutive on-time and in-full payment to the U.S. Treasury to repay the federal investment in the power and transmission system. Our payment of $862 million this year included $275 million for an unscheduled advance payment, which demonstrates our commitment to financial health and the steps we are taking to achieve it.

#2 MODERNIZE ASSETS AND SYSTEM OPERATIONS

Our reliable power and transmission assets are the backbone of the Federal Columbia River Power System, the nation's largest carbon-free, renewable energy resource. In support of our second strategic goal to modernize assets and system operations, we took important steps this year to maintain and enhance the value of our assets.

We are approaching asset management differently than we have in the past. Through new strategic asset management plans and industry-leading practices, we have set the long-term direction for actively managing our assets to maximize their economic value. This new way of planning not only takes into account safety and reliability, but each asset's value in terms of its ability to generate revenue or reduce costs.

We are also advancing the way we use these assets through our grid modernization initiative, which is bringing new state-awareness tools, digital technologies and business process automation into the heart of system operations. The short-term goal of the effort is to improve power and transmission product inventory to increase revenues, reduce the frequency and duration of system outages, and bring new demand response and flow-control technologies into transmission dispatch to manage transmission system congestion more cost-effectively. Our expectation is that the initiative could unlock significant new revenues over the next three years.

An example of our accomplishments under this program is a new system that plans and tracks outages across BPA and the operators of the federal dams — the U.S. Army Corps of Engineers and the Bureau of Reclamation. This is leading to more efficient management of the generating capacity of the FCRPS, creating savings from operational efficiencies, and improving cross-agency coordination and planning.

We've also made progress in our review to determine how and under what conditions BPA could participate in the Western Energy Imbalance Market, operated by the California Independent System Operator. We are continuing to gather more information to inform our assess-

BPA's grid modernization effort will give system operators new tools to improve visibility into real-time conditions and help them maximize the use of federal hydropower and transmission capacity.

ment of the potential costs and benefits by working with our customers, and we expect to make a decision in 2019 on whether to participate.

#3 PROVIDE COMPETITIVE POWER PRODUCTS AND SERVICES

From its inception, BPA has been dedicated to providing low-cost, reliable power to the region. Our third strategic goal ensures we continue this legacy. Our goal is to remain the provider of choice for public power in the Northwest and renew our long-term wholesale power contracts in 2028. Our strategic objectives will help BPA achieve this goal, even with the growth of competition in power markets.

One way we will remain competitive is by holding fish and wildlife costs flat, inclusive of new obligations. In FY 2018 we faced additional costs from a federal court decision that mandated increased spill at eight dams on the lower Columbia and Snake rivers. Before the start of the spill season, BPA adopted a spill surcharge as a way to recover any additional costs associated with the decreased power generation. The court-ordered spill operation, which was intended to help juvenile endangered fish migrate to the ocean, resulted in approximately 250 megawatts of lost hydropower generation, and the cost to the region was estimated at $38.6 million. However, through cost reductions in our Fish and Wildlife program, we were able to offset most of those additional costs. Ultimately, we charged our customers $10.2 million through the spill surcharge.

Top left: Employees volunteer during Take Your Child to Work Day, teaching students about STEM-related topics like engineering, electricity, hydropower and transmission. Top right: Public citizens share their thoughts on the Columbia River Treaty with the U.S. negotiating team at a town hall in Portland, Oregon. Bottom: The vegetation management team maintains transmission corridors to ensure BPA is able to safely and reliably transmit electricity to the customers it serves.

Also in FY 2018, BPA helped the region achieve 48 average megawatts of energy savings. Energy efficiency is the second largest resource in the Northwest — a key tool to meet future customer demand for electricity. BPA is committed to honing the focus of its Energy Efficiency program, consistent with our strategic goal to meet the long-term needs of BPA and its customers. We refined our future energy efficiency goals and developed a future budget that reflects a gradual shift in our energy savings portfolio, targeting investments to meet identified resource needs.

I am also pleased to report that official negotiations for the Columbia River Treaty have begun. We are working with the U.S. Department of State in support of a modern Treaty that shares the downstream benefits equitably between the U.S. and Canada, and secures flood control protections and coordinated operations for a healthy ecosystem.

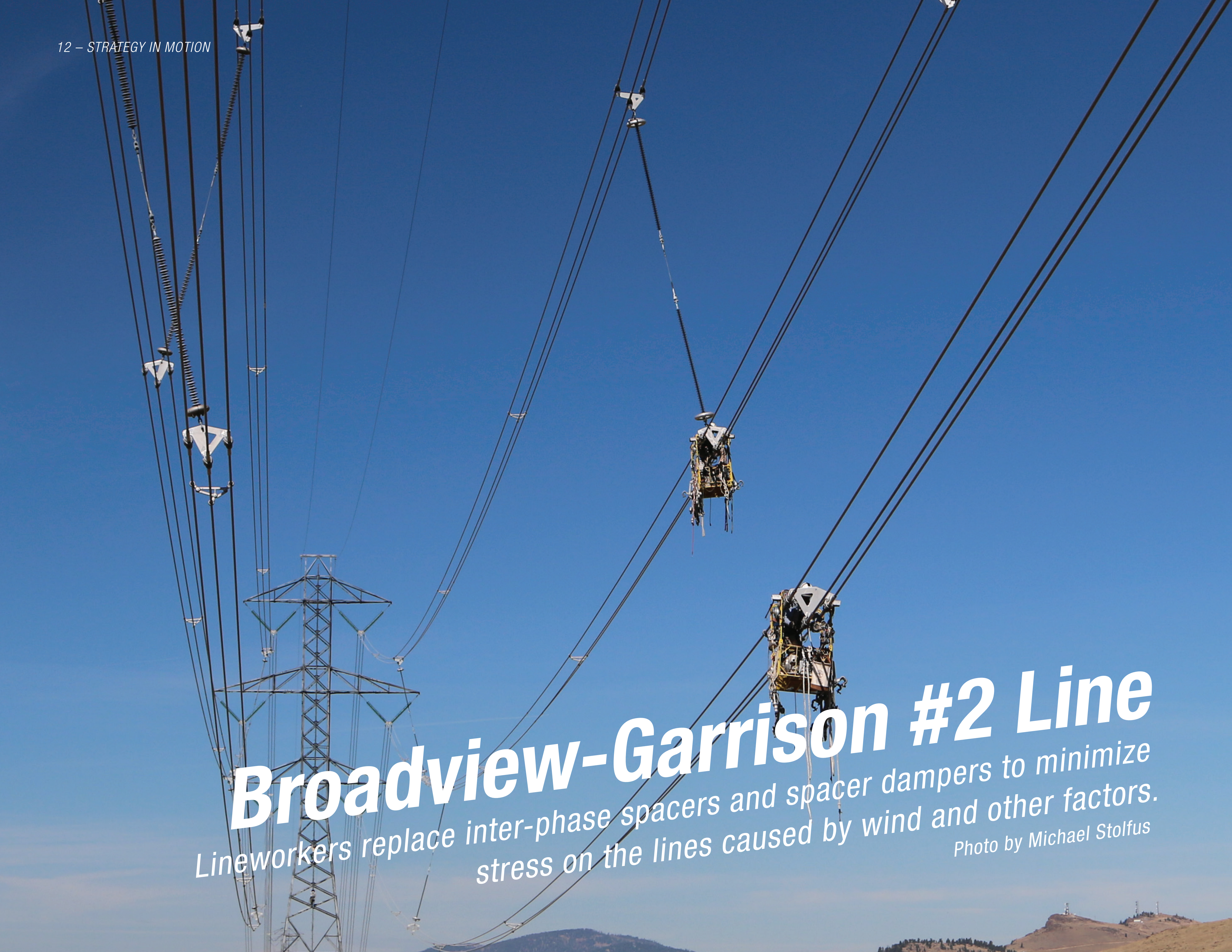
#4 MEET TRANSMISSION CUSTOMER NEEDS EFFICIENTLY AND RESPONSIVELY

The federal transmission system accounts for about three-fourths of the high-voltage transmission in the region.

McNary Dam

has 2 extra turbines to power the dam itself. This gives it "black start" capability — the ability to restart the grid without an outside power source in the event of a large-scale outage.

Photo by Rafael Kaup



Broadview-Garrison #2 Line

Lineworkers replace inter-phase spacers and spacer dampers to minimize stress on the lines caused by wind and other factors.

Photo by Michael Stolfus

It is only through a well-managed transmission grid that BPA is able to safely and reliably deliver low-cost power to our customers.

As we continue to operate and maintain our vast high-voltage network, we have been working diligently to adopt more flexible, scalable, cost-effective and efficient solutions to address load service, congestion and new transmission service requests. Using risk-informed planning assumptions and non-wires solutions, we expect to identify more capacity from our existing system to serve new transmission requests.

We also proposed a new Open Access Transmission Tariff aligned around industry standards, which will allow BPA to adopt terms and conditions for transmission service that support our strategic objective to offer more standardized products and services. The new proposed tariff better positions BPA and the region to take advantage of opportunities in the rapidly changing industry, furthering our other objectives to become more cost-effective, modern and efficient.

ENVIRONMENTAL SUSTAINABILITY

By achieving the above strategic goals targeted at ensuring our commercial success, BPA will continue its key role as a driver of the region's environmental sustainability. This year, in collaboration with our many partners, we have made great strides in improving fresh water fish survival, juvenile fish abundance and habitat restoration.

Our fish and wildlife accomplishments this year include the signing of a historic agreement with the state of Idaho to mitigate the impacts of the construction and operation of Albeni Falls Dam. We also extended the Columbia Basin Fish Accords by up to four years to continue strengthening relationships with tribes, states and our federal partners, and sustaining investments in biologically effective projects.

With the objective of tightening our spending and making the most of our available funds, we are prioritizing investments in fish and wildlife protection, mitigation and enhancement based on biological benefit, cost-effectiveness and a direct linkage to mitigating the impacts of the FCRPS.

We are also making progress on the Columbia River System Operations environmental impact statement. The U.S. Army Corps of Engineers, Bureau of Reclamation and BPA have employed a rigorous process to develop multiple-objective alternatives for detailed evaluation of the potential effects on fish and wildlife, including species listed under the Endangered Species Act, and on cultural, tribal and other social and natural resources. This analysis will guide the refinement of alternatives and the resulting mitigation measures.

BPA and its partners are restoring wetlands through the Clark Fork River Delta Restoration project, the largest restoration effort on Idaho's Lake Pend Oreille behind Albeni Falls Dam.

The next step is for the agencies to use what is learned from the analysis to identify a preferred alternative. The environmental impact statement is scheduled to be adopted in 2020 to guide operations of the Columbia River System for the long term. Our mission is to continue to provide high-quality, economical and reliable power while maintaining excellent environmental stewardship of the natural resources within the Columbia River Basin.

SAFETY

Safety is BPA's top core value, and our commitment to investing in a strong safety culture is reflected in our strategy. We ended the year with an incident frequency rate of 1.2 injuries and illnesses per 200,000 hours worked — exceeding our ceiling of 1.1 for 2018. These results tell us we still have work to do to achieve our long-term goal of zero lost-time injuries in the workplace.

Top left: For several decades, volunteers have represented the agency at the Oregon Tradeswomen's Career Fair in Portland, helping thousands of girls and women learn more about careers in the trades. Top right: Substation operator Tom Ingenthron helps members of the Portland Air National Guard explosive ordnance team as they perform surveillance using a remotely controlled robot in the substation yard where a suspicious bag was found during a training exercise. Bottom: Throughout the year, leadership focused on aligning around the BPA 2018–2023 Strategic Plan and how to engage all employees in the cross-agency effort.

Still, the severity of injuries has declined. This year we had the lowest number of days away and restricted and transferred days since we began recording them in the 1970s.

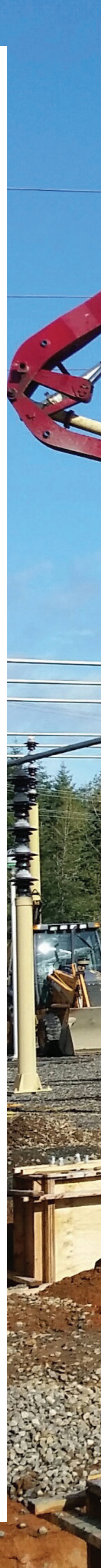
We also continue to focus on proactive measures, which have resulted in a significant increase in employee reports of safety concerns and near misses. The proactive safety culture we established and continue to build is helping us address hazards and avoid injuries and incidents.

I'm also happy to share that nearly two-thirds of our management team has completed a robust safety leadership training program that provides leaders with tools to improve safety in their workplaces and model safe behaviors. The rest of the management team is scheduled to complete the program in 2019.

OUR FUTURE

BPA's success in 2018 reflects the deep commitment of our entire workforce to achieve our strategy. As we carry out the BPA 2018–2023 Strategic Plan in its entirety over the next four years, we will shape BPA's future and build on its great legacy — ensuring we not only preserve the system our predecessors built, but improve it for the next generation.

Elliot E. Mainzer
Administrator and CEO



Chehalis Substation

Crews pour the concrete foundation for new transmission equipment.

Photo by Gene Holyk

Performance Target Results

BPA sets annual Key Performance Indicators and multi-year Key Strategic Initiatives that the organization as a whole is responsible for achieving. Together, these targets and initiatives serve as indicators of BPA's annual performance.

KEY PERFORMANCE INDICATORS

Incident Frequency Rate

Target not met. BPA recorded an incident frequency rate of 1.2 per 200,000 hours worked, which is above the ceiling of 1.1 or less.

Billing Accuracy

Target met. BPA achieved an absolute dollars-revised accuracy rate of 99.3 percent against a target of at least a 98.7 percent average.

Capital: Transmission Annual Capital Expenditure Rate

Target met. BPA's capital investment program expenditures for the year are not more than 100 percent of the start of the year (SOY) capital budget. (Includes Transmission asset category direct expenditures, excluding AFUDC, and indirect expenditures.) Transmission expenditures are $318 million spent, or 74 percent of the SOY budget of $429 million.

Capital: Hydro Generation System Infrastructure Annual Capital Expenditure Rate

Target met. BPA's capital investment program expenditures for the year are not more than 100 percent of the SOY capital budget. (Includes federal hydro asset category direct capital expenditures; excludes AFUDC.) The budget expenditure rate for the Federal Hydro Capital Program, for the cumulative fiscal year, is equal to 92.8 percent (against $200.5 million). The Corps of Engineers' budget execution performance through September is 104.3 percent. The Bureau of Reclamation's budget execution rate through September is 58.8 percent.

Energy Efficiency (aMW)

Target met. BPA delivered at least 48 aMW of new energy efficiency from BPA and public utility energy efficiency programs by the end FY 2018 toward the rate period target of 118 aMW. Actual programmatic energy efficiency reported by customers in FY 2018 is 52.8 aMW.

Cost Management

Target met. BPA's actual total departmental operating costs are 100 percent or less than SOY. Total departmental operating costs are $923 million, which is 91 percent of the SOY budget.

Net Revenues

Target met. BPA generates net revenues greater than or equal to the SOY ($348 million). The end of year (EOY) net revenues are $471 million, which is $123 million above the minimum target of $348 million.

Treasury Payment

Target met. BPA paid its 35th consecutive U.S. Treasury payment. This year's $862 million payment brings BPA's cumulative payments to the Treasury during those 35 years to over $29.8 billion. This year's payment includes $569 million in principal, $226 million in interest and $27 million for irrigation assistance. BPA applied $93 million of credits toward this year's Treasury payment.

Transmission Availability: System Average Interruption Frequency Index – Low Voltage (<200kV)

Target met. BPA's frequency of annualized unplanned line outages on low-voltage lines is less than 0.76 outages per line. BPA's unplanned line outage frequency was 0.40 outages per line.

Transmission Availability: System Average Interruption Frequency Index – High Voltage (≥200kV)

Target met. BPA's frequency of annualized unplanned line outage on high-voltage lines is less than 0.77 outages per line. BPA's unplanned line outage frequency was 0.32 outages per line.

Transmission Availability: System Average Interruption Duration Index – Low Voltage (<200kV)

Target met. BPA's duration of annualized unplanned line outages on low-voltage lines is less than 512 minutes per line. BPA's unplanned line outage duration was 88 minutes per line.

Transmission Availability: System Average Interruption Duration Index – High Voltage (≥200kV)

Target met. BPA's duration of annualized unplanned line outages on high-voltage lines is less than 311 minutes per line. BPA's unplanned line outage duration was 106 minutes per line.

Transmission Reliability: Transmission System Operations Performance

Target met. There were no adverse impacts on the reliability of the Bulk Electric System resulting in instability, uncontrolled separation, or cascading outages.

Power Availability: Fed Hydro Availability Factor

Target met. BPA's Availability Factor of hydro generation facilities, reflecting the percentage of hours within the period the asset was available to run, was 78.4 percent, above the target of 75.1 percent.

Power Reliability: Generation Reliability

Target met. By EOY, there were no involuntary curtailments of firm load due to a reliability violation, inadequate power supply or a power supply system security breach.

Power Availability: Columbia Generating Station Availability Factor

Target met. The CGS availability factor, measured from July 1, 2017, to June 30, 2018, was 95.3 percent, above the target of 93 percent or higher.

KEY STRATEGIC INITIATIVES

Workforce Strategy

Target met. BPA has a diverse workforce of the right size and composition, with the right skills and comptencies, working in a positive work environment to deliver on its public responsibilities and strategic priorities. In FY 2018, BPA met major milestones including analyzing its workforce to inform strategic hiring decisions, establishing long-term trajectory targets to reduce workforce costs, creating a talent management strategy for deploying human resources flexibilities, ensuring supplemental labor use compliance, developing and executing a diversity and inclusion strategy, and implementing a plan ensuring continuity of strong executive leadership.

BPA Safety and Occupational Health Strategy

Target met. BPA's engaged employees and contractors are empowered to recognize job hazards and address safety and occupational health issues. Safety and occupational health are integrated into all aspects of work with a goal of zero injuries. FY 2018 achievements included continuing with major improvements to BPA's safety culture, management system metrics, design and integrated safety and occupational health functions.

Asset Management

Target met. Bonneville's effective decision-making approach optimizes the lifecycle costs of acquiring, operating, maintaining and disposing of our physical assets to extract the highest value. This is accomplished by implementing the Institute of Asset Management's leading practice-based framework which consists of six subject areas that align with both the ISO 55000 and ISO 31000 standards. In FY 2018, BPA made achievements in the six subject areas through implementation of several process improvements in capital decision-making, project scoping, and operations and maintenance efficiencies.

Long-Term Financial and Rates Strategy

Target met. BPA delivers power priced to fully subscribe the FCRPS among Northwest public-preference customers and transmission services priced to provide the best value to customers. BPA does this by investing in its assets while balancing the goals of low rates and financial health over the long-term, and meeting public purpose objectives and statutory obligations as a federal power marketer and open-access transmission provider. BPA met FY 2018 milestones by establishing a financial plan that focused on cost competitiveness and financial resiliency. BPA fully implemented key aspects of the financial plan during 2018.

Commercial Operations

Target met. BPA has the core functionality required to successfully participate in the management of a regional modernized electrical grid. In FY 2018, BPA developed documentation that would allow BPA to join the EIM and began negotiations with CAISO. Additionally, eight commercial operations, now known as grid modernization, projects began.

