

GAO

Report to the Subcommittee on Energy  
and Water Development, Committee on  
Appropriations, House of  
Representatives

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July 2004

**BONNEVILLE  
POWER  
ADMINISTRATION**

**Better Management of  
BPA's Obligation to  
Provide Power Is  
Needed to Control  
Future Costs**



**G A O**

Accountability \* Integrity \* Reliability

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Highlights of [GAO-04-694](#), a report to the Subcommittee on Energy and Water Development, Committee on Appropriations, House of Representatives

## Why GAO Did This Study

The Bonneville Power Administration (BPA) has experienced significant financial problems in recent years. BPA's cash reserves at the end of fiscal year 2002 had fallen to \$188 million, and BPA estimated in February 2003 that it had a 74 percent chance of missing its Treasury debt payment that year. While BPA's finances have recently improved, and the agency made its Treasury payment in 2003, BPA's financial condition is still far from robust. In this context, GAO was asked to report on (1) the advantages and disadvantages BPA faces in marketing electric power in a more competitive environment, (2) the major causes of BPA's recent cost increases, and (3) the extent to which BPA is taking actions to control its costs.

## What GAO Recommends

GAO recommends that BPA

- reduce its future risk of being overcommitted by (1) limiting the amount of power that BPA sells at its lowest cost-based rate and (2) charging incremental rates for any power sold beyond this amount that reflect BPA's cost of acquiring that power, and
- identify specific activities, resources, and time frames for implementing its risk management initiatives.

BPA generally agreed with this report's findings and recommendations.

[www.gao.gov/cgi-bin/getrpt?GAO-04-694](http://www.gao.gov/cgi-bin/getrpt?GAO-04-694).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Jim Wells at (202) 512-3841 or [wellsj@gao.gov](mailto:wellsj@gao.gov).

# BONNEVILLE POWER ADMINISTRATION

## Better Management of BPA's Obligation to Provide Power Is Needed to Control Future Costs

### What GAO Found

BPA has advantages that have typically enabled it to sell electric power to its customers—primarily public utilities—at lower prices than other sellers in the Pacific Northwest. Most importantly, BPA sells power produced by the federal power system, which includes 31 hydroelectric dams that generally have lower costs as compared with other power sources. However, BPA also has disadvantages that potentially increase its costs. Specifically, BPA is required by law to meet the demands of utilities in the region, even if those demands exceed the production capacity of the federal power system. This open-ended requirement has at times required BPA to purchase additional power at relatively high prices. BPA has other costly obligations as well, including providing financial benefits to investor-owned utilities and protecting fish and wildlife that increase its costs relative to competing sources of electricity.

BPA's open-ended obligation to provide power to the region is the major cause of its recent cost increases. This obligation led to cost increases as BPA purchased large amounts of relatively expensive power to meet rising demand. BPA's rate structure also contributed to increased demand and increased costs, because it did not reflect BPA's incremental costs of acquiring additional power and therefore did not give customers adequate incentives to conserve or seek power from alternative sources. In addition, drought and other factors have also increased BPA's costs in recent years.

BPA has not resolved problems associated with its open-ended obligation to be the net provider of wholesale electricity in the region—the major cause of its recent cost increases. BPA officials intend to resolve this problem by seeking agreement with BPA's customers to limit its commitment to provide power. BPA proposes to establish the amount of power each customer is able to buy at its lowest cost-based rate and is considering charging incremental rates for any power it sells beyond this amount. However, BPA has not clearly defined the limits for its commitments or how it would implement incremental rates. Whether this approach ultimately will be adopted is also unclear; BPA had similar plans in the late 1990s but did not implement them because of pressure from customers to serve more demand. In the meantime, BPA has taken positive steps to centralize its risk management process to better control costs. However, BPA's plan outlining its new approach does not contain some key elements to successful implementation, including details on specific activities, resources, and time frames needed to implement the plan.

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## Abbreviations

aMW	average megawatt
BPA	Bonneville Power Administration
FERC	Federal Energy Regulatory Commission
MWh	megawatt-hour

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G A O

Accountability \* Integrity \* Reliability

United States General Accounting Office  
Washington, DC 20548

July 9, 2004

The Honorable David L. Hobson  
Chairman  
The Honorable Peter J. Visclosky  
Ranking Minority Member  
Subcommittee on Energy and Water Development  
Committee on Appropriations  
House of Representatives

The Bonneville Power Administration (BPA), which markets about 45 percent of all electric power consumed in the Pacific Northwest, has experienced significant financial problems over the past few years. BPA's core business of selling power lost more than \$300 million each year in fiscal years 2001 and 2002, primarily as a result of increased costs. As a result, its cash reserves of \$811 million at the end of fiscal year 2000 had fallen to \$188 million by the end of fiscal year 2002. In February 2003, BPA announced that it had an estimated 74 percent chance of missing its repayment of Treasury debt that year. These difficulties have necessitated increases totaling more than 40 percent in the rates BPA charges its customers for power since October 2001. In large part because of these increased rates and, consequently, greater revenues, BPA's financial condition has recently improved. BPA made its Treasury debt payment in 2003, and its cash reserves have risen above \$500 million. However, BPA has stated that its financial health is still far from robust, and BPA's ability to manage its costs and risks has come under scrutiny from customers and stakeholders.

BPA was formed in 1937 to market electric power produced by the Bonneville Dam to the Pacific Northwest. BPA's marketing responsibilities have since broadened to include power from 31 federally owned hydroelectric projects, most located in the Columbia River Basin. BPA also markets power from one nonfederal nuclear plant. The 31 federal dams along with the nonfederal nuclear plant are collectively referred to in this report as the federal power system. While BPA markets the power produced, other entities are responsible for operating the system—the Army Corps of Engineers and the Bureau of Reclamation operate the hydroelectric dams; and Energy Northwest, a consortium of utilities, operates the nuclear