Fish and Wildlife Strategy

Target met. BPA meets its Endangered Species Act, Northwest Power Act and tribal responsibilities for fish and wildlife through a scientifically credible, legally defensible and cost-effective ecosystem restoration and environmental compliance program with broad regional support, including collaborative actions with stable funding that address existing and emerging issues. 2018 has been a transitional year in terms of planning, with a goal of developing more detailed long-term planning in FY 2019. BPA achieved its near-term implementation of Fish and Wildlife program priorities through 2018, including: met or exceeded hydro performance standards for the Biological Opinion; met tributary and habitat targets; provided timely and high quality responses to court proceedings and filings; and met targets for interim planning and implementation during 2019 through 2021, and after 2021.

Financial Section

Management's Discussion and Analysis

General

The Federal Columbia River Power System (FCRPS) financial statements combine the accounts of the Bonneville Power Administration (BPA) with the accounts of the Pacific Northwest generating facilities of the U.S. Army Corps of Engineers (USACE) and the Bureau of Reclamation (Reclamation). The FCRPS combined financial statements also include the operations and maintenance costs of the U.S. Fish and Wildlife Service for the Lower Snake River Compensation Plan facilities. Consolidated with BPA is a variable interest entity (VIE) of which BPA is the primary beneficiary, and from which BPA leases certain transmission facilities.

FCRPS revenues are derived principally from the sale of power and transmission products and services. In 1937, the Bonneville Project Act created BPA and directed it to market federally produced hydroelectric power to customers, giving preference and priority in power sales to public bodies and cooperatives. The Act authorized BPA to provide, construct, operate, maintain and improve transmission facilities to deliver federal power at cost. BPA is obligated to meet its statutory and contractual load obligations to preference customers so they can meet their total retail loads and load growth, minus their own nonfederal power supply. Preference customers are the largest customer group to which BPA sells power. BPA's current power sales agreements with preference customers are in effect through fiscal year 2028. As an open access transmission service provider, BPA provides ancillary and control area services to support basic transmission services, including providing balancing reserves for interconnected renewable generation. BPA remains committed to providing nondiscriminatory open access transmission after meeting statutory responsibilities to preference customers and others.

BPA's hydroelectric power supply depends on the amount and timing of precipitation in the Columbia River Basin and the shape, or timing, of the resulting runoff. For ratemaking purposes, BPA balances its firm load obligations with the runoff consistent with "critical water conditions." This assumption yields estimated power generation under historically low water conditions, which provides BPA with a reliable estimate of the firm power available to meet firm load obligations. Federal firm power is provided to meet regional preference customer loads first. BPA may also sell firm power to other entities, including regional investor-owned utilities and direct-service industrial customers. Power produced in excess of BPA's firm load obligations, if available, is considered by BPA to be surplus power and is sold in the Western Interconnection wholesale power markets. When generation is not sufficient to meet loads, BPA purchases power on the wholesale markets or acquires the output of resources.

Use of Estimates and Forward-Looking Information

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from those estimates.

This Management's Discussion and Analysis is unaudited and may contain statements which, to the extent they are not recitations of historical facts, constitute "forward-looking statements." In this respect, the words "planned," "predict," "could," "estimate," "expect" and similar expressions are intended to identify forward-looking statements. A number of important factors affecting FCRPS business and financial results could cause actual results to differ materially from those stated in forward-looking statements due to factors such as changes in economic, industry, political and business conditions; changes in laws, regulations and policies and the application of the laws; and changes in climate, weather, hydroelectric conditions and power services supply and demand. BPA does not plan to issue updates or revisions to the forward-looking statements.

Rates

Background

BPA is committed to cost-based rates, and public and regional preference in its marketing of power. BPA sets its rates as low as possible consistent with sound business principles and the full recovery of all of its costs, including timely repayment of the federal investment in the FCRPS.

Under BPA's U.S. Treasury payment probability standard, BPA establishes rates sufficient to maintain a level of financial reserves and achieve a 95 percent probability of making all of BPA's scheduled U.S. Treasury payments during the two-year rate period. (For the definition of financial reserves, see the Liquidity and Capital Resources section in this Management's Discussion and Analysis.)

Fiscal Years 2018–2019

To establish rates for fiscal years 2018 and 2019, BPA concluded the BP-18 rate proceeding in July 2017 by releasing the Administrator's Final Record of Decision and Final Proposal. Rates for the two-year period began on Oct. 1, 2017, and will conclude on Sept. 30, 2019. The Federal Energy Regulatory Commission (FERC) granted final approval of the fiscal year 2018-2019 rates in March 2018. When compared to the prior rate period, the average power rate increase was 5.4 percent, and the average transmission rate decrease was 0.7 percent.

Power rates include a spill surcharge, which addresses financial effects arising from certain court-ordered changes to the operation of the federal hydroelectric system. The spill surcharge, if any, would be implemented annually in each of fiscal years 2018 and 2019 based on the estimated financial impact of the change in spill operations in the related fiscal year. In June 2018, BPA implemented a $10.2 million spill surcharge for fiscal year 2018 as a way to recover estimated foregone revenue and costs to Power Services that result from increases in planned spill levels. By the end of fiscal year 2018, this amount had been recorded as revenue and billed to customers. The spill surcharge is calculated annually. The amount of potential surcharge for fiscal year 2019 is currently unknown and, if implemented, will depend on the planned spill operation for fiscal year 2019.

BPA's power and transmission rates also include a Cost Recovery Adjustment Clause (CRAC) that would enable BPA to increase certain power and transmission rate levels to collect up to $300 million of additional Power Services revenue and up to $100 million of additional Transmission Services revenue for each year of the rate period. Conversely, BPA's power and transmission rates include a Reserves Distribution Clause (RDC) that would enable BPA to use financial reserves for purposes such as additional debt repayment, additional capital investment, decreasing certain power or transmission rate levels, or any other uses. The conditions for triggering the CRAC and the RDC are based on forecasts of certain financial metrics reflecting the level of financial reserves BPA has derived from operations from Power Services and Transmission Services. Neither a Power nor a Transmission CRAC or RDC triggered for application to fiscal year 2018 or 2019 rate levels.

Slice

BPA provides a power sales product called "Slice of the System," or "Slice." For this product, Slice customers pay for a fixed percentage of BPA's power costs in exchange for the right to an indeterminate and variable amount of power. The amount of power Slice customers receive is indexed to their respective Slice percentages and the decisions they make using a BPA-provided water routing simulator that reasonably represents the real-world constraints and capabilities of the FCRPS. BPA and its federal partners retain all operational control of resources that comprise the FCRPS at all times. The aggregate amount of Slice that BPA will sell will decline to 22.4 percent of the system by fiscal year 2020. In fiscal year 2018 the amount was 22.7 percent.

Results of Operations

Operating revenues

Fiscal year 2018 revenues compared to fiscal year 2017

A comparison of FCRPS operating revenues follows for the fiscal years ended Sept. 30, 2018, and 2017:

(Millions of dollars)	Fiscal Year 2018	Fiscal Year 2017	Revenue Increase (Decrease)	% Change
Consolidated gross sales				
Power	$ 2,659.5	$ 2,539.8	$ 119.7	5 %
Transmission	921.4	922.1	(0.7)	(0)
Bookouts (Power)	(20.4)	(21.4)	1.0	(5)
Sales	3,560.5	3,440.5	120.0	3
U.S. Treasury credits	74.7	58.3	16.4	28
Miscellaneous revenues				
Power	33.3	29.5	3.8	13
Transmission	41.8	41.5	0.3	1
Total operating revenues	$ 3,710.3	$ 3,569.8	$ 140.5	4 %

Total operating revenues increased $140.5 million when compared to fiscal year 2017. Consolidated gross sales for Power and Transmission Services, including the effect of bookouts, increased $120.0 million.

Power Services gross sales increased $119.7 million.

- Firm power sales increased $31.4 million, primarily due to a 5.4 percent average power rate increase that went into effect on Oct. 1, 2017. Partially offsetting this increase were reduced firm power sales due to the comparatively mild winter experienced during fiscal year 2018.
- Surplus power sales increased $88.3 million. The increase was mainly due to higher hydroelectric generation in the second quarter of fiscal year 2018. Slightly higher electricity prices for surplus power sales in the summer also contributed to the increase.
- January through July 2018 runoff volume at The Dalles Dam was 119 million acre-feet (maf), a decrease of 18 maf from the same period in 2017. This metric for measuring volume of runoff is one of several indicators of the amount of electricity the hydro system can produce. The full fiscal year 2018 volume finished at 145 maf, a decrease of 25 maf from the 170 maf in fiscal year 2017, and above the historical average (1928-2008) of 132 maf.
- Gross power sales decreased to 89,087,392 megawatt-hours in fiscal year 2018 from 89,435,727 megawatt-hours in fiscal year 2017.

Bookouts are presented on a net basis in the Combined Statements of Revenues and Expenses. When sales and purchases are scheduled with the same counterparty on the same transmission path for the same hour, the power is typically booked out and not scheduled for physical delivery. The megawatt-hours that offset each other net to zero. The dollar values of these offsetting transactions reduce both sales and purchased power expense and are recorded as bookouts. Therefore, the accounting treatment for bookouts has no effect on net revenues, cash flows or margins.

U.S. Treasury credits increased $16.4 million for fish and wildlife mitigation due to decreased streamflows in the first quarter of fiscal year 2018. This led to an increase in the amount of purchased power needed to replace lost hydroelectric generation due to fish mitigation measures. Under the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act), BPA reduces its payment to the U.S. Treasury for the nonpower expenditures made by BPA for fish and wildlife mitigation.

Fiscal year 2017 revenues compared to fiscal year 2016

A comparison of FCRPS operating revenues follows for the fiscal years ended Sept. 30, 2017, and 2016:

(Millions of dollars)	Fiscal Year 2017	Fiscal Year 2016	Revenue Increase (Decrease)	% Change
Consolidated gross sales				
Power	$ 2,539.8	$ 2,402.4	$ 137.4	6 %
Transmission	922.1	903.2	18.9	2
Bookouts (Power)	(21.4)	(22.1)	0.7	(3)
Sales	3,440.5	3,283.5	157.0	5
U.S. Treasury credits	58.3	77.2	(18.9)	(24)
Miscellaneous revenues				
Power	29.5	27.9	1.6	6
Transmission	41.5	44.0	(2.5)	(6)
Total operating revenues	$ 3,569.8	$ 3,432.6	$ 137.2	4 %

Total operating revenues increased $137.2 million when compared to fiscal year 2016. Consolidated gross sales for Power and Transmission Services, including the effect of bookouts, increased $157.0 million.

Power Services gross sales increased $137.4 million.

- Firm power sales increased $29.4 million due to a combination of higher load-shaping charges caused by colder-than-average weather and higher industrial power sales in fiscal year 2017.
- Surplus power sales increased $108.0 million. The increase was mainly due to near-record precipitation, which increased natural streamflows, as well as slightly higher electricity prices for surplus power sales.
- January through July 2017 runoff volume at The Dalles Dam was 137 million acre-feet (maf), a substantial increase of 39 maf from the same period in 2016. This metric for measuring volume of runoff is one of several indicators of the amount of electricity the hydro system can produce. The full fiscal year 2017 volume finished at 170 maf, an increase of 47 maf from the 123 maf in fiscal year 2016.
- Gross power sales increased to 89,435,727 megawatt-hours in fiscal year 2017 from 81,238,796 megawatt-hours in fiscal year 2016.

Transmission Services gross sales increased $18.9 million. A combination of a cold winter and heavy streamflows were responsible for much of this increase. Of this amount, $2.2 million related to oversupply events that occurred from March through June 2017 when near-record streamflows from abundant precipitation and snowmelt required BPA to curtail the generation of certain wind-power generators at times. During an oversupply event, BPA pays displaced generators and collects an equal amount from transmission customers based on their scheduled generation during the month.

U.S. Treasury credits for fish and wildlife mitigation decreased $18.9 million due to increased streamflows and higher federal generation. Under the Northwest Power Act, BPA reduces its payment to the U.S. Treasury for the nonpower expenditures made by BPA for fish and wildlife mitigation. Increased federal generation led to a decrease in the amount of purchased power needed for fish mitigation in fiscal year 2017.

Operating expenses

Fiscal year 2018 operating expenses compared to fiscal year 2017

A comparison of FCRPS operating expenses follows for the fiscal years ended Sept. 30, 2018, and Sept. 30, 2017:

(Millions of dollars)	Fiscal Year 2018	Fiscal Year 2017	Expense Increase (Decrease)	% Change
Operations and maintenance	$ 2,098.7	$ 2,110.7	$ (12.0)	(1) %
Purchased power	159.5	147.4	12.1	8
Nonfederal projects	266.9	241.3	25.6	11
Depreciation and amortization	507.3	485.0	22.3	5
Total operating expenses	$ 3,032.4	$ 2,984.4	$ 48.0	2 %

Total operating expenses increased $48.0 million when compared to fiscal year 2017.

Operations and maintenance expense decreased $12.0 million.

- Energy Northwest's Columbia Generating Station nuclear power plant costs decreased $49.5 million. Refueling occurs biennially, most recently in fiscal year 2017, and refueling and maintenance expenses are typically higher in refueling years.
- Under the 2012 Residential Exchange Program (REP) Settlement Agreement, scheduled amounts increased $22.2 million.
- Contributions for post-retirement benefit programs and pension costs increased $12.9 million as a result of changes in the cost factors developed by the Office of Personnel Management. OPM sponsors these programs, and these cost factors are based on actuarial data and forecasts of future healthcare and pension costs.
- Other operations and maintenance expense saw a net increase of $2.4 million. Cost management actions taken during fiscal year 2018 helped to minimize this increase.

Purchased power expense, including the effects of bookouts, increased $12.1 million mainly due to high market prices experienced during the summer and greater compensation owed to BC Hydro, a Canadian electric utility owned by the province of British Columbia, for the market value of water released at Arrow Dam in British Columbia. Releasing water, which occurred primarily during the summer, enabled an increase of FCRPS hydroelectric generation.

Nonfederal projects debt service increased $25.6 million and reflects terms of the related outstanding debt for Columbia Generating Station and terminated nuclear Projects 1 and 3. Debt service also reflects past debt management decisions and actions under Regional Cooperation Debt efforts. (See Regional Cooperation Debt section in this Management's Discussion and Analysis.)

In February 2018, BPA completed a depreciation study on BPA's transmission and general plant assets. As a result, BPA implemented revised depreciation rates in March 2018 on applicable assets. Depreciation and amortization increased $22.3 million, largely due to the revised depreciation rates.

Fiscal year 2017 operating expenses compared to fiscal year 2016

A comparison of FCRPS operating expenses follows for the fiscal years ended Sept. 30, 2017, and Sept. 30, 2016:

(Millions of dollars)	Fiscal Year 2017	Fiscal Year 2016	Expense Increase (Decrease)	% Change
Operations and maintenance	$ 2,110.7	$ 2,025.3	$ 85.4	4 %
Purchased power	147.4	111.7	35.7	32
Nonfederal projects	241.3	249.2	(7.9)	(3)
Depreciation and amortization	485.0	471.1	13.9	3
Total operating expenses	$ 2,984.4	$ 2,857.3	$ 127.1	4 %

Total operating expenses increased $127.1 million when compared to fiscal year 2016.

Operations and maintenance expense increased $85.4 million.

- Energy Northwest's Columbia Generating Station nuclear power plant's costs increased $59.1 million because 2017 was a refueling year. Refueling occurs biennially and refueling and maintenance expenses are typically higher in refueling years.
- Bureau of Reclamation operations and maintenance costs increased $15.6 million due to work at the Grand Coulee Dam Third Power Plant. This work includes the ongoing mechanical overhaul of generating equipment for Units 22-24, new work related to the alignment of Unit 21, asphalt road repair, and refurbishment of the ring seal gates and fixed wheel gate. During the same period in fiscal year 2016, work was delayed on Unit 24 at Grand Coulee, which had the comparative impact of increasing current year expense.
- Power's transmission acquisition costs increased $24.0 million largely due to increases in certain third-party wheeling costs for delivering energy to transfer service customers. Transfer service customers purchase power from BPA but are not directly connected to the BPA transmission system.
- Corporate costs decreased $16.9 million largely as a result of cost management initiatives and lower contributions for post-retirement benefit programs.

Purchased power expense, including the effects of bookouts, increased $35.7 million mainly due to greater compensation owed to BC Hydro. During fiscal year 2017, when compared with fiscal year 2016, BC Hydro released more water at Arrow Dam in British Columbia, which increased the monetary amount owed to BC Hydro under certain water storage agreements for the value of that released water.

Depreciation and amortization increased $13.9 million primarily due to higher amounts of completed transmission and federal system hydro generation assets in service.

Net interest expense

Fiscal year 2018 net interest expense compared to fiscal year 2017

A comparison of FCRPS net interest expense follows for the fiscal years ended Sept. 30, 2018, and Sept. 30, 2017:

(Millions of dollars)	Fiscal Year 2018	Fiscal Year 2017	Expense Increase (Decrease)	% Change
Interest expense	$ 245.1	$ 285.9	$ (40.8)	(14) %
Allowance for funds used during construction	(31.5)	(33.0)	1.5	(5)
Interest income	(6.3)	(6.1)	(0.2)	3
Net interest expense	$ 207.3	$ 246.8	$ (39.5)	(16) %

Net interest expense decreased $39.5 million when compared to the same period of fiscal year 2017.

At the end of fiscal year 2017, BPA made a large advanced repayment of comparatively higher-interest-rate federal appropriations. This advanced payment has resulted in lower fiscal year 2018 interest expense.

Fiscal year 2017 net interest expense compared to fiscal year 2016

A comparison of FCRPS net interest expense follows for the fiscal years ended Sept. 30, 2017, and Sept. 30, 2016:

(Millions of dollars)	Fiscal Year 2017	Fiscal Year 2016	Expense Increase (Decrease)	% Change
Interest expense	$ 285.9	$ 353.8	$ (67.9)	(19) %
Allowance for funds used during construction	(33.0)	(40.3)	7.3	(18)
Interest income	(6.1)	(15.4)	9.3	(60)
Net interest expense	$ 246.8	$ 298.1	$ (51.3)	(17) %

The net interest expense decrease of $51.3 million was driven primarily by a decrease in interest expense.

This decrease was due primarily to a large advanced repayment of comparatively higher-interest-rate federal appropriations made at the end of fiscal year 2016. In addition, BPA earned less interest income on balances held in the Bonneville Fund as BPA ceased earning more favorable interest-offset credits at the end of fiscal year 2016.

Other Operational Matters

Litigation and related disputes arising from the West Coast Energy Crisis in 1999-2001

On Feb. 5, 2018, BPA signed a settlement agreement with the California Parties (consisting of Southern California Edison (SCE), Pacific Gas & Electric, San Diego Gas & Electric, California Attorney General, and the California Public Utility Commission) to resolve all the long-standing litigation concerning the West Coast Energy Crisis. BPA and the California Parties jointly filed the settlement agreement with FERC on Feb. 8, 2018. Upon FERC's approval of the settlement on May 3, 2018, BPA derecognized a $35.3 million liability to SCE and a corresponding regulatory asset. On May 25, 2018, BPA received $16.3 million under the settlement. BPA had recognized $16.0 million of interest income related to the California Refund proceedings in fiscal year 2012 and recognized an additional $300 thousand of interest income in May 2018.

Hooper Springs transmission line project

In June 2018, BPA entered into agreements with a transmission customer for the construction, ownership, operation and maintenance of a transmission project in Idaho, for which the customer has begun construction. BPA received $20.7 million from the customer during fiscal year 2018, which represents the transfer from BPA to the customer of certain previously incurred costs, primarily related to design and land rights. This amount was recorded among Nonfederal debt proceeds on the Combined Statements of Cash Flows. Upon completion and energization, which is expected in fiscal year 2020, BPA is required to lease the entire capacity of the transmission facilities from the customer. BPA's lease payments to the customer will begin upon energization of the transmission facilities and will continue for 40 years. Per terms of the agreements, BPA's total liability for these facilities will be limited to approximately $65 million. As of Sept. 30, 2018, BPA recognized $21.2 million in both construction work in progress and nonfederal debt related to this project. Current accounting guidance requires the recognition of an asset and liability for certain build-to-suit arrangements, such as for this project.

Liquidity and Capital Resources

Cash and cash equivalents and financial reserves

To ensure BPA is able to meet its financial responsibilities to counterparties and to the U.S. Treasury, BPA relies on measures such as financial reserves, a line of credit with the U.S. Treasury and a CRAC that can raise rate levels on short notice within the rate period, if needed. Financial reserves, a non-GAAP liquidity measure used by BPA management, consist of BPA cash and cash equivalents, investments in U.S. Treasury market-based special securities and deferred borrowing. The U.S. Treasury market-based special securities reflect the market value as if securities were liquidated as of the end of the period. Deferred borrowing represents amounts that BPA is authorized to borrow from the U.S. Treasury for capital expenditures on utility plant assets and for expenditures on certain regulatory assets, primarily related to fish and wildlife, that BPA has incurred but has not borrowed for as of the end of the period. To reduce interest expense, BPA delays borrowing from the U.S. Treasury when possible, which increases BPA's deferred borrowing balance. Over time, BPA intends to borrow these deferred amounts from the U.S.Treasury.

BPA's financial reserves increased $73.9 million during fiscal year 2018.

(Millions of dollars)	As of Sept. 30, 2018	As of Sept. 30, 2017	Increase (Decrease)	% Change
Cash and cash equivalents	$ 804.2	$ 597.9	$ 206.3	35 %
Short-term investments in U.S. Treasury securities	40.2	30.1	10.1	34
	844.4	628.0	216.4	34
Less: Cash and cash equivalents held by USACE and Reclamation	343.2	355.6	(12.4)	(3)
Add: Deferred borrowing	338.4	493.3	(154.9)	(31)
BPA financial reserves balance	$ 839.6	$ 765.7	$ 73.9	10 %

Three-year capital forecast

Planned capital expenditures for the FCRPS over the next three fiscal years for utility plant and for fish and wildlife assets, recorded as regulatory assets, are shown below. Where applicable, the amounts include estimates for capitalized indirect, overhead and interest costs. Actual capital expenditures may differ materially from these estimates based upon a number of factors, including environmental and cultural resource requirements, project lead times, resource availability, outages, dependencies associated with other projects and other factors. Amounts in the table below do not include investments projected by Energy Northwest for Columbia Generating Station.

(Millions of dollars)	Fiscal Year 2019	Fiscal Year 2020	Fiscal Year 2021
Transmission assets	$ 552	$ 547	$ 532
Federal system hydro generation assets	235	242	260
Fish and wildlife	44	47	47
IT and other assets	13	13	13
Total annual capital forecast	$ 844	$ 849	$ 852

Access to capital

BPA makes capital investments to support its multifaceted responsibilities to the region. Initially, BPA relied solely on its ability to borrow from the U.S. Treasury. However, BPA's U.S. Treasury borrowing authority is limited by law and, absent other actions, the limit could be reached within a few years. To assure continued funding necessary for critical infrastructure improvements, BPA has over several years expanded its options. These include nonfederal debt refinancings, lease-purchases, the power prepay program, reserve and revenue financing and asset management strategies to more rigorously prioritize proposed capital investments.

BPA borrowing authority from the U.S. Treasury

BPA is authorized by Congress to issue and sell bonds to the U.S. Treasury, and have outstanding at any one time, up to $7.70 billion aggregate principal amount of bonds. The U.S. Treasury borrowing authority may be used to finance capital programs for the FCRPS. In addition, BPA and the U.S. Treasury have agreed to a liquidity facility for Northwest Power Act expenses in the amount of $750.0 million. Use of the facility is counted within the $7.70 billion overall limit. For capital programs, the related U.S. Treasury debt is term limited depending on the facilities financed: 50 years for USACE and Reclamation capital investments, 35 years for transmission facilities, 15 years for fish and wildlife projects and six years for corporate capital assets.

As of Sept. 30, 2018, BPA had $5.53 billion of bonds outstanding to the U.S. Treasury and $2.17 billion in remaining U.S. Treasury borrowing authority.

Regional Cooperation Debt

Starting in fiscal year 2014, BPA and Energy Northwest 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 BPA ratepayers through BPA's rates. Energy Northwest-related debt refinanced under this effort 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 were and are due in fiscal year 2014 through 2020. Funds made available to BPA as a result of these refinancings have enabled BPA to prepay higher-interest-rate federal obligations. The net effect of refinancing this Regional Cooperation Debt is that both the weighted-average interest rate and the maturity of BPA's overall debt portfolio have been reduced over the life of the program. The refinancings have also preserved or restored U.S. Treasury borrowing authority, enabling BPA to finance much-needed investments in critical infrastructure.

During fiscal year 2018, the Energy Northwest Board of Directors passed a motion of support to extend the Regional Cooperation Debt program from fiscal year 2021 through 2030. Transactions under this extension, if implemented, would make funds available in the Bonneville Fund, within the U.S. Treasury, to continue prepaying a portion of BPA's federal obligations or for directly funding new capital projects.

BPA estimates that the aggregate potential principal amount of future Regional Cooperation Debt refunding bonds to be issued in fiscal years 2019 through 2030 could exceed $4.0 billion.

Expense borrowing arrangement by Energy Northwest

Through the continued use of line-of-credit borrowing arrangements between Energy Northwest and certain banking institutions, BPA continues a program that began in fiscal year 2016 to accelerate payments on comparatively higher-interest-rate federal obligations. If Energy Northwest did not borrow funds under these arrangements, BPA would have provided similar funding to Energy Northwest. In the FCRPS Combined Statements of Cash Flows, these amounts are reported as Deferred payments for Energy Northwest-related O&M and interest. This non-cash item is included among Net cash provided by operating activities as an adjustment in reconciling net revenues to cash flows from operating activities.

In December 2017, Energy Northwest obtained a $141.0 million line of credit to finance operations and maintenance expenses for Columbia Generating Station and interest payments related to certain outstanding bonds for Columbia Generating Station. The line was available for draws until June 30, 2018, and is due to be repaid on or before June 30, 2019. Energy Northwest borrowed the entire $141 million on this line of credit during fiscal year 2018.

In fiscal year 2017, Energy Northwest borrowed $458.3 million on a line of credit to finance operations and maintenance expenses for Columbia Generating Station and interest payments related to certain outstanding bonds for Columbia Generating Station and terminated nuclear Projects 1 and 3. The amounts borrowed incurred interest at variable rates. During fiscal year 2018, BPA funded Energy Northwest's repayment of the entire $458.3 million owed on this line of credit. This amount is recorded as a repayment of nonfederal debt in the FCRPS Combined Statements of Cash Flows.

Lease-Purchase Program

The Lease-Purchase Program enables BPA to provide for continued investment in infrastructure to support a safe and reliable system for the transmission of power without using limited U.S. Treasury borrowing authority. Under this program, BPA generally acts as the construction provider and has entered into lease-purchase arrangements with third parties that issue bonds and other debt instruments to fund construction of specific transmission assets. These third parties include the Port of Morrow, Oregon, the Idaho Energy Resources Authority (IERA), an independent public instrumentality of the state of Idaho, and the Northwest Infrastructure Financing Corporation (NIFC).

U.S. Treasury payment

BPA made its U.S. Treasury payment of $862.4 million for fiscal year 2018, the 35th consecutive year in which BPA made its scheduled payment on time and in full.

(Millions of dollars)	Fiscal Year 2018	Fiscal Year 2017
Scheduled payment		
Principal	$ 294.1	$ 129.8
Interest	225.8	270.6
Irrigation assistance	27.2	50.8
Other FCRPS costs	40.3	27.5
Scheduled payment	587.4	478.7
Advanced payment		
Principal	275.0	778.9
Total Treasury payment	$ 862.4	$ 1,257.6

The scheduled principal payment included $133.0 million that BPA both borrowed and paid in fiscal year 2018. (See Financing activities under the Cash flows section in this Management's Discussion and Analysis.)

The fiscal year 2018 payment also included an unscheduled advance payment of $275.0 million. This was made possible by additional cash in the Bonneville Fund becoming available primarily as a result of the Regional Cooperation Debt Program and the expense borrowing arrangement by Energy Northwest.

Credit ratings

In fiscal year 2018 the rating agencies issued credit ratings on nonfederal debt backed by BPA. The ratings are subject to change, and the most recent ratings were as follows:

- Moody's at Aa1 with a stable outlook (May 2018)
- Fitch at AA with a negative outlook (May 2018)
- Standard & Poor's at AA- with a stable outlook (May 2018)

Cash flows

Fiscal year 2018 cash flows compared to fiscal year 2017

A comparison of FCRPS cash flows follows for the fiscal years ended Sept. 30, 2018, and Sept. 30, 2017:

(Millions of dollars)	Fiscal Year 2018	Fiscal Year 2017	Cash Increase (Decrease)	% Change
Cash and cash equivalents at beginning of year	$ 597.9	$ 579.6	$ 18.3	3 %
Cash flows from				
Operating activities	1,201.8	1,278.9	(77.1)	(6)
Investing activities	(668.3)	(423.7)	(244.6)	58
Financing activities	(327.2)	(836.9)	509.7	(61)
Net increase (decrease) in cash and cash equivalents	206.3	18.3	188.0	1,027
Cash and cash equivalents at end of the year	$ 804.2	$ 597.9	$ 206.3	35 %

Operating activities

Net cash provided by FCRPS operating activities decreased $77.1 million in fiscal year 2018. As a result of the factors previously discussed, the FCRPS had net revenues in fiscal year 2018 of $470.6 million, an increase of $132.0 million from fiscal year 2017. However, net cash provided by operating activities decreased, largely because Energy Northwest borrowed less from an expense borrowing arrangement when compared to fiscal year 2017. Through the end of fiscal years 2018 and 2017, Energy Northwest borrowed $141.0 million and $458.3 million, respectively, which relieved BPA of funding these amounts during the fiscal year. (See Expense borrowing arrangement by Energy Northwest section in this Management's Discussion and Analysis.)

Investing activities

Net cash used for FCRPS investing activities increased $244.6 million in fiscal year 2018. This is mainly due to the fluctuation of purchases and maturities of U.S. Treasury securities, which saw a decrease in net maturities and redemptions to cash of $253.4 million in fiscal year 2018.

The timing and amounts of purchases and maturities of U.S. Treasury securities vary depending on operational and cash management needs. Consistent with past practice and BPA's cash management strategy, BPA continued to invest in U.S. Treasury market-based special securities, which are classified as investments on the Combined Balance Sheets if their original maturity dates exceed 90 days. These securities earn a higher rate of interest than do cash or cash equivalents.

Investment in utility plant increased $11.7 million. Notable projects worked on include upgrades to Ice Harbor Dam and McNary Dam, certain assets being constructed to serve specific transmission customers, turbine work at Chief Joseph Dam and continued work on fiber cable upgrades.

Financing activities

Net cash used for FCRPS financing activities decreased $509.7 million in fiscal year 2018. As described below, various activities contributed to this net decrease.

BPA repaid $281.9 million in federal appropriations in fiscal year 2018, a decrease of $626.8 million from fiscal year 2017. The decrease was primarily due to reduced activity under the Regional Cooperation Debt program in fiscal year 2018.

BPA borrowings from the U.S. Treasury during fiscal year 2018 totaled $809.0 million, an increase of $559.0 million from fiscal year 2017. Of the $809.0 million borrowed, $664.0 million was at variable interest rates and $145.0 million was at fixed interest rates. Borrowings were used to fund investments of:

- $267.6 million for transmission assets
- $523.4 million for federal system hydro generation assets
- $18.0 million for fish and wildlife measures

BPA borrowed $133.0 million from the U.S. Treasury in June 2018 for expense-related purposes. Repayment of this $133.0 million expense borrowing was included in BPA's $287.1 million payment of U.S. Treasury borrowings during fiscal year 2018. BPA did not repay any U.S. Treasury borrowings in 2017.

Nonfederal debt repayment increased $384.4 million, due to increased funding by BPA of Energy Northwest's repayment of expense borrowing arrangements. During fiscal year 2018, BPA funded the repayment of $458.3 million, which relates to amounts borrowed by Energy Northwest in fiscal year 2017. (See Expense borrowing arrangement by Energy Northwest section in this Management's Discussion and Analysis.)

Net customer advances for construction, used to build assets on behalf of certain transmission customers, increased $58.8 million during fiscal year 2018. This increase was due to a greater demand of such projects funded in advance when compared to fiscal year 2017.

Fiscal year 2017 cash flows compared to fiscal year 2016

A comparison of FCRPS cash flows follows for the fiscal years ended Sept. 30, 2017, and Sept. 30, 2016:

(Millions of dollars)	Fiscal Year 2017	Fiscal Year 2016	Cash Increase (Decrease)	% Change
Cash and cash equivalents at beginning of year	$ 579.6	$ 646.7	$ (67.1)	(10) %
Cash flows from				
Operating activities	1,278.9	854.8	424.1	50
Investing activities	(423.7)	(265.4)	(158.3)	60
Financing activities	(836.9)	(656.5)	(180.4)	27
Net increase (decrease) in cash and cash equivalents	18.3	(67.1)	85.4	(127)
Cash and cash equivalents at end of the year	$ 597.9	$ 579.6	$ 18.3	3 %

Operating activities

Net cash provided by FCRPS operating activities increased $424.1 million in fiscal year 2017. The FCRPS had net revenues in fiscal year 2017 of $338.6 million, an increase of $61.4 million from fiscal year 2016. The increase in operating cash flows reflects changes in receivables and unbilled revenues. It also reflects an increase from fiscal year 2016 in accounts payable and other accrued liabilities of $163.8 million. However, the largest factor for the $424.1 million increase was a $199.3 million increase in deferred payments relating to short-term borrowing arrangements entered into by Energy Northwest. The deferred payments relate to cash requirements for Energy Northwest-related operations that Energy Northwest funded via borrowing arrangements with banking institutions instead of by payments from BPA. (See Expense borrowing arrangement by Energy Northwest section in this Management's Discussion and Analysis.)

Investing activities

Net cash used for FCRPS investing activities increased $158.3 million in fiscal year 2017, primarily due to a $165.4 million net change in U.S. Treasury securities.

BPA continues to make significant investments in utility plant assets with $692.0 million invested in fiscal year 2017. Notable projects worked on include fiber cable upgrades, a new turbine at Chief Joseph Dam and upgrades to McNary Dam and Ice Harbor Dam. However, in fiscal year 2017 there was a decrease in utility plant investments of $116.3 million, primarily due to higher fiscal year 2016 capital work on upgrades and additions to the Celilo Converter Station, located in Wasco County, Oregon.

Similar to fiscal year 2016, maturities of U.S. Treasury securities exceeded purchases, as BPA used the net proceeds for operational purposes, including to help make its fiscal year 2017 payment to the U.S. Treasury.

Fiscal year 2017 deposits to the Lease-Purchase Program restricted trust funds increased by $13.2 million. In fiscal year 2017, BPA entered into 12 leases totaling $103.8 million as compared to five lease-purchases totaling $90.6 million entered into for the same period in fiscal year 2016. Receipts from the lease-purchase restricted trust funds decreased by $86.7 million as a result of reduced expenditures to fund continuing Lease-Purchase Program construction.

Financing activities

Net cash used for FCRPS financing activities increased $180.4 million in fiscal year 2017. During fiscal year 2017, BPA continued to repay large amounts of comparatively higher-interest-rate federal appropriations.

BPA repaid $908.7 million in federal appropriations in fiscal year 2017, a decrease of $209.1 million from fiscal year 2016. The decrease is largely due to the $778.9 million paid in advance during fiscal year 2017, a decrease from the $958.7 million of federal appropriations paid in advance during fiscal year 2016. (See U.S. Treasury payment section in this Management's Discussion and Analysis.)

BPA borrowings from the U.S. Treasury during fiscal year 2017 totaled $250.0 million, a decrease of $179.0 million from fiscal year 2016. The entire $250.0 million was at fixed interest rates and was used to finance transmission assets.

Nonfederal debt proceeds decreased $307.5 million during fiscal year 2017. This decrease was primarily due to the fiscal year 2016 Celilo modernization project, as discussed in the fiscal year 2016 section.

Nonfederal debt repayment increased $243.5 million. The increase was primarily as a result of BPA funding the repayment of an Energy Northwest borrowing arrangement. (See Expense borrowing arrangement by Energy Northwest section in this Management's Discussion and Analysis).

In September 2017, one of the consolidated special purpose corporations from which BPA lease-purchases transmission facilities, NIFC VI, sold its lease receivable from BPA, rights to future lease revenue, and title to the leased assets to the IERA, an independent public instrumentality of the State of Idaho. NIFC VI's $200.0 million bank line of credit was replaced by a $200.8 million capital lease with the IERA. The net financial reporting effect of this transaction was a nonfederal debt cash repayment of $0.7 million and a $1.5 million noncash increase to nonfederal debt.

Contractual Obligations and Federal Payments

Amounts shown in the following table include interest expense or represent undiscounted cash flows and may be higher than amounts for these line items reported on the Combined Balance Sheets or described in the related Notes to Financial Statements — Note 5, Asset Retirement Obligations; Note 7, Debt and Appropriations; and Note 9, Residential Exchange Program. Purchase power commitments are a period expense. Irrigation assistance and purchase power commitments are described in Note 13, Commitments and Contingencies.

Fiscal years: *(Millions of dollars)*	2019	2020	2021	2022	2023	2024+	Total
Nonfederal debt	$ 903	$ 1,052	$ 1,221	$ 886	$ 678	$ 5,343	$ 10,083
Borrowings from U.S. Treasury	744	544	425	385	380	5,202	7,680
Federal appropriations	53	53	53	53	52	3,293	3,557
IOU exchange benefits	232	245	245	259	259	1,406	2,646
Irrigation assistance	57	24	15	16	13	239	364
Asset retirement obligations	6	6	6	6	7	198	229
Purchase power commitments	78	44	33	-	-	-	155
REP refund amounts	77	-	-	-	-	-	77
Total	$ 2,150	$ 1,968	$ 1,998	$ 1,605	$ 1,389	$ 15,681	$ 24,791

Critical Accounting Policies

Regulatory accounting

BPA's rates are designed to recover its cost of service. In connection with the rate-setting process, certain current costs or credits may be included in rates for recovery or refund over future periods. Under those circumstances, regulatory assets or liabilities are recorded in accordance with authoritative guidance for regulated operations. Such costs or credits are amortized during the periods they are scheduled in rates.

In order to apply regulatory accounting, an entity must have the statutory authority to establish rates that recover all costs, and rates so established must be charged to and collected from customers. If BPA's rates should become market-based, BPA would review any deferred costs and revenues for possible recognition in the Combined Statement of Revenues and Expenses in that period. Since BPA's rates are not structured to provide a rate of return, regulatory assets are recovered at cost without an additional rate of return. Amortization of these assets and liabilities is reflected in the Combined Statements of Revenues and Expenses.

Revenues

Revenues from sales of power and transmission are recognized either when the product is delivered or the service is provided. Operating revenues include estimates for unbilled power and transmission services that were delivered but not billed by the end of the fiscal year. Accrued unbilled revenues are estimated from forecasts based on multiple factors including streamflows, seasonality, weather, changes in electricity prices, and customer load and usage patterns. Consequently, the amount of accrued unbilled revenues can vary significantly from period to period.

Off-balance-sheet arrangements

The FCRPS is not engaged in any off-balance-sheet arrangements through unconsolidated limited purpose entities.

Adjusted Net Revenues

For fiscal years 2013 through 2017, BPA management reported Adjusted Net Revenues (ANR), a non-GAAP financial measurement. However, beginning with fiscal year 2018 and the BP-18 rate period, BPA no longer calculated ANR but continued to use other non-GAAP measures for internal management purposes. Fiscal year 2017 was the final year for the reporting of ANR.

Report of Independent Auditors

To the Administrator of the
Bonneville Power Administration,
United States Department of Energy

We have audited the accompanying combined financial statements of the Federal Columbia River Power System (FCRPS) which comprise the combined balance sheets as of September 30, 2018 and 2017 and the related combined statements of revenues and expenses and of cash flows for each of the three years in the period ended September 30, 2018.

Management's Responsibility for the Combined Financial Statements

Management is responsible for the preparation and fair presentation of the combined financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of combined financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the combined financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the combined financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the combined financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the combined financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the combined financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the combined financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the combined financial statements referred to above present fairly, in all material respects, the financial position of the Federal Columbia River Power System as of September 30, 2018 and 2017, and the related combined statements of revenues and expenses and of cash flows for each of the three years in the period ended September 30, 2018 in accordance with accounting principles generally accepted in the United States of America.

PricewaterhouseCoopers LLP

October 30, 2018

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Federal Columbia River Power System
Combined Balance Sheets
As of September 30

(Millions of Dollars)

		2018		2017
Assets				
Utility plant				
Completed plant	**$**	**19,307.4**	$	18,820.2
Accumulated depreciation		**(6,883.4)**		(6,588.1)
Net completed plant		**12,424.0**		12,232.1
Construction work in progress		**1,290.1**		1,193.7
Net utility plant		**13,714.1**		13,425.8
Nonfederal generation		**3,350.9**		3,518.7
Current assets				
Cash and cash equivalents		**804.2**		597.9
Short-term investments in U.S. Treasury securities		**40.2**		30.1
Accounts receivable, net of allowance		**75.2**		48.5
Accrued unbilled revenues		**292.4**		297.2
Materials and supplies, at average cost		**109.1**		112.0
Prepaid expenses		**48.2**		55.1
Total current assets		**1,369.3**		1,140.8
Other assets				
Regulatory assets		**5,587.7**		5,961.1
Nonfederal nuclear decommissioning trusts		**377.6**		346.9
Deferred charges and other		**176.8**		278.3
Total other assets		**6,142.1**		6,586.3
Total assets	**$**	**24,576.4**	$	24,671.6

The accompanying notes are an integral part of these financial statements.

Federal Columbia River Power System
Combined Balance Sheets
As of September 30

(Millions of Dollars)

	2018	2017
Capitalization and Liabilities		
Capitalization and long-term liabilities		
Accumulated net revenues	**$ 4,123.8**	$ 3,680.4
Debt		
Federal appropriations	**1,791.7**	2,029.4
Borrowings from U.S. Treasury	**4,955.7**	4,918.6
Nonfederal debt	**7,111.4**	6,871.4
Total capitalization and long-term liabilities	**17,982.6**	17,499.8
Commitments and contingencies (Note 13)		
Current liabilities		
Debt		
Borrowings from U.S. Treasury	**574.9**	90.1
Nonfederal debt	**598.3**	1,390.9
Accounts payable and other	**511.4**	517.4
Total current liabilities	**1,684.6**	1,998.4
Other liabilities		
Regulatory liabilities	**1,912.0**	2,047.0
IOU exchange benefits	**2,256.7**	2,415.7
Asset retirement obligations	**208.0**	191.7
Deferred credits and other	**532.5**	519.0
Total other liabilities	**4,909.2**	5,173.4
Total capitalization and liabilities	**$ 24,576.4**	$ 24,671.6

The accompanying notes are an integral part of these financial statements.

Federal Columbia River Power System
Combined Statements of Revenues and Expenses
For the Years Ended September 30

(Millions of Dollars)

	2018	2017	2016
Operating revenues			
Sales	**$ 3,560.5**	$ 3,440.5	$ 3,283.5
U.S. Treasury credits	**74.7**	58.3	77.2
Miscellaneous revenues	**75.1**	71.0	71.9
Total operating revenues	**3,710.3**	3,569.8	3,432.6
Operating expenses			
Operations and maintenance	**2,098.7**	2,110.7	2,025.3
Purchased power	**159.5**	147.4	111.7
Nonfederal projects	**266.9**	241.3	249.2
Depreciation and amortization	**507.3**	485.0	471.1
Total operating expenses	**3,032.4**	2,984.4	2,857.3
Net operating revenues	**677.9**	585.4	575.3
Interest expense and (income)			
Interest expense	**245.1**	285.9	353.8
Allowance for funds used during construction	**(31.5)**	(33.0)	(40.3)
Interest income	**(6.3)**	(6.1)	(15.4)
Net interest expense	**207.3**	246.8	298.1
Net revenues	**470.6**	338.6	277.2
Accumulated net revenues, beginning of year	**3,680.4**	3,392.6	3,175.7
Irrigation assistance	**(27.2)**	(50.8)	(60.3)
Accumulated net revenues, end of year	**$ 4,123.8**	$ 3,680.4	$ 3,392.6

The accompanying notes are an integral part of these financial statements.

Federal Columbia River Power System
Combined Statements of Cash Flows
For the Years Ended September 30
(Millions of Dollars)

	2018	2017	2016
Cash flows from operating activities			
Net revenues	**$ 470.6**	$ 338.6	$ 277.2
Adjustments to reconcile net revenues to cash provided by operations:			
Depreciation and amortization	**507.3**	485.0	471.1
Amortization of nonfederal projects	**199.5**	67.2	25.9
Deferred payments for Energy Northwest-related O&M and interest	**141.0**	458.3	259.0
Changes in:			
Receivables and unbilled revenues	**(21.9)**	(13.4)	8.3
Materials and supplies	**2.9**	(0.1)	5.0
Prepaid expenses	**6.9**	(33.2)	(4.4)
Accounts payable and other	**7.2**	71.3	(92.5)
Regulatory assets and liabilities	**50.8**	92.3	65.0
IOU exchange benefits	**(159.0)**	(136.2)	(132.0)
Other assets and liabilities	**(3.5)**	(50.9)	(27.8)
Net cash provided by operating activities	**1,201.8**	1,278.9	854.8
Cash flows from investing activities			
Investment in utility plant, including AFUDC	**(703.7)**	(692.0)	(808.3)
U.S. Treasury securities:			
Purchases	**(332.1)**	(1,109.0)	(939.0)
Maturities	**322.0**	1,352.3	1,356.9
Deposits to nonfederal nuclear decommissioning trusts	**(3.8)**	(3.6)	(3.5)
Lease-purchase trust funds:			
Deposits to	**(9.6)**	(103.8)	(90.6)
Receipts from	**58.9**	132.4	219.1
Net cash used for investing activities	**(668.3)**	(423.7)	(265.4)
Cash flows from financing activities			
Federal appropriations:			
Proceeds	**44.2**	71.2	83.0
Repayment	**(281.9)**	(908.7)	(1,117.8)
Borrowings from U.S. Treasury:			
Proceeds	**809.0**	250.0	429.0
Repayment	**(287.1)**	-	(319.0)
Nonfederal debt:			
Proceeds	**30.6**	104.1	411.6
Repayment	**(677.5)**	(293.1)	(49.6)
Customers:			
Net advances for construction	**80.5**	21.7	5.1
Repayment of funds used for construction	**(17.8)**	(31.3)	(38.5)
Irrigation assistance	**(27.2)**	(50.8)	(60.3)
Net cash used for financing activities	**(327.2)**	(836.9)	(656.5)
Net increase (decrease) in cash and cash equivalents	**206.3**	18.3	(67.1)
Cash and cash equivalents at beginning of year	**597.9**	579.6	646.7
Cash and cash equivalents at end of year	**$ 804.2**	$ 597.9	$ 579.6
Supplemental disclosures:			
Cash paid for interest, net of amount capitalized	**$ 275.7**	$ 316.1	$ 376.2
Significant noncash investing and financing activities:			
Nonfederal debt increase for Energy Northwest	**$ 1,257.4**	$ 1,046.2	$ 320.7
Nonfederal debt decrease for Energy Northwest	**$ (1,163.5)**	$ (601.5)	$ (217.9)
Other nonfederal	**$ 0.4**	$ (9.2)	$ 11.6

The accompanying notes are an integral part of these financial statements.

Notes to Financial Statements

1. Summary of Significant Accounting Policies

ACCOUNTING PRINCIPLES

Combination and consolidation of entities

The Federal Columbia River Power System (FCRPS) financial statements combine the accounts of the Bonneville Power Administration (BPA) with the accounts of the Pacific Northwest generating facilities of the U.S. Army Corps of Engineers (USACE) and the Bureau of Reclamation (Reclamation). The FCRPS combined financial statements also include the operations and maintenance costs of the U.S. Fish and Wildlife Service for the Lower Snake River Compensation Plan facilities. Consolidated with BPA is a variable interest entity (VIE) of which BPA is the primary beneficiary, and from which BPA leases certain transmission facilities. (See Note 7, Debt and Appropriations, and Note 8, Variable Interest Entities.)

BPA is a separate and distinct entity within the U.S. Department of Energy; the USACE is part of the U.S. Department of Defense; and Reclamation and U.S. Fish and Wildlife Service are part of the U.S. Department of the Interior. Each of the combined entities is separately managed, but the facilities are operated as an integrated power system with the financial results combined as the FCRPS. BPA is a self-funding federal power marketing administration that purchases, transmits and markets power for the FCRPS. While the costs of USACE and Reclamation projects serve multiple purposes, only the power portion of total project costs are assigned to the FCRPS through cost allocation processes. All intracompany and intercompany accounts and transactions have been eliminated from the FCRPS financial statements.

FCRPS financial statements are prepared in accordance with generally accepted accounting principles (GAAP) of the United States of America. FCRPS financial statements also reflect the Uniform System of Accounts (USoA) applicable to federal entities as prescribed for electric public utilities by the Federal Energy Regulatory Commission (FERC). FCRPS accounting policies also reflect other specific legislation and directives issued by U.S. government agencies. All U.S. government properties and income are tax exempt.

Use of estimates

The preparation of FCRPS financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the FCRPS financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Rates and regulatory authority

BPA establishes separate power and transmission rates in accordance with several statutory directives. Rates proposed by BPA are subject to an extensive formal hearing process, after which they are proposed by BPA and reviewed by FERC. FERC's review is based on BPA statutes that include a requirement that rates must be sufficient to ensure repayment of the federal investment in the FCRPS over a reasonable number of years after first meeting BPA's other costs. After the final FERC approval, BPA's rates may be reviewed by the United States Court of Appeals for the Ninth Circuit (Ninth Circuit Court) if challenged by parties involved in the rate proceedings. Petitions seeking such review must be filed within 90 days of the final FERC approval. The Ninth Circuit Court may either confirm or reject a rate proposed by BPA. BPA's rates are not structured to provide a rate of return on its assets.

In accordance with authoritative guidance for regulated operations, certain costs or credits may be included in rates for recovery or refund over a future period and are recorded as regulatory assets or liabilities. (See Note 4, Effects of Regulation.)

Utility plant

Utility plant is stated at original cost and includes federal system hydro generation assets (i.e., Pacific Northwest generating facilities of the USACE and Reclamation) as well as transmission and other assets. The costs of substantial additions, major replacements and substantial betterments are capitalized. Costs include direct labor and materials; payments to contractors; indirect charges for engineering, supervision and certain overhead items; and an allowance for funds used during construction (AFUDC). Maintenance, repairs and replacements of items determined to be less than major units of property are charged as incurred to Operations and maintenance in the Combined Statements of Revenues and Expenses. When utility plant is retired, the original cost and any net proceeds from the disposition are charged to accumulated depreciation. (See Note 2, Utility Plant.)

Depreciation and amortization

Depreciation of the original cost of generation plant is computed using straight-line methods based on estimated average service lives of the various classes of property. For transmission plant, depreciation of original cost and estimated net cost of removal is computed primarily on the straight-line group life method based on estimated average service lives of the various classes of property. Periodically BPA conducts a depreciation study on transmission and general plant assets. BPA updates depreciation rates based on updated asset lives and net salvage, which considers cost of removal and salvage proceeds. The estimated net cost of removal is included in depreciation expense. (See Note 2, Utility Plant.)

In the event removal costs are expected to exceed salvage proceeds, a reclassification of this negative salvage is made from accumulated depreciation to a regulatory liability. As actual removal costs are incurred, the associated regulatory liability is reduced. (See Note 4, Effects of Regulation.)

Amortization expense relates to certain regulatory assets. (See Note 4, Effects of Regulation.)

Allowance for funds used during construction

AFUDC represents the estimated cost of interest on financing the construction of new assets. AFUDC is based on the construction work in progress balance and is charged to the capitalized cost of the utility plant asset. AFUDC is a reduction of interest expense.

AFUDC is capitalized at one rate for construction funded substantially by BPA and at another rate for USACE and Reclamation construction funded by congressional appropriations. (See Note 2, Utility Plant.) The BPA rate is determined based on the weighted-average cost of borrowing for certain types of debt and deferred credits that are related to BPA construction activity. The rate for appropriated funds is provided each year to BPA by the U.S. Treasury.

Nonfederal generation

BPA is party to long-term contracts for BPA to acquire all of the generating capability of Energy Northwest's Columbia Generating Station (CGS) nuclear power plant and, through June 2032, Lewis County PUD's Cowlitz Falls Hydroelectric Project. These contracts require BPA to meet all of the facilities' operating, maintenance and debt service costs. Operations and maintenance and debt service expenses for these projects are recognized based upon annual total project cash funding requirements, which vary from year to year. The Nonfederal generation assets on the Combined Balance Sheets are amortized over the term of the related outstanding nonfederal debt, with the amortization expense included in Nonfederal projects in the Combined Statements of Revenues and Expenses. (See Note 7, Debt and Appropriations.)

Cash and cash equivalents

Cash amounts for the FCRPS include cash in the Bonneville Power Administration Fund (Bonneville Fund) within the U.S. Treasury and cash from certain unexpended appropriations of the USACE and Reclamation related to the FCRPS. The Bonneville Fund also includes cash equivalents, which consist of investments in non-marketable market-based special securities issued by the U.S. Treasury (market-based specials) with maturities of 90 days or less at the date of investment. The carrying value of cash and cash equivalents approximates fair value.

Concentrations of credit risks

General credit risk

Financial instruments that potentially subject the FCRPS to concentrations of credit risk consist primarily of BPA accounts receivable. Credit risk relates to the loss that might occur as a result of counterparty non-performance.

BPA's accounts receivable are spread across a diverse group of customers throughout the western United States and Canada, and include consumer-owned utilities (COUs), investor-owned utilities (IOUs), power marketers, wind generators and others. BPA's accounts receivable exposure is generally from large and stable counterparties and does not represent a significant concentration of credit risk. During fiscal years 2018, 2017 and 2016, BPA experienced no material losses as a result of any customer defaults or bankruptcy filings.

BPA mitigates credit risk by reviewing counterparties for creditworthiness, establishing credit limits and monitoring credit exposure. To further manage credit risk, BPA obtains credit support, such as letters of credit, parental guarantees, and cash in the form of prepayments, deposits or escrow funds, from some counterparties. BPA monitors counterparties for changes in financial condition and regularly updates credit reviews. (See Note 11, Risk Management and Derivative Instruments.)

Allowance for doubtful accounts

Management reviews accounts receivable to determine if any receivable will potentially be uncollectible. The allowance for doubtful accounts includes amounts estimated through an evaluation of specific customer accounts, based upon the best available facts and circumstances of customers that may be unable to meet their financial obligations, and a reserve for all other customers based on historical experience. The balance is not material to the financial statements.

Derivative instruments

Derivative instruments are measured at fair value and recognized on the Combined Balance Sheets as either Deferred charges and other or as Deferred credits and other except for certain contracts eligible for the normal purchases and normal sales exception under derivatives and hedging accounting guidance. Derivative instruments reported by the FCRPS consist primarily of forward electricity contracts, which are generally considered normal purchases and normal sales if they require physical delivery, are expected to be used or sold in the normal course of business and meet the derivative accounting definition of capacity. Recognition of these contracts in Sales or Purchased power in the Combined Statements of Revenues and Expenses occurs when the contracts settle. (See Note 11, Risk Management and Derivative Instruments.)

Changes in fair value are deferred as either Regulatory assets or Regulatory liabilities on the Combined Balance Sheets in accordance with regulated operations accounting guidance. The FCRPS does not apply hedge accounting.

Fair value

Carrying amounts of current assets and current liabilities approximate fair value based on the short-term nature of these instruments. Fair value measurements are applied to certain financial assets and liabilities and to determine fair value disclosures in accordance with GAAP. When developing fair value measurements, it is BPA's policy to use quoted market prices whenever available or to maximize the use of observable inputs and minimize the use of unobservable inputs when quoted market prices are not available. Fair values are primarily developed using industry standard models that consider various inputs including quoted forward prices for commodities, time value, volatility factors, current market and contractual prices for underlying instruments, market interest rates and yield curves, and credit spreads, as well as other relevant economic measures. (See Note 11, Risk Management and Derivative Instruments and Note 12, Fair Value Measurements.)

Revenues and net revenues

Operating revenues are recorded when power, transmission and related services are delivered and include estimated unbilled revenues. Net revenues over time are committed to payment of operational obligations, including debt for both operating and non-operating nonfederal projects, debt service on bonds BPA issues to the U.S. Treasury, the repayment of federal appropriations for the FCRPS, and the payment of certain irrigation costs.

U.S. Treasury credits

U.S. Treasury credits represent nonpower-related costs that BPA recovers from the U.S. Treasury in accordance with certain laws. BPA applies the credits toward its annual payment to the U.S. Treasury, which is made to pay federal debt, interest and other federal obligations. The primary U.S. Treasury credit is the 4(h)(10)(C) credit provided for in the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act). This Act requires BPA to recover the nonpower portion of expenditures BPA makes for fish and wildlife protection, mitigation and enhancement. Through Section 4(h)(10)(C), the Northwest Power Act ensures that the costs of mitigating these impacts are allocated between the power-related and other purposes of the federal hydroelectric projects of the FCRPS. Power-related costs are recovered in BPA's rates. U.S. Treasury credits are reported as a component of Operating revenues in the Combined Statements of Revenues and Expenses.

Purchased power

Purchased power expense represents wholesale power purchases that are meant to augment the FCRPS resource pool to meet loads and obligations. In addition, this expense includes the costs of certain water storage agreements between BPA and third parties. Purchased power excludes operations and maintenance expenses associated with CGS and the Cowlitz Falls Hydroelectric Project, and with certain contracts for renewable resources that BPA management considers part of the FCRPS resource pool.

Nonfederal projects

Nonfederal projects expense represents the amortization of nonfederal generation assets and regulatory assets for terminated nonfederal nuclear and hydro facilities, as well as the interest expense on the debt related to those assets. This expense varies from year to year and is recognized over the terms of the related outstanding debt, which reflect refinancing actions, if any, undertaken during the fiscal year.

Interest expense

Interest expense includes interest associated with the unpaid balance of federal appropriations scheduled for repayment, interest on bonds issued by BPA to the U.S. Treasury and interest on certain nonfederal debt and liabilities. Reductions to interest expense include the amortization of a capitalization adjustment regulatory liability. (See Note 4, Effects of Regulation.) Interest expense excludes interest on nonfederal debt related to operating or terminated generation assets that is instead reported as a component of nonfederal projects expense. (See Note 7, Debt and Appropriations.)

Interest income

Interest income includes interest earnings on market-based special securities in the Bonneville Fund and interest earnings from other sources. The U.S. Treasury provides investment services to federal government entities such as BPA that have funds on deposit with the U.S. Treasury and have legislative authority to invest those funds. Investments of the funds are generally restricted to special non-marketable securities, also called market-based specials. Interest earnings on U.S. Treasury market-based special investments are based on the stated rates of the individual securities. Beginning with fiscal year 2017, BPA ceased earning interest offset credits on balances in the Bonneville Fund. Through Sept. 30, 2016, however, BPA earned interest offset credits on certain cash balances in the Bonneville Fund that were not invested in market-based specials. These credits reduced some interest payments, associated with federally appropriated investments in the FCRPS, in the amount of the interest earned. The interest offset credits were earned at the weighted-average interest rate of BPA's outstanding U.S. Treasury borrowings. (See Note 3, Investments in U.S. Treasury Securities.)

Residential Exchange Program

In order to provide qualifying regional utilities, primarily IOUs, access to power benefits from the FCRPS, Congress established the Residential Exchange Program (REP) in Section 5(c) of the Northwest Power Act. Whenever a Pacific Northwest electric utility offers to sell power to BPA at the utility's average system cost of resources, BPA purchases such power and offers, in exchange, to sell an equivalent amount of power at BPA's priority firm exchange rate to the utility for resale to that utility's residential and small farm consumers. REP costs are forecast for each year of the rate period and included in the revenue requirement for establishing BPA's power rates. The cost of this program is collected through BPA's power rates. REP costs are recognized when incurred and are included in Operations and maintenance in the Combined Statements of Revenues and Expenses.

In fiscal year 2011, BPA signed the 2012 Residential Exchange Program Settlement Agreement (2012 REP Settlement Agreement), resolving disputes related to the REP. The 2012 REP Settlement Agreement provides for fixed "Scheduled Amounts" payable to the IOUs, as well as fixed "Refund Amounts" payable to the COUs. The Refund Amounts do not reduce rates but are bill credits to qualifying COUs as designated in the 2012 REP Settlement Agreement. (See Note 9, Residential Exchange Program.)

Pension and other postretirement benefits

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 after retirement 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, the FCRPS financial statements do not include accumulated plan assets or liabilities related to the administration of such programs. As part of BPA's scheduled payment each year to the U.S. Treasury for bonds and other purposes, BPA makes contributions to cover the estimated annual unfunded portion of FCRPS pension and postretirement benefits. These contribution amounts are paid to the U.S. Treasury and are recorded as Operations and maintenance in the Combined Statements of Revenues and Expenses during the year to which the payment relates.

RECENT ACCOUNTING PRONOUNCEMENTS

Revenue from contracts with customers

In May 2014, the Financial Accounting Standards Board (FASB) issued an Accounting Standards Update (ASU) on revenue from contracts with customers that supersedes the existing revenue recognition guidance, including most industry-specific guidance. The objective of the new standard is to provide a single, comprehensive revenue recognition model for all contracts with customers to improve comparability within and across industries. The guidance can be applied retrospectively to each prior reporting period presented (full retrospective method) or retrospectively with a cumulative effect adjustment to Accumulated net revenues on the Combined Balance Sheets for initial application of the guidance at the date of initial adoption (modified retrospective method).

Management adopted this standard on Oct. 1, 2018, using a modified retrospective method, with no adjustment to the opening Accumulated net revenues on the Combined Balance Sheets.

The adoption of this guidance will not have a material impact on either the timing or amount of revenues recognized. Management anticipates additional disclosures around the nature, amount, timing and uncertainty of FCRPS revenues and cash flows arising from contracts with customers. These additional disclosures will include the disaggregation of revenues by product.

Financial instruments, recognition and measurement

In January 2016, the FASB issued an ASU to address certain aspects of recognition, measurement, presentation and disclosure of financial instruments. The ASU supersedes existing guidance to classify equity securities as trading or available-for-sale and requires all equity securities to be measured at fair value with changes in fair value recognized through net revenues. In addition, the ASU exempts all entities that are not public business entities from disclosing fair value information for financial instruments measured at amortized cost. Management is evaluating the impact of adopting this guidance, which will be effective in fiscal year 2020.

Leases

In February 2016, the FASB issued an ASU on leases. The primary change under the ASU is the recognition of lease assets and corresponding lease liabilities by lessees for those agreements currently classified as operating leases, which currently are not recognized on the balance sheet. In addition, the guidance requires both quantitative and qualitative disclosures regarding amounts recognized in the financial statements and significant judgments made by management in applying the lease standard. Management anticipates an increase in assets and liabilities and expanded financial disclosure as a result of the guidance. However, the magnitude of change to specific financial statement line items and the impact to financial statement presentation continue to be under evaluation. This guidance will be effective in fiscal year 2020.

Classification of certain cash receipts and cash payments in the statement of cash flows

In August 2016, the FASB issued an ASU to address eight specific cash flow issues with the objective of reducing the existing diversity in practice. Management is evaluating the impact of adopting this guidance, which will be effective in fiscal year 2020.

Restricted cash

In November 2016, the FASB issued an ASU to address the classification and presentation of changes in restricted cash on the statement of cash flows with the objective of reducing the existing diversity in practice. Management is evaluating the impact of adopting this guidance, which will be effective in fiscal year 2020.

Financial instruments, credit losses

In June 2016, the FASB issued an ASU to amend guidance related to credit losses on financial instruments held by a reporting entity. Instead of recognizing credit losses when such losses are probable, the ASU requires assets measured at amortized cost to be presented at the net amount expected to be collected. In addition, credit losses relating to available-for-sale debt securities are required to be recorded through an allowance for credit losses. Management is evaluating the impact of adopting this guidance, which will be effective in fiscal year 2022.

SUBSEQUENT EVENTS

Management has performed an evaluation of events and transactions for potential FCRPS recognition or disclosure through Oct. 30, 2018, which is the date the financial statements were issued.

In October 2018, certain agreements were signed to extend the existing Columbia Basin Fish Accords to the period between October 2018 and Sept. 30, 2022, at the latest. (See Note 13, Commitments and Contingencies.)

2. Utility Plant

As of Sept. 30 — millions of dollars	2018	2017	2018 Estimated average service lives
Completed plant			
Federal system hydro generation assets	$ 9,280.7	$ 9,109.2	75 years
Transmission assets	9,869.3	9,525.8	51 years
Other assets	157.4	185.2	7 years
Completed plant	$ 19,307.4	$ 18,820.2	
Accumulated depreciation			
Federal system hydro generation assets	$ (3,485.1)	$ (3,355.4)	
Transmission assets	(3,319.6)	(3,138.5)	
Other assets	(78.7)	(94.2)	
Accumulated depreciation	$ (6,883.4)	$ (6,588.1)	
Construction work in progress			
Federal system hydro generation assets	$ 668.7	$ 567.5	
Transmission assets	602.1	606.2	
Other assets	19.3	20.0	
Construction work in progress	$ 1,290.1	$ 1,193.7	
Net Utility Plant	$ 13,714.1	$ 13,425.8	

Allowance for funds used during construction

Fiscal year	2018	2017	2016
BPA rate	3.1%	3.1%	3.0%
Appropriated rate	1.3%	0.6%	0.4%

Completed plant assets include transmission capital leased assets of $1.88 billion and $1.71 billion, with accumulated depreciation of $141.0 million and $93.8 million, at Sept. 30, 2018, and 2017, respectively.

In fiscal year 2018, BPA completed a depreciation study on BPA’s transmission and general plant assets. As a result of the study, the average service lives for transmission assets have increased from 48 years to 51 years. However, when also considering changes to net salvage estimates, which include cost of removal and salvage proceeds, depreciation expense increased approximately $19 million in fiscal year 2018. Beginning with fiscal year 2019, results of the depreciation study will increase depreciation expense by approximately $34 million per year.

On May 18, 2017, BPA announced the decision to terminate the I-5 Corridor Reinforcement Project, a proposed 80-mile, 500-kilovolt transmission line that would have stretched from Castle Rock, Washington to Troutdale, Oregon. Cumulative capitalized costs associated with this project of $130.0 million were reclassified in fiscal year 2017 from Construction work in progress to a Regulatory asset on the Combined Balance Sheets, as these costs are expected to be recovered through future rates. (See Note 4, Effects of Regulation.)

3. Investments in U.S. Treasury Securities

As of Sept. 30 — millions of dollars	2018		2017	
	Amortized cost	Fair value	Amortized cost	Fair value
Short-term	$ 40.2	$ 40.2	$ 30.1	$ 30.1

BPA participates in the U.S. Treasury's Federal Investment Program, which provides investment services to federal government entities that have funds on deposit with the U.S. Treasury and statutory authority to invest those funds. Investments of the funds are generally restricted to U.S. Treasury market-based special securities. Beginning on Oct. 1, 2016, all balances in the Bonneville Fund were invested through the Federal Investment Program, and BPA ceased earning interest offset credits as it did during prior years. Instead, for cash and cash equivalents in the Bonneville Fund, BPA only earns interest on cash balances it invests in market-based specials.

Market-based specials held during fiscal years 2018 and 2017 had maturities of up to one year. These securities are carried at amortized cost, reflecting the ability and intent to hold the securities to maturity. The amounts shown in the preceding table exclude U.S. Treasury securities with maturities of 90 days or less at the date of investment, which are considered cash equivalents and are included on the Combined Balance Sheets as part of Cash and cash equivalents. The fair value measurements of investments in U.S. Treasury securities are considered Level 2 in the fair value hierarchy as defined by the accounting guidance for fair value measurements and disclosures. (See Note 12, Fair Value Measurements.)

4. Effects of Regulation

REGULATORY ASSETS

As of Sept. 30 — millions of dollars	2018	2017
IOU exchange benefits	$ 2,256.7	$ 2,415.7
Terminated nuclear facilities	1,709.0	1,786.3
Columbia River Fish Mitigation	755.0	741.0
Fish and wildlife measures	254.2	255.9
Conservation measures	249.6	291.7
Terminated I-5 Corridor Reinforcement Project	130.0	130.0
REP Refund Amounts	75.7	150.0
Spacer damper replacement program	44.9	46.5
Trojan decommissioning and site restoration	38.0	26.9
Federal Employees' Compensation Act	27.0	29.6
Legal claims and settlements	23.0	57.6
Terminated hydro facilities	10.2	11.6
Derivative instruments	7.3	10.7
Other	7.1	7.6
Total	$ 5,587.7	$ 5,961.1

Regulatory assets include the following items:

"**IOU exchange benefits**" reflect amounts to be recovered in rates through 2028 for the IOU exchange benefits liability incurred as part of the 2012 REP Settlement Agreement. These amounts are amortized to operations and maintenance expense. (See Note 9, Residential Exchange Program.)

"**Terminated nuclear facilities**" consist of amounts to be recovered in future rates to satisfy the nonfederal debt for Energy Northwest Projects 1 and 3. These assets are amortized to nonfederal projects expense over the term of the related outstanding debt. (See Note 7, Debt and Appropriations.)

"**Columbia River Fish Mitigation**" is the cost of research and development for fish bypass facilities funded through appropriations since 1989 in accordance with the Energy and Water Development Appropriations Act of 1989, Public Law 100-371. These costs are recovered in rates over 75 years and amortized to depreciation and amortization expense.

"**Fish and wildlife measures**" consist of deferred fish and wildlife project expenses to be recovered in future rates. These costs are amortized to depreciation and amortization expense over a period of 15 years.

"**Conservation measures**" consist of the costs of deferred energy conservation measures to be recovered in future rates. These costs are amortized to depreciation and amortization expense over periods of 12 or 20 years. BPA deferred certain costs of energy conservation measures through fiscal year 2015 and, beginning with fiscal year 2016 and the BP-16 rate period, began expensing such costs as incurred.

"Terminated I-5 Corridor Reinforcement Project" consists of the costs to be recovered in future rates for preliminary construction and related activities for the I-5 Corridor Reinforcement Project. In May 2017, BPA terminated this construction project. These costs were reclassified from Construction work in progress to a Regulatory asset on the Combined Balance Sheets, as such costs are expected to be recovered through future rates. BPA expects that these costs will be amortized to depreciation and amortization expense beginning in fiscal year 2020. The amortization period will be determined prior to the BP-20 rate proposal, which is likely to conclude in fiscal year 2019.

"**REP Refund Amounts**" are amounts that were established in the 2012 REP Settlement Agreement. (See Note 9, Residential Exchange Program.) These amounts are recovered in rates through 2019 from IOUs as a reduction in their IOU Exchange benefits and are equal to the regulatory liability for REP Refund Amounts to COUs.

"**Spacer damper replacement program**" consists of costs to replace deteriorated spacer dampers and are recovered in future rates under the Spacer Damper Replacement Program. These costs are amortized to depreciation and amortization expense over a period of 25 or 30 years.

"**Trojan decommissioning and site restoration**" reflects the amount to be recovered in future rates for funding the asset retirement obligation (ARO) liability related to the former Trojan nuclear facility. This amount equals the associated liability. (See Note 5, Asset Retirement Obligations.)

"**Federal Employees' Compensation Act**" reflects the actuarial estimated amount of future payments for current recipients of BPA's worker compensation benefits. This amount equals the associated liability, and related expenses are recorded to operations and maintenance expense as payments are made. (See Note 6, Deferred Charges and Other.)

"**Legal claims and settlements**" reflect amounts to be recovered in future rates to satisfy accrued liabilities related to legal claims and settlements. These costs will be recovered and amortized to operations and maintenance expense over a period established by BPA. The balance as of Sept. 30, 2018, also reflects a decrease of $35.3 million for the California refund settlement that occurred during fiscal year 2018. (See Note 13, Commitments and Contingencies.)

"**Terminated hydro facilities"** consist of the amounts to be recovered in future rates to satisfy nonfederal debt for the Northern Wasco hydro project, for which BPA ceased its participation as recipient of the project's electric power. These assets are amortized to nonfederal projects expense over the term of the related outstanding debt. (See Note 7, Debt and Appropriations.)

"**Derivative instruments**" reflect the unrealized losses from BPA's derivative portfolio. These amounts are deferred over the corresponding underlying contract delivery months. (See Note 11, Risk Management and Derivative Instruments.)

REGULATORY LIABILITIES

As of Sept. 30 — millions of dollars	2018	2017
Capitalization adjustment	$ 1,147.5	$ 1,212.4
Accumulated plant removal costs	455.5	434.3
Decommissioning and site restoration	210.2	184.7
REP Refund Amounts to COUs	75.7	150.0
Derivative instruments	16.6	59.2
Other	6.5	6.4
Total	$ 1,912.0	$ 2,047.0

Regulatory liabilities include the following items:

"**Capitalization adjustment**" is the difference between the outstanding balance of federal appropriations, plus $100 million, before and after refinancing under the BPA Refinancing Section of the Omnibus Consolidated Rescissions and Appropriations Act of 1996 (Refinancing Act), 16 U.S.C. 838(l). Consistent with treatment in BPA's power and transmission rate cases, this adjustment is amortized over a 40-year period through fiscal year 2036. Amortization of the capitalization adjustment as a reduction to interest expense was $64.9 million each year for fiscal years 2018, 2017 and 2016.

"**Accumulated plant removal costs**" are the amounts previously collected through rates as part of depreciation expense. The liability will be reduced as actual removal costs are incurred. (See Note 1, Summary of Significant Accounting Policies.)

"**Decommissioning and site restoration**" is the amount previously collected through rates and invested in the related nonfederal nuclear decommissioning trusts in excess of the ARO balances for (i) CGS decommissioning and site restoration, and (ii) Energy Northwest Projects 1 and 4 site restoration. (See Note 5, Asset Retirement Obligations.)

"**REP Refund Amounts to COUs**" are the amounts previously collected through rates that are owed to qualifying COUs and will be provided as future bill credits through fiscal year 2019 as established in the 2012 REP Settlement Agreement. These amounts are equal to regulatory assets for REP Refund Amounts. (See Note 9, Residential Exchange Program.)

"**Derivative instruments**" reflect the unrealized gains from BPA's derivative portfolio. These amounts are deferred over the corresponding underlying contract delivery months. (See Note 11, Risk Management and Derivative Instruments.)

5. Asset Retirement Obligations

As of Sept. 30 — millions of dollars	2018	2017
Beginning Balance	$ 191.7	$ 185.7
Activities:		
Accretion	9.9	9.4
Expenditures	(2.8)	(3.9)
Revisions	9.2	0.5
Ending Balance	$ 208.0	$ 191.7

AROs are recognized based on the estimated fair value of the dismantlement and restoration costs associated with the retirement of certain tangible long-lived assets. The liability is adjusted for any revisions, expenditures and the passage of time. The FCRPS also has tangible long-lived assets such as federal hydro projects and transmission assets without an associated ARO because no obligation exists to remove these assets.

As of Sept. 30 — millions of dollars	2018	2017
CGS decommissioning and site restoration	$ 165.9	$ 157.8
Trojan decommissioning	38.0	26.9
Energy Northwest Projects 1 and 4 site restoration	4.1	7.0
Total	$ 208.0	$ 191.7

NONFEDERAL NUCLEAR DECOMMISSIONING TRUSTS

As of Sept. 30 — millions of dollars	2018		2017	
	Amortized cost	Fair value	Amortized cost	Fair value
Equity index funds	$ 215.7	$ 280.0	$ 217.5	$ 266.3
Bond index funds	52.6	50.7	61.4	60.9
U.S. government obligation mutual funds	18.4	16.7	21.0	19.7
Cash and cash equivalents	30.2	30.2	—	—
Total	$ 316.9	$ 377.6	$ 299.9	$ 346.9

These assets represent trust fund account balances for decommissioning and site restoration costs. External trust fund accounts for decommissioning and site restoration costs for CGS are funded monthly and are charged to operations and maintenance expense. The decommissioning trust fund account was established to provide for decommissioning at the end of the project's safe storage period in accordance with Nuclear Regulatory Commission (NRC) requirements. The NRC requires that this period be no longer than 60 years from the time the plant ceases operations. Decommissioning funding requirements for CGS are based on an NRC decommissioning cost estimate and the license termination date, which is in December 2043. The CGS trust fund accounts are funded and managed by BPA in accordance with NRC requirements and site certification agreements.

The investment securities in the decommissioning and site restoration trust fund accounts are classified as available-for-sale and recorded at fair value in accordance with accounting guidance for investments, debt and equity securities. Net unrealized and realized gains and losses on these investment securities are recognized as adjustments to the related regulatory liability, which represents the excess of the amount previously collected through rates over the current ARO balance. (See Note 4, Effects of Regulation.)

Contribution payments to the CGS trust fund accounts for fiscal years 2018, 2017 and 2016 were $3.8 million, $3.6 million and $3.5 million, respectively. BPA and Energy Northwest have no obligation to make further payments into the site restoration fund for Energy Northwest Projects 1 and 4.

Based on an agreement in place, BPA directly funds Eugene Water and Electric Board's 30 percent share of Trojan's decommissioning costs through current rates. Decommissioning costs are included in Operations and maintenance in the Combined Statements of Revenues and Expenses.

6. Deferred Charges and Other

As of Sept. 30 — millions of dollars	2018	2017
Lease-Purchase trust funds	$ 116.2	$ 165.1
Funding agreements	21.5	20.8
Derivative instruments	16.6	59.2
Spectrum Relocation Fund	12.2	12.8
Other	10.3	4.4
Settlements receivable	—	16.0
Total	$ 176.8	$ 278.3

Deferred Charges and Other include the following items:

"**Lease-Purchase trust funds**" are investments held in separate trust accounts outside the Bonneville Fund for the construction of leased transmission assets, the use of which BPA has acquired under lease-purchase agreements. The amounts held in trust are also used in part for debt service payments during the construction period and include an investment fund mainly for future principal and interest debt service payments. (See Note 7, Debt and Appropriations.) Interest income and realized and unrealized gains or losses on amounts held in trust for construction are recorded as AFUDC. Interest income and gains and losses on other trust balances are recorded as either income or expense in the period when earned.

Investments classified as trading were $95.5 million and $144.5 million, and those classified as held to maturity were $19.6 million and $19.7 million, at Sept. 30, 2018, and 2017, respectively. Trading investments are held for construction purposes and are stated at fair value based on quoted market prices. (See Note 12, Fair Value Measurements.) As of Sept. 30, 2018, and 2017, trust balances also included cash and cash equivalents of $1.1 million and $0.9 million, respectively.

"**Funding agreements**" represent deferred costs associated with BPA's contractual obligations to determine the feasibility of certain joint transmission projects.

"**Derivative instruments**" represent unrealized gains from BPA's derivative portfolio, which includes physical power purchase and sale transactions.

"**Spectrum Relocation Fund**" was created to reimburse certain federal agencies such as BPA for the costs of replacing radio communication equipment displaced as a result of radio band frequencies no longer available to the affected federal agencies. These amounts previously received from the U.S. Treasury are held in the Bonneville Fund for the sole purpose of constructing replacement assets.

7. Debt and Appropriations

As of Sept. 30 — millions of dollars		2018		2017	
	Terms	Carrying Value	Weighted-Average Interest Rate	Carrying Value	Weighted-Average Interest Rate
Nonfederal debt					
Nonfederal generation:					
Columbia Generating Station	1.7 – 6.8% through 2044	$ 3,468.5	4.3%	$ 3,853.6	3.9%
Cowlitz Falls Hydro Project	4.0 – 5.3% through 2032	72.1	5.1	75.6	5.1
Terminated nonfederal generation:					
Nuclear Project 1	1.7 – 5.0% through 2028	795.6	4.9	838.5	4.8
Nuclear Project 3	1.7 – 5.0% through 2028	914.1	5.0	1,044.2	4.8
Northern Wasco Hydro Project	2.2 – 5.0% through 2024	11.4	4.2	12.8	3.9
Lease-Purchase Program:					
Capital lease obligations	1.5 – 6.1% through 2042	2,022.4	2.7	2,012.3	2.7
NIFC debt	5.5% through 2034	118.8	5.5	118.8	5.4
Other capital lease obligations	3.4 – 7.4% through 2043	37.5	5.0	39.4	5.0
Other financial liability	5.6% (not yet scheduled)	21.2	5.6	—	—
Customer prepaid power purchases	4.3 – 4.6% through 2028	248.1	4.5	267.1	4.5
Total Nonfederal debt		$ 7,709.7	4.1%	$ 8,262.3	3.8%
Federal debt and appropriations					
Borrowings from U.S. Treasury	1.1 – 5.9% through 2048	$ 5,530.6	3.2%	$ 5,008.7	3.2%
Federal appropriations	2.4 – 7.2% through 2068	1,354.6	3.9	1,583.5	4.1
Federal appropriations (not scheduled for repayment)		437.1	n/a	445.9	n/a
Total Federal debt and appropriations		$ 7,322.3	3.4%	$ 7,038.1	3.4%
Total debt and appropriations		$ 15,032.0	3.7%	$ 15,300.4	3.7%

Nonfederal generation and Terminated nonfederal generation

BPA is party to long-term contracts for BPA to acquire all of the generating capability of Energy Northwest's Columbia Generating Station and, through June 2032, all of Lewis County PUD's Cowlitz Falls Hydroelectric Project. These contracts require that BPA meet all of the operating, maintenance and debt service costs for these projects. Under certain agreements, BPA also has financial responsibility for meeting all costs of Energy Northwest's Projects 1 and 3, including debt service costs of bonds and other financial instruments issued for the projects, even though these projects have been terminated. BPA is also required by a "Settlement and Termination Agreement" between BPA and Northern Wasco PUD to pay amounts equal to annual debt service on certain bonds of the Northern Wasco Hydro Project. Under the Settlement and Termination Agreement, BPA ceased its participation in this project.

BPA recognizes expenses for these nonfederal generation and terminated nonfederal generation projects based on annual total project cash funding requirements, which include debt service and operating and maintenance expense. BPA recognized operating and maintenance expense for these projects of $272.5 million, $322.3 million and $263.2 million in fiscal years 2018, 2017 and 2016, respectively, which is included in Operations and maintenance in the Combined Statements of Revenues and Expenses. Debt service expense for all projects of $266.9 million, $241.3 million and $249.2 million for fiscal years 2018, 2017 and 2016, respectively, is reported as Nonfederal projects in the Combined Statements of Revenues and Expenses. On the Combined Balance Sheets, related assets for operating projects are included in Nonfederal generation. Related assets for terminated generation are included in Regulatory assets. (See Note 4, Effects of Regulation.)

As a result of debt management actions taken by Energy Northwest under a Regional Cooperation Debt effort with BPA, amounts otherwise collected in BPA's power and transmission rates during fiscal years 2018 and 2017 were not used to fund the Energy Northwest-related principal payments as originally scheduled, and as included in rates. Instead, these principal amounts were refinanced to fiscal year 2035 at the latest. Because of these debt management actions and the borrowings by Energy Northwest described below, BPA was able to prepay comparatively higher-interest-rate federal appropriations during fiscal years 2018 and 2017.

Energy Northwest debt of $2.26 billion is callable, in whole or in part, at Energy Northwest's option, on call dates between July 2019 and July 2028 at 100 percent of the principal amount.

Borrowings by Energy Northwest for expense-related purposes

As of Sept. 30 — millions of dollars	2018	2017
Amounts outstanding[1]	$ 141.0	$ 458.3
Approximate variable interest rate	2.4%	1.6%

[1] Amounts outstanding at September 30 of each fiscal year are included in the applicable nonfederal debt amounts shown in the table at the beginning of Note 7, Debt and Appropriations.

During fiscal years 2018 and 2017, Energy Northwest funded operations and maintenance for CGS and interest payments on certain bonds with line-of-credit borrowing arrangements from banking institutions. Fiscal year 2018 interest payments funded with these arrangements relates to CGS. Fiscal year 2017 interest payments relate to CGS and terminated nuclear Projects 1 and 3. These arrangements were due to be repaid on or before June 30, 2019, and June 30, 2018, respectively. In fiscal year 2018, BPA funded the repayment of $458.3 million that Energy Northwest borrowed under its fiscal year 2017 borrowing arrangement.

Energy Northwest-related expenses recorded in the FCRPS Combined Statements of Revenues and Expenses were not affected by the foregoing borrowing arrangements. Instead of providing funds to Energy Northwest for operations and maintenance and interest payment purposes, BPA will fund the repayment of the borrowing arrangements.

Lease-Purchase Program and Other capital lease obligations

Under the Lease-Purchase Program, BPA has incurred capital lease obligations for lease-purchase transactions with certain third-party entities. These transactions are primarily with the Port of Morrow, a port district located in Morrow County, Oregon, and the Idaho Energy Resources Authority (IERA), an independent public instrumentality of the State of Idaho, for transmission facilities, including lines, substations and general plant assets. These capital lease obligations are paid from the rental payments made by BPA. The facilities themselves are not security for the payment of these obligations. The lease-purchase agreements contain provisions that allow BPA to purchase the related assets at any time during each lease term for a bargain purchase price plus the value of the related outstanding debt instrument. (See Note 8, Variable Interest Entities.)

Under the Lease-Purchase Program, BPA consolidates one special purpose corporation, referred to as Northwest Infrastructure Financing Corporation (NIFC). As of Sept. 30, 2018, the NIFC had $119.6 million of bonds outstanding, including debt issuance costs. The lease rental payments from BPA are pledged to the payment of the debt, but the facilities themselves do not secure the debt. The NIFC bonds are reported as NIFC debt and are subject to redemption by NIFC, in whole or in part, at any date, at the higher of the principal amount of the bonds or the present value of the bonds discounted using the U.S. Treasury rate plus a premium of 12.5 basis points.

In fiscal year 2017, NIFC VI, which BPA previously consolidated, sold its lease receivables, rights to future lease revenues and title to its leased assets to the IERA. As a result, the $200.0 million NIFC VI bank line of credit was extinguished, and the new arrangement was reported as a capital lease obligation of $200.8 million instead of as NIFC debt. This transaction resulted in significant other nonfederal noncash activities on the Combined Statements of Cash Flows of $1.5 million for fiscal years 2017. This transaction also resulted in an increase of $207.4 million to transmission capital leased assets in fiscal year 2017 with an immaterial net change to Completed plant on the Combined Balance Sheets. (See Note 2, Utility Plant.)

On the Combined Balance Sheets, capital lease obligations and NIFC debt are included in Nonfederal debt. The related assets are included in Utility plant and in Deferred charges and other for unspent funds held in trust accounts outside the Bonneville Fund. The capital lease obligations expire on various dates through 2043.

Completed plant assets reported as transmission capital leased assets are described in Note 2, Utility Plant.

Other financial liability

In June 2018, BPA entered into agreements with a transmission customer for the construction, ownership, operation and maintenance of a transmission project in Idaho, for which the customer has begun construction. BPA is the accounting owner of the assets during construction. This project includes a substation and transmission lines and is expected to be under construction by the customer until fiscal year 2020, at the earliest. Upon completion and energization, BPA is required to lease the entire capacity of the transmission facilities from the customer. As of Sept. 30, 2018, BPA recognized $21.2 million in both construction work in progress and nonfederal debt related to this project. Per terms of the agreements, BPA's total liability for these facilities will be limited to approximately $65 million. BPA's lease payments to the customer will begin upon energization of the transmission facilities and will continue for 40 years.

Customer prepaid power purchases

During fiscal year 2013, BPA entered into agreements with four regional COUs for the advance payment of portions of their power purchases. Under this program, customers purchased prepaid power in blocks through fiscal year 2028. For each block purchased, BPA repays the prepayment, with interest, as monthly fixed credits on the customers' power bills.

In March 2013, BPA received $340.0 million representing $474.3 million in scheduled credits for blocks purchased by customers. BPA accounts for the prepayment proceeds as a financing transaction and reports the value of the obligations associated with the fixed credits as a prepayment liability. Interest expense is recognized using a weighted-average effective interest rate of 4.5 percent. The prepaid liability is reduced and the credits are applied as power is delivered through fiscal year 2028.

Borrowings from U.S. Treasury

BPA is authorized by Congress to issue and sell bonds to the U.S. Treasury, and have outstanding at any one time, up to $7.70 billion aggregate principal amount of bonds. Of the $7.70 billion in U.S. Treasury borrowing authority, $1.25 billion is available for electric power conservation and renewable resources, including capital investment at the FCRPS hydroelectric facilities owned by the USACE and Reclamation, and $6.45 billion is available for BPA's transmission capital program and to implement BPA's authorities under the Northwest Power Act. Of the $7.70 billion, $750.0 million can be issued to finance Northwest Power Act related expenses. The interest on BPA's outstanding bonds is set at rates comparable to rates on debt issued by other comparable federal government institutions at the time of issuance. Bonds can be issued with call options.

As of Sept. 30, 2018, and 2017, no bonds outstanding related to Northwest Power Act expenses.

As of Sept. 30, 2018, $1.46 billion of variable-rate bonds are callable by BPA at par value on their interest repricing dates, which occurs every six months. The remaining $4.07 billion of bonds are callable by BPA at a premium or discount, which is calculated based on the current government agency rates for the remaining term to maturity at the time the bonds are called. As of Sept. 30, 2017, $800.0 million of variable-rate bonds were outstanding.

In fiscal year 2018, BPA called $98.0 million of bonds it had previously issued to the U.S. Treasury. As a result, BPA recognized a noncash gain of $0.2 million. During fiscal year 2017, BPA did not call any such bonds.

During fiscal years 2018 and 2017, BPA refinanced $34.0 million and $96.1 million of U.S. Treasury bonds in noncash transactions with the U.S. Treasury, which resulted in no gain or loss for either year. BPA does not report these refinanced bonds as part of its annual payment to the U.S. Treasury.

Federal appropriations

Federal appropriations reflect the responsibility that BPA has to repay congressionally appropriated amounts in the FCRPS. Federal appropriations repayment obligations consist primarily of the remaining unpaid power portion of USACE and Reclamation capital investments funded through congressional appropriations and include appropriations for Columbia River Fish Mitigation as allocated to the power purpose of the USACE's FCRPS hydroelectric projects. BPA's repayment obligation begins when capital investments are completed and placed into service.

BPA is obligated to establish rates to repay to the U.S. Treasury appropriations for federal generation and transmission plant investments within a specified repayment period, which is the reasonably expected service life of the facilities, not to exceed 50 years. Federal appropriations may be paid early without penalty at their par value (i.e. carrying value for federal appropriations) as part of BPA's payment to the U.S. Treasury. BPA repaid appropriations early in fiscal years 2018 and 2017. BPA establishes schedules for the repayment of federal appropriations when it establishes its power and transmission rates. These schedules can change depending on whether appropriations have been prepaid or deferred. Interest on appropriated amounts begins accruing when the related assets are placed into service.

As of Sept. 30 — millions of dollars	Maturing Nonfederal debt excluding capital leases	Future minimum lease payments under capital leases	Borrowings from U.S. Treasury	Federal appropriations	Total
2019	$ 585.8	$ 69.9	$ 574.9	$ -	$ 1,230.6
2020	386.0	435.5	389.0	-	1,210.5
2021	383.0	623.7	280.0	-	1,286.7
2022	383.4	304.2	247.0	0.4	935.0
2023	398.0	99.7	250.0	-	747.7
2024 and thereafter	3,514.4	973.1	3,789.7	1,791.3	10,068.5
Total	$ 5,650.6	$ 2,506.1	$ 5,530.6	$ 1,791.7	$ 15,479.0
Less: Executory costs	-	25.5	-	-	25.5
Less: Amount representing interest	-	420.7	-	-	420.7
Less: Unamortized debt issuance cost	0.8	-	-	-	0.8
Present value of debt	5,649.8	2,059.9	5,530.6	1,791.7	15,032.0
Less: Current portion	585.8	12.5	574.9	-	1,173.2
Long-term debt	$ 5,064.0	$ 2,047.4	$ 4,955.7	$ 1,791.7	$ 13,858.8

Fair value of debt and appropriations

See Note 12, Fair Value Measurements, for a comparison of carrying value to fair value for debt. Due to the current par value call provision on BPA's federal appropriations, the fair value of BPA's federal appropriations is equal to the carrying value. This call provision allows BPA to prepay appropriations repayment obligations without premiums or a mark-to-market adjustment.

8. Variable Interest Entities

A VIE is an entity that does not have sufficient equity at risk to finance its activities without additional financial support or whose equity investors lack characteristics of a controlling financial interest. An enterprise that has a controlling interest is known as the VIE's primary beneficiary and is required to consolidate the VIE.

Management reviews executed lease-purchase agreements with nonfederal entities for VIE accounting impacts. BPA has determined that NIFC is a VIE and that BPA is the primary beneficiary of NIFC. As such, this entity is consolidated. The key factors in this determination are BPA's ability to take contractual actions that significantly impact the economic, commercial and operating activities of NIFC and BPA's obligation to absorb losses that could be significant to NIFC. Additionally, BPA's lease-purchase agreements with NIFC obligate BPA to absorb the operational and commercial risks, and thus potentially significant benefits or losses associated with the underlying transmission facilities. BPA also has exclusive use and control of the facilities during the lease periods and has indemnified NIFC for all construction and operating risks associated with its transmission facilities.

Amounts related to NIFC include Lease-Purchase trust funds and other assets of $20.4 million and Nonfederal debt of $118.8 million as of both Sept. 30, 2018, and 2017. BPA has also entered into lease-purchase agreements with Port of Morrow and IERA, which are nonfederal entities. These entities are governmental and, in accordance with VIE accounting guidance, are therefore not consolidated into the FCRPS financial statements. (See Note 7, Debt and Appropriations.)

BPA has entered into power purchase agreements with wind farm-related VIEs, which, because of their pricing arrangements, provide that BPA absorb commodity price risk from the perspective of the counterparty entities. However, BPA management has concluded that in no instance does BPA have the power to control the most significant operating and maintenance activities of these entities. Therefore, BPA is not the primary beneficiary and does not consolidate these entities. Additionally BPA does not provide, and does not plan to provide, any additional financial support to these entities beyond what BPA is contractually obligated to pay. Thus, BPA has no exposure to loss on contracts with these VIEs. Expenses related to VIEs for which BPA is not the primary beneficiary were $21.8 million, $19.8 million and $21.6 million in fiscal years 2018, 2017 and 2016, respectively. These expenses were recorded to operations and maintenance as BPA management considers the related purchases to be part of the FCRPS resource pool.

9. Residential Exchange Program

REP SCHEDULED AMOUNTS

As of Sept. 30 — millions of dollars	
2019	$ 232.2
2020	245.2
2021	245.2
2022	259.0
2023	259.0
2024 through 2028	1,405.5
Subtotal of annual payments	2,646.1
Less: Discount for present value	389.4
IOU exchange benefits	$ 2,256.7

BACKGROUND

In 1981 and as provided in the Northwest Power Act, BPA began to implement the REP through various contracts with eligible regional utility customers. BPA's implementation of the REP has been the subject of various litigations and settlement agreements.

2012 RESIDENTIAL EXCHANGE PROGRAM SETTLEMENT AGREEMENT

Beginning in April 2010, over 50 litigants and other regional parties entered into mediation to resolve numerous disputes over the REP. In February 2011 the parties reached a final settlement agreement – the 2012 Residential Exchange Program Settlement Agreement (2012 REP Settlement Agreement), and in July 2011 BPA also signed the 2012 REP Settlement Agreement. As a result of the settlement, BPA recorded an associated long-term IOU exchange benefits liability and corresponding regulatory asset of $3.07 billion. Under the 2012 REP Settlement Agreement, the IOUs' REP benefits were determined for fiscal years 2012-2028 (also referred to herein as Scheduled Amounts). The Scheduled Amounts started at $182.1 million for fiscal year 2012 and increase over time to $286.1 million for fiscal year 2028. As provided in the 2012 REP Settlement Agreement, the Scheduled Amounts are established for each IOU based on the IOU's average system cost, its residential exchange load and BPA's applicable Priority Firm Exchange rate. The Scheduled Amounts total $4.07 billion over the 17-year period through fiscal year 2028, with remaining Scheduled Amounts as of Sept. 30, 2018, totaling $2.65 billion. Amounts recorded of $2.26 billion at Sept. 30, 2018, represent the present value of future cash outflows for these IOUs exchange benefits.

REP SETTLEMENT AGREEMENT REFUND AMOUNTS

In addition to Scheduled Amounts, the 2012 REP Settlement Agreement calls for Refund Amounts to be paid to COUs in the amount of $76.5 million each year from fiscal year 2012 through fiscal year 2019. The Refund Amounts were established as a regulatory asset and regulatory liability for the refunds that will be provided to COU customers as bill credits. The 2012 REP Settlement Agreement established Refund Amounts totaling $612.3 million, with remaining refunds as of Sept. 30, 2018, totaling $76.5 million. Amounts recorded as a regulatory liability of $75.7 million at Sept. 30, 2018, represent the present value of future cash flows for the amounts to be refunded to COUs.

10. Deferred Credits and Other

As of Sept. 30 — millions of dollars		2018		2017
Customer reimbursable projects	$	199.8	$	191.8
Interconnection agreements		182.6		134.6
Third AC Intertie capacity agreements		95.4		94.9
Federal Employees' Compensation Act		27.0		29.6
Fiber optic leasing fees		13.3		15.3
Derivative instruments		7.3		10.7
Other		7.1		7.1
Legal claims and settlements		—		35.0
Total	$	532.5	$	519.0

Deferred Credits and Other include the following items:

"**Customer reimbursable projects**" consist of advances received from customers where either the customer or BPA will own the resulting asset. If the customer will own the asset under construction, the revenue is recognized as the expenditures are incurred. If BPA will own the resulting asset, the revenue is recognized over the life of the asset once the corresponding asset is placed in service.

"**Interconnection agreements**" are advances for requested new network upgrades and interconnections. These advances accrue interest and will be returned as cash or credits against future transmission service on the new or upgraded lines.

"**Third AC Intertie capacity agreements**" reflect unearned revenue from customers related to the Third AC Intertie transmission line capacity project. Revenue is recognized over an estimated 51-year life of the related assets, which are generally added and retired each year.

"**Federal Employees' Compensation Act**" reflects the actuarial estimated amount of future payments for current recipients of BPA's worker compensation benefits.

"**Fiber optic leasing fees**" reflect unearned revenue related to the leasing of fiber optic cables. Revenue is recognized over the lease terms extending through 2024.

"**Derivative instruments**" reflect the unrealized loss of the derivative portfolio, which primarily includes physical power purchase and sale transactions.

11. Risk Management and Derivative Instruments

BPA is exposed to various forms of market risks related to commodity prices and volumes, counterparty credit, and interest rates. Non-performance risk, which includes credit risk, is described in Note 12, Fair Value Measurements. BPA has formalized risk management processes in place to manage agency risks, including the use of derivative instruments. The following sections describe BPA's exposure to and management of certain risks.

RISK MANAGEMENT

Due to the operational risk posed by fluctuations in river flows and electricity market prices, net revenues that result from underlying surplus or deficit energy positions are inherently uncertain. BPA's Risk Oversight Committee has responsibility for the oversight of market risk and determines the transactional risk policy and control environment at BPA. Through simulation and analysis of the hydro supply system, experienced business and risk managers install market price risk measures to capture additional market-related risks, including credit and event risk.

COMMODITY PRICE RISK AND VOLUMETRIC RISK

BPA has exposure to commodity price risk through fluctuations in electricity market prices that affect the value of energy bought and sold. Volumetric risk is the uncertainty of energy production from the hydro system. The combination of the two results in net revenue uncertainty. BPA routinely models commodity price risk and volumetric risk through parametric calculations, Monte Carlo simulations and general market observations to derive net revenues at risk, mark-to-market valuations, value at risk and other metrics as appropriate. These metrics capture the uncertainty around single point forecasts in order to monitor changes in the revenue risk profile from changes in market price, market price volatility and forecasted hydro generation. BPA measures and monitors the output of these methods on a regular basis. In order to mitigate revenue uncertainty that is beyond BPA's risk tolerance, BPA enters into short-term and long-term purchase and sale contracts by using instruments such as forwards, futures, swaps, and options.

CREDIT RISK

Credit risk relates to the loss that might occur as a result of counterparty non-performance. BPA mitigates credit risk by reviewing counterparties for creditworthiness, establishing credit limits and monitoring credit exposure. To further manage credit risk, BPA obtains credit support, such as letters of credit, parental guarantees, and cash in the form of prepayments, deposits or escrow funds, from some counterparties. BPA monitors counterparties for changes in financial condition and regularly updates credit reviews. BPA uses scoring models, publicly available financial information and external ratings from major credit rating agencies to determine appropriate levels of credit for its counterparties.

During fiscal year 2018, BPA experienced no material losses as a result of any customer defaults or bankruptcy filings. As of Sept. 30, 2018, BPA had $48.0 million in credit exposure related to purchase and sale contracts after taking into account netting rights. Of this credit exposure, $14.4 million was related to sub-investment grade counterparties who provided letters of credit that exceed BPA's exposure to these counterparties. The letters of credit serve as a guarantee arrangement and mitigate BPA's credit risk exposure to these counterparties.

INTEREST RATE RISK

BPA has the ability to issue variable rate bonds to the U.S. Treasury. BPA may manage the interest rate risk presented by variable rate U.S. Treasury debt by holding U.S. Treasury security investments with a similar maturity profile. These U.S. Treasury investments earn interest that is correlated, but not identical, to the interest rate paid on U.S. Treasury variable rate debt. (See Note 3, Investments in U.S. Treasury Securities and Note 7, Debt and Appropriations.) Energy Northwest may also issue variable rate debt for which BPA is expected to fund the repayment. No variable rate debt has been issued in connection with Energy Northwest or the Lease-Purchase Program.

DERIVATIVE INSTRUMENTS

Commodity Contracts

BPA's forward electricity contracts are eligible for the normal purchases and normal sales exception if they require physical delivery, are expected to be used or sold by BPA in the normal course of business and meet the derivative accounting definition of capacity described in the derivatives and hedging accounting guidance. Transactions for which BPA has elected the normal purchases and normal sales exception are not recorded at fair value in the financial statements. Recognition of these contracts in Sales or Purchased power in the Combined Statements of Revenues and Expenses occurs when the contracts are delivered and settled.

For derivative instruments recorded at fair value, BPA records unrealized gains and losses in Regulatory assets and Regulatory liabilities on the Combined Balance Sheets. Realized gains and losses are included in Sales and Purchased power in the Combined Statements of Revenues and Expenses as the contracts are delivered and settled.

When available, quoted market prices or prices obtained through external sources are used to measure a contract's fair value. For contracts without available quoted market prices, fair value is determined based on internally developed modeled prices. (See Note 12, Fair Value Measurements.)

As of Sept. 30, 2018, the derivative commodity contracts recorded at fair value totaled 3.3 million megawatt hours (MWh), gross basis, with delivery months extending to December 2019.

On the Combined Balance Sheets, BPA reports gross fair value amounts of derivative instruments subject to a master netting arrangement, excluding contracts designated as normal purchases or normal sales. (See Note 6, Deferred Charges and Other and Note 10, Deferred Credits and Other.) In the event of default or termination, contracts with the same counterparty are offset and net settle through a single payment. BPA does not offset cash collateral against recognized derivative instruments with the same counterparty under the master netting arrangements.

If netted by counterparty, BPA's derivative position would have resulted in assets of $16.5 million and $59.2 million, and liabilities of $7.1 million and $10.7 million as of Sept. 30, 2018, and 2017, respectively. (See Note 4, Effects of Regulation.)

12. Fair Value Measurements

BPA applies fair value measurements and disclosures accounting guidance to certain assets and liabilities including assets held in trust funds, commodity derivative instruments, debt and other items. BPA maximizes the use of observable inputs and minimizes the use of unobservable inputs when measuring fair value. Fair value is based on actively quoted market prices, if available. In the absence of actively quoted market prices, BPA seeks price information from external sources, including broker quotes and industry publications. If pricing information from external sources is not available, BPA uses forward price curves derived from internal models based on perceived pricing relationships to major trading hubs.

BPA also utilizes the following fair value hierarchy, which prioritizes the inputs to valuation techniques used to measure fair value, into three broad levels:

Level 1 – Quoted prices (unadjusted) in active markets for identical assets and liabilities that BPA has the ability to access at the measurement date. Instruments categorized in Level 1 primarily consist of financial instruments such as exchange-traded financial futures, fixed income investments, equity mutual funds and money market funds.

Level 2 – Inputs other than quoted prices included within Level 1 that are either directly or indirectly observable for the asset or liability, including quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in inactive markets, inputs other than quoted prices that are observable for the asset or liability, and inputs that are derived from observable market data by correlation or other means. Instruments categorized in Level 2 include certain non-exchange traded commodity derivatives and certain agency, corporate and municipal securities as part of the Lease-Purchase trust funds investments. Fair value for certain non-exchange traded derivatives is based on forward exchange market prices and broker quotes adjusted and discounted. Lease-Purchase trust funds investments are based on a market input evaluation pricing methodology using a combination of observable market data such as current market trade data, reported bid/ask spreads, and institutional bid information.

Level 3 – Unobservable inputs for the asset or liability, including situations where there is little, if any, market activity for the asset or liability. Instruments categorized in Level 3 include long-dated and modeled commodity contracts where inputs into the valuation are adjusted market prices plus an adder.

The fair value hierarchy gives the highest priority to quoted prices in active markets (Level 1) and the lowest priority to unobservable data (Level 3). In some cases, the inputs used to measure fair value might fall in different levels of the fair value hierarchy. The lowest level input that is significant to a fair value measurement in its entirety determines the applicable level in the fair value hierarchy. Assessing the significance of a particular input to the fair value measurement in its entirety requires judgment, considering factors specific to the asset or liability.

BPA includes non-performance risk when calculating fair value measurements. This includes a credit risk adjustment based on the credit spreads of BPA’s counterparties when in an unrealized gain position, or on BPA’s own credit spread when in an unrealized loss position. BPA’s assessment of non-performance risk is generally derived from the credit default swap market and from bond market credit spreads. The impact of the credit risk adjustments for all outstanding derivatives was immaterial to the fair value calculation at Sept. 30, 2018, and 2017. There were no transfers between Level 1, Level 2 or Level 3 during fiscal years 2018 and 2017.

ASSETS AND LIABILITIES MEASURED AT FAIR VALUE ON A RECURRING BASIS

As of Sept. 30, 2018 — millions of dollars

		Level 1		Level 2		Level 3		Total
Assets								
Nonfederal nuclear decommissioning trusts								
Equity index funds	$	280.0	$	—	$	—	$	280.0
Bond index funds		50.7		—		—		50.7
Cash and cash equivalents		30.2		—		—		30.2
U.S. government obligation mutual funds		16.7		—		—		16.7
Lease-Purchase trust funds								
U.S. government obligations		—		88.0		—		88.0
Corporate obligations		—		7.5		—		7.5
Derivative instruments [1]								
Commodity contracts		0.1		12.6		3.9		16.6
Total	$	377.7	$	108.1	$	3.9	$	489.7
Liabilities								
Derivative instruments [1]								
Commodity contracts	$	—	$	(7.2)	$	(0.1)	$	(7.3)
Total	$	—	$	(7.2)	$	(0.1)	$	(7.3)

As *of Sept. 30, 2017 — millions of dollars*

		Level 1		Level 2		Level 3		Total
Assets								
Nonfederal nuclear decommissioning trusts								
Equity index funds	$	266.3	$	—	$	—	$	266.3
Bond index funds		60.9		—		—		60.9
U.S. government obligation mutual funds		19.7		—		—		19.7
Lease-Purchase trust funds								
U.S. government obligations		—		120.3		—		120.3
Corporate obligations		—		19.6		—		19.6
Municipal obligations		—		4.6		—		4.6
Derivative instruments [1]								
Commodity contracts		—		57.6		1.6		59.2
Total	$	346.9	$	202.1	$	1.6	$	550.6
Liabilities								
Derivative instruments [1]								
Commodity contracts	$	(0.1)	$	(10.6)	$	—	$	(10.7)
Total	$	(0.1)	$	(10.6)	$	—	$	(10.7)

[1] Derivative instruments assets and liabilities are included in Deferred charges and other and Deferred credits and other, respectively, on the Combined Balance Sheets. See Note 11, Risk Management and Derivative Instruments for more information related to BPA's risk management strategy and use of derivative instruments.

Level 3 derivative commodity contracts are power contracts measured at fair value on a recurring basis using the California-Oregon Border (COB) forward price curves. They include power contracts delivering to illiquid trading points or contracts without available market transactions for the entire delivery period; therefore, they are considered unobservable. Forward prices are considered a key component to contract valuations. All valuation pricing data is generated internally by BPA's risk management organization.

The risk management organization constructs the forward price curve through the use of available market prices, broker quotes and bid/offer spreads. In periods where market prices or broker quotes are not available, the risk management organization derives monthly prices by applying seasonal shaping based on historical broker quotes and spreads. Long-term prices are derived from internally developed or commercial models with both internal and external data inputs. BPA management believes this approach maximizes the use of pricing information from external sources and is currently the best option for valuation. Significant increases or decreases in the inputs would result in significantly higher or lower fair value measurements.

Forward power prices are influenced by, among other factors, the price of natural gas, seasonality, hydro forecasts, expectations of demand growth, and planned changes in the regional generating plants.

COMMODITY CONTRACTS

The following table presents the changes in the assets and liabilities measured at fair value on a recurring basis and included in the Level 3 fair value category.

As of Sept. 30 — millions of dollars	2018	2017
Beginning Balance	$ 1.6	$ —
Changes in unrealized gains (losses)[1]	2.2	1.6
Ending Balance	$ 3.8	$ 1.6

[1] Unrealized gains and losses are included in Regulatory assets and Regulatory liabilities on the Combined Balance Sheets. Realized gains and losses are included in Sales and Purchased power, respectively, in the Combined Statements of Revenues and Expenses.

DEBT

As of Sept. 30 — millions of dollars	2018		2017	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Nonfederal Debt				
Nonfederal generation:				
Columbia Generating Station	$ 3,468.5	$ 3,579.8	$ 3,853.6	$ 4,178.2
Cowlitz Falls Project	72.1	79.9	75.6	88.2
Terminated nonfederal generation:				
Nuclear Project 1	795.6	897.2	838.5	988.5
Nuclear Project 3	914.1	1,060.4	1,044.2	1,170.7
Northern Wasco Hydro Project	11.4	12.2	12.8	14.2
Lease-Purchase Program:				
NIFC debt	118.8	134.6	118.8	143.4
Other financial liability	21.2	21.2	—	—
Customer prepaid power purchases	248.1	248.1	267.1	267.1
Federal debt				
Borrowings from U.S. Treasury	$ 5,530.6	$ 5,720.9	$ 5,008.7	$ 5,424.0

The fair value measurements described above are considered Level 2 in the fair value hierarchy.

The fair value of Nonfederal debt, excluding the Customer prepaid power purchases, is based on a market input evaluation pricing methodology using a combination of market observable data such as current market trade data, reported bid/ask spreads and institutional bid information.

The fair value of Other financial liability is based upon terms of a transmission construction agreement that BPA signed with a customer in fiscal year 2018 and is equal to the carrying value.

The opportunity to participate in the Customer prepaid power purchase program was made to a subset of BPA's power customers with repayment terms through billing credits extending to fiscal year 2028. Management believes that the customer prepaid power purchases are specific to BPA's operating environment and are nontransferable. As a result, the carrying value of customer prepay power purchases is equal to its fair value.

The fair value of Borrowings from U.S. Treasury is based on discounted future cash flows using interest rates for similar debt that could have been issued at Sept. 30, 2018, and 2017.

13. Commitments and Contingencies

INTEGRATED FISH AND WILDLIFE PROGRAM

The Northwest Power Act directs BPA to protect, mitigate and enhance fish and wildlife and their habitats to the extent they are affected by the federal hydroelectric projects on the Columbia River and its tributaries from which BPA markets power. BPA makes expenditures and incurs other costs for fish and wildlife protection and mitigation that are consistent with the purposes of the Northwest Power Act and the Pacific Northwest Power and Conservation Council's Columbia River Basin Fish and Wildlife Program. In addition, certain fish and wildlife species that inhabit the Columbia River Basin are listed under the Endangered Species Act (ESA) as threatened or endangered. BPA makes expenditures and incurs other costs related to power purposes to comply with the ESA and implement certain biological opinions (BiOp) prepared by the National Oceanic and Atmospheric Administration Fisheries Service and the U.S. Fish and Wildlife Service in furtherance of the ESA. BPA's total commitment including timing of payments under the Northwest Power Act, ESA and BiOp fluctuates because it is in part dependent on river flows and water conditions. As of Sept. 30, 2018, BPA has long-term fish and wildlife agreements with estimated contractual commitments of $288 million, which are likely to result in future expenses or regulatory assets. These agreements will expire at various dates through fiscal year 2027 and do not include the Columbia Basin Fish Accords extension agreements, which are described below.

In October 2018, BPA and its federal partners USACE and Reclamation signed extension agreements with current Accords partners, namely certain states and tribes, to extend the Columbia Basin Fish Accords. The existing agreements expired Sept. 30, 2018, and were extended from October 2018 until Sept. 30, 2022, at the latest. The extension agreements commit nearly $450 million for fish and wildlife protection and mitigation, which is likely to result in future expenses or regulatory assets. No amounts relating to the extension agreements were recognized in the fiscal year 2018 financial statements, as they were executed subsequent to the fiscal year end.

IRRIGATION ASSISTANCE

Scheduled distributions

As of Sept. 30 — millions of dollars	
2019	$ 56.6
2020	24.3
2021	14.8
2022	16.0
2023	12.9
2024 through 2045	239.4
Total	$ 364.0

As directed by law, BPA is required to establish rates sufficient to make distributions to the U.S. Treasury for original construction costs of certain Pacific Northwest irrigation projects for which the costs have been determined to be beyond the irrigators' ability to pay. These irrigation distributions do not specifically relate to power generation. In establishing power rates, particular statutory provisions guide the assumptions that BPA makes as to the amount and timing of such distributions. Accordingly, these distributions are not considered to be regular operating costs of the power program and are treated as distributions from accumulated net revenues when paid. Future irrigation assistance payments are scheduled to total $364.0 million over a maximum of 66 years since the time the irrigation facilities were completed and placed in service. BPA is required by the Grand Coulee Dam - Third Powerplant Act to demonstrate that reimbursable costs of the FCRPS will be returned to the U.S. Treasury from BPA within the period prescribed by law. BPA is required to make a similar demonstration for the costs of irrigation projects to the extent the costs have been determined to be beyond the irrigators' ability to repay. These requirements are met by conducting power repayment studies including schedules of distributions at the proposed rates to demonstrate repayment of principal within the allowable repayment period. Irrigation assistance excludes $40.3 million for Teton Dam, which failed prior to completion and for which BPA has no obligation to repay.

FIRM PURCHASE POWER COMMITMENTS

As of Sept. 30 — millions of dollars	
2019	$ 77.6
2020	43.9
2021	33.6
Total	$ 155.1

BPA periodically enters into long-term commitments to purchase power for future delivery. When BPA forecasts a resource shortage, based on its planned contractual obligations for a period and the historical water record for the Columbia River basin, BPA takes a variety of operational and business steps to cover a potential shortage including entering into power purchase commitments. Additionally, under BPA's current Tiered Rates Methodology and its current Regional Dialogue power sales contracts, BPA's customers may request that BPA meet their power requirements in excess of the Rate Period High Water Mark load under their contract. For these Above High Water Mark load requests, BPA may meet such requests by entering into power purchase commitments. The preceding table includes firm purchase power agreements of known costs that are currently in place to assist in meeting expected future obligations under BPA's current long-term power sales contracts. Included are two purchases made specifically to meet BPA's commitments to sell power at Tier 2 rates in fiscal year 2019 and two purchases to meet load obligations in Idaho. The expenses associated with Tier 2 purchases to meet prior commitments were $29.9 million, $26.6 million and $22.1 million for fiscal years 2018, 2017 and 2016, respectively. The expenses associated with the Idaho purchases, which are not included in the Tier 2 amounts, commenced July 1, 2016, and were $44.2 million, $45.3 million and $9.0 million for fiscal years 2018, 2017 and 2016, respectively. BPA has several other purchase agreements with wind-powered and other generating facilities that are not included in the preceding table as payments are based on the variable amount of future energy generated and as there are no minimum payments required.

ENERGY EFFICIENCY PROGRAM

BPA is required by the Northwest Power Act to meet the net firm power load requirements of its customers in the Pacific Northwest. BPA is authorized to help meet its net firm power load through the acquisition of electric conservation. BPA makes available a portfolio of initiatives and infrastructure support activities to its customers to ensure the conservation targets established in the Northwest Power and Conservation Council's then-current Power Plan are achieved. The Council released the Seventh Power Plan in fiscal year 2016. These initiatives and activities are often executed via conservation commitments made by BPA to its customers through $78 million of agreements with utility customers and contractors that provide support in the way of energy efficiency program research, development and implementation. The timing of the payments under these commitments is not fixed or determinable, and these agreements will expire at various dates through fiscal year 2022.

1989 ENERGY NORTHWEST LETTER AGREEMENT

In 1989, BPA agreed with Energy Northwest that, in the event any participant shall be unable for any reason, or shall fail or refuse, to pay to Energy Northwest any amount due from such participant under its net billing agreement for which a net billing credit or cash payment to such participant has been provided by BPA, BPA will be obligated to pay the unpaid amount in cash directly to Energy Northwest.

NUCLEAR INSURANCE

BPA is a member of the Nuclear Electric Insurance Limited (NEIL), a mutual insurance company established to provide insurance coverage for nuclear power plants. The insurance policies purchased from NEIL by BPA include: 1) Primary Property and Decontamination Liability Insurance; 2) Decontamination Liability, Decommissioning Liability and Excess Property Insurance; and 3) NEIL I Accidental Outage Insurance.

Under each insurance policy, BPA could be subject to a retrospective premium assessment in the event that a member-insured loss exceeds reinsurance and reserves held by NEIL. The maximum assessment for the Primary Property and Decontamination Liability Insurance policy is $19.3 million. For the Decontamination Liability, Decommissioning Liability and Excess Property Insurance policy, the maximum assessment is $6.5 million. For the NEIL I Accidental Outage Insurance policy, the maximum assessment is $5.1 million.

As a separate requirement, BPA is liable under the Nuclear Regulatory Commission's indemnity for public liability coverage under the Price-Anderson Act. In the event of a nuclear accident resulting in public liability losses exceeding $450.0 million, BPA could be subject to a retrospective assessment of up to $121.3 million limited to $19.0 million per incident within one calendar year. Assessments would be included in BPA's costs and recovered through rates. As of Sept. 30, 2018, there have been no assessments to BPA under any of these events.

ENVIRONMENTAL MATTERS

From time to time there are sites for which BPA, the USACE or Reclamation may be identified as potential responsible parties. Costs associated with cleanup of sites are not expected to be material to the FCRPS financial statements. As such, no material liability has been recorded.

INDEMNIFICATION AGREEMENTS

BPA, USACE and Reclamation have provided indemnifications of varying scope and terms in contracts with customers, vendors, lessors, trustees, and other parties with respect to certain matters, including, but not limited to, losses arising out of particular actions taken on behalf of the FCRPS, certain circumstances related to Energy Northwest Projects, and in connection with lease-purchases. Because of the absence of a maximum obligation in the provisions, management is not able to reasonably estimate the overall maximum potential future payments. Based on historical experience and current evaluation of circumstances, management believes that, as of Sept. 30, 2018, the likelihood is remote that the FCRPS would incur any significant costs with respect to such indemnities. No liability has been recorded in the financial statements with respect to these indemnification provisions.

LITIGATION

Southern California Edison

Southern California Edison (SCE) filed two separate actions in the U.S. Court of Federal Claims against BPA related to a power sales and exchange agreement (Sale and Exchange Agreement) between BPA and SCE. The actions challenged: 1) BPA's decision to convert the contract from a sale of power to an exchange of power as provided for under the terms of the contract (Conversion Claim); and 2) BPA's termination of the Sales and Exchange Agreement due to SCE's nonperformance (Termination Claim).

In 2006, BPA and SCE executed an agreement to settle the claims wherein BPA would make a payment of $28.5 million plus applicable interest to SCE if certain identified conditions were met, including a final resolution of BPA's claims pending in the California refund proceedings and related litigation as discussed below. As of Sept. 30, 2017, BPA had recorded a liability of $35.0 million, including interest, on the basis that all conditions had been met except the final resolution in the California refund proceedings and related litigation, which management considered probable. BPA had also reported an offsetting regulatory asset. In May 2018, the California refund settlement (as discussed below) was approved by FERC and $41.1 million was transferred from the California Power Exchange escrow accounts to pay SCE and satisfy SCE's pending claim. As a result, BPA reduced its 2006 SCE settlement liability and offsetting regulatory asset to $0 during fiscal year 2018 with no impact to net revenues.

California parties' refund claims

BPA was a party to proceedings at FERC that sought refunds for sales into markets operated by the California Independent System Operator and the California Power Exchange during the California energy crisis of 2000-2001. In BPA v. FERC, 422 F.3d 908 (9th Cir. 2005) the Ninth Circuit Court found that governmental utilities, like BPA, were not subject to FERC's statutory authority to order market participants to pay refunds. As a consequence of the Ninth Circuit Court's decision, three California investor-owned utilities along with the State of California filed breach of contract claims in the United States Court of Federal Claims against BPA. The complaints, filed in 2007, alleged that BPA was contractually obligated to pay refunds on transactions where BPA received amounts in excess of mitigated market clearing prices retroactively established by FERC.

After various legal proceedings, BPA signed a settlement agreement on Feb. 5, 2018, to resolve the California parties' refund claims. The agreement provided for: (i) the transfer of $41.1 million to SCE to resolve the SCE litigation described above, (ii) a payment of $16.3 million to BPA related to interest income due from the California Independent System Operator and the California Power Exchange for power sales that occurred in 2000-2001, and (iii) payments of $457 thousand to other market participants. All of these amounts were paid from the California Power Exchange escrow accounts holding monies due and owing BPA and others in the market related to this matter. The settlement agreement was approved by FERC on May 3, 2018, and on May 25, 2018, BPA received $16.3 million under the settlement. As a result, all remaining claims were withdrawn. BPA had previously accrued $16.0 million as a settlement receivable and interest income, and the $300 thousand increase represents the fiscal year 2018 impact to interest income.

Rates

BPA's rates are frequently the subject of litigation. Most of the litigation involves claims that BPA's rates are inconsistent with statutory directives, are not supported by substantial evidence in the record, or are arbitrary and capricious. It is the opinion of BPA's general counsel that if any rate were to be rejected, the remedy accorded would be a remand to BPA to establish a new rate. BPA's flexibility in establishing rates could be restricted by the rejection of a BPA rate, depending on the grounds for the rejection. BPA is unable to predict, however, what new rate it would establish if a rate were rejected. If BPA were to establish a rate that was lower than the rejected rate, a petitioner may be entitled to a refund in the amount overpaid; however, BPA is required by law to set rates to meet all of its costs. Thus, it is the opinion of BPA's general counsel that BPA may be required to increase its rates to seek to recover the amount of any such refunds, if needed.

OTHER

The FCRPS may be affected by various other legal claims, actions and complaints, including litigation under the Endangered Species Act, which may include BPA as a named party. Certain of these cases may involve material amounts. Management is unable to predict whether the FCRPS will avoid adverse outcomes in these legal matters; however, management believes that disposition of pending matters will not have a materially adverse effect on the FCRPS financial position or results of operations for fiscal year 2018.

Judgments and settlements are included in FCRPS costs and recovered through rates. As of Sept. 30, 2018, no material liability has been recorded for the above legal matters.

Federal Repayment

Revenue requirement study

The submission of BPA's annual report fulfills the reporting requirements of the Grand Coulee Dam – Third Powerplant Act, Public Law 89-448. The revenue requirement study demonstrates repayment of federal investment. It reflects revenues and costs consistent with BPA's 2018 Final Wholesale Power and Transmission Rate Proposals of July 26, 2017, for fiscal years 2018 and 2019. (See BP-18-E-BPA-02 for Power and BP-18-E-BPA-09 / BP-18-E-BPA-09-E01 for Transmission.) The final proposals filed with FERC contain the official amortization schedule for the rate periods. FERC granted final approval to the Power Rates Schedules and the Transmission, Ancillary and Control Area Service Rate Schedules on March 19, 2018.

Repayment demonstration

BPA is required by Public Law 89-448 to demonstrate that reimbursable costs of the FCRPS will be returned to the U.S. Treasury from BPA net revenues within the period prescribed by law. BPA is required to make a similar demonstration for the costs of irrigation projects that are beyond the ability of irrigation water users to repay. These requirements are met by conducting power repayment studies including schedules of payments at the proposed rates to demonstrate repayment of principal within the allowable repayment period.

Since 1985, BPA has prepared separate repayment demonstrations for generation and transmission in accordance with an order issued by FERC on Jan. 27, 1984 (26 FERC 61,096).

Repayment policy

BPA's repayment policy is reflected in its generation and transmission revenue requirements and respective rate levels. This policy requires that FCRPS revenues be sufficient to:

1. Pay the cost of operating and maintaining the power system.
2. Pay the cost of obtaining power through purchase and exchange agreements (nonfederal projects) and transmission services that BPA is obtaining under capitalized lease-purchase agreements.
3. Pay interest on and repay outstanding U.S. Treasury borrowings to finance transmission system construction, conservation, environmental, direct-funded Corps and Reclamation improvements, and fish and wildlife projects.
4. Pay interest on the unrepaid investment in facilities financed with appropriated funds. (Federal hydroelectric projects all were financed with appropriated funds, as were BPA transmission facilities constructed before 1978.)
5. Pay, with interest, any outstanding deferral of interest expense.
6. Repay the power investment in each federal hydroelectric project with interest within 50 years after the project is placed in service (except for the Chandler project, which has a legislated repayment period of 66 years).

7. Repay each increment of the investment in the BPA transmission system financed with appropriated funds with interest within the average service life of the associated transmission plant (51 years).
8. Repay the appropriated investment in each replacement at a federal hydroelectric project within its service life.
9. Repay irrigation investment at federal reclamation projects assigned for payment from FCRPS revenues, after all other elements in the priority of payments are paid and within the same period established for irrigation water users to repay their share of construction costs. These periods range from 40 to 66 years, with 50 years being applicable to most of the irrigation payment assistance.

Investments bearing the highest interest rate will be repaid first, to the extent possible, while still completing repayment of each increment of investment within its prescribed repayment period.

Repayment obligation

BPA's rates must be designed to collect sufficient revenues to return separately the power and transmission costs of each FCRPS investment and each irrigation assistance obligation within the time prescribed by law.

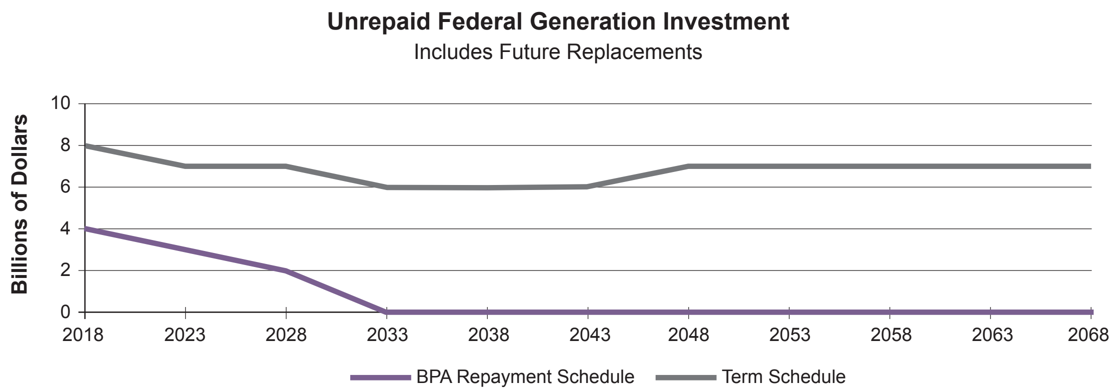
If existing rates are not likely to meet this requirement BPA must reduce costs, adjust its rates, or both. However, irrigation assistance payments from projects authorized subsequent to Public Law 89-448 are to be scheduled to not require an increase in the BPA power rate level. Comparing BPA's repayment schedule for the unrepaid capital appropriations and bonds with a "term schedule" demonstrates that the federal investment will be repaid within the time allowed. A term schedule represents a repayment schedule whereby each capitalized appropriation or bond would be repaid in the year it is due.

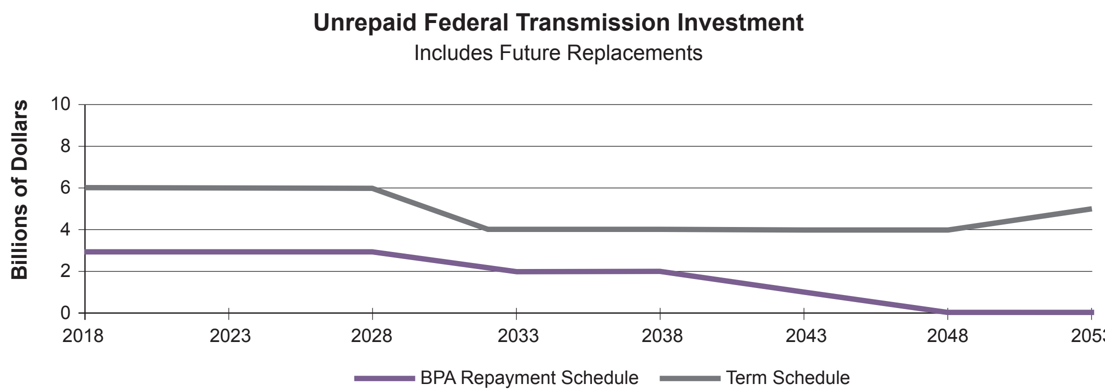
Reporting requirements of Public Law 89-448 are met so long as the unrepaid FCRPS investment and irrigation assistance resulting from BPA's repayment schedule are less than or equal to the allowable unrepaid investment in each year. While the comparison is illustrated by the following graphs representing total FCRPS generation and total FCRPS transmission investment, the actual comparison is performed on an investment-by-investment basis.

Repayment of FCRPS investment

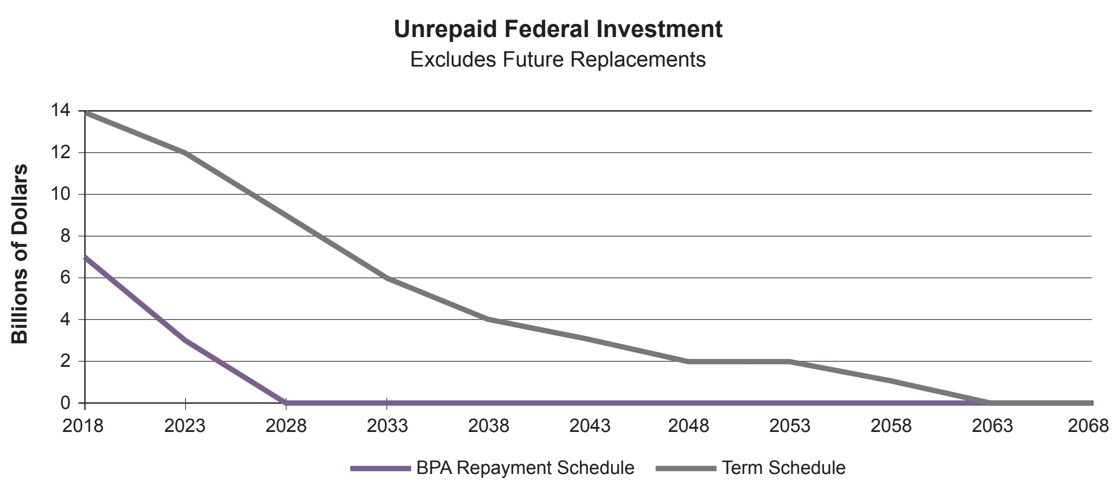
The graphs for Unrepaid Federal Generation and Transmission Investment illustrate that unrepaid investment resulting from BPA's generation and transmission repayment schedules is less than the allowable unrepaid investment. This demonstrates that BPA's rates are sufficient to recover all FCRPS investment costs on or before their due dates.

The term schedule lines in the graphs show how much of the obligation can remain unpaid in accordance with the repayment periods for the generation and transmission components of the FCRPS. The BPA repayment schedule lines show how much of the obligation remains to be repaid according to BPA's repayment schedules. In each year, BPA's repayment schedule is ahead of the term schedule. This occurs because BPA plans repayment both to comply with obligation due dates and to minimize costs over the entire repayment study horizon (35 years for transmission, 50 years for generation). Repaying highest interest-bearing investments first, to the extent possible, minimizes costs. Consequently, some investments are repaid before their due dates while assuring that all other obligations are repaid by their due dates. These graphs include forecasts of system replacements during the repayment study horizon that are necessary to maintain the existing FCRPS generation and transmission facilities.





The Unrepaid Federal Investment graph displays the total planned unrepaid FCRPS obligations compared to allowable total unrepaid FCRPS investment, omitting future system replacements. This demonstrates that each FCRPS investment through 2018 is scheduled to be returned to the U.S. Treasury within its repayment period and ahead of due dates.



If in any given year revenues are not sufficient to cover all cash needs including interest, any deficiency becomes an unpaid annual expense. Interest is accrued on the unpaid annual expense until paid. This must be paid from subsequent years' revenues before any repayment of federal appropriations can be made.

Leadership

ENTERPRISE BOARD MEMBERS AS OF SEPT. 30, 2018

Elliot E. Mainzer
Administrator and Chief Executive Officer

Daniel M. James
Deputy Administrator

Janet C. Herrin
Chief Operating Officer

John L. Hairston
Chief Administrative Officer

Daniel James, John Hairston, Janet Herrin and Elliot Mainzer

Joel D. Cook
Senior Vice President for Power Services

Richard L. Shaheen
Senior Vice President for Transmission Services, P.E.

Benjamin Berry
Executive Vice President of Information Technology and Chief Information Officer

Michelle Manary
Executive Vice President and Chief Financial Officer

Mary K. Jensen
Executive Vice President and General Counsel

Thomas A. McDonald
Executive Vice President of Compliance, Audit and Risk Management

Peter T. Cogswell
Vice President of Environment, Fish and Wildlife (acting)

Nita Zimmerman
Deputy Executive Vice President Business Transformation

Kenneth Johnston
Director of Intergovernmental Affairs (acting)

Brian Carter
Director of Human Resources

Scott Simms
Director of Communications

Tracey Stancliff
Executive Office Enterprise Program Manager

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Ronan, MT 59864
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Seattle Customer Service Center
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Western Area Customer Service Center
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Transmission Services Headquarters
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Vancouver, WA 98666
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Idaho Falls, ID 83402
208-612-3100

Kalispell District
2520 U.S. Highway 2 E.
Kalispell, MT 59901
406-751-7802

Spokane District
2410 E. Hawthorne Road
Mead, WA 99021
509-468-3002

Tri-Cities District
2211 N. Commercial Ave.
Pasco, WA 99301
509-544-4702

SOUTH REGION

Eugene District
86000 Highway 99 S.
Eugene, OR 97405
541-988-7401

Longview District
3750 Memorial Park Drive
Longview, WA 98632
360-414-5600

Redmond District
3655 SW Highland Ave.
Redmond, OR 97756
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Salem District
2715 Tepper Lane NE
Keizer, OR 97303
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The Dalles District
3920 Columbia View Drive E.
The Dalles, OR 97058
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28401 Covington Way SE
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Olympia Regional Office
5240 Trosper Road SW
Olympia, WA 98512
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Snohomish District
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Snohomish, WA 98290
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Wenatchee District
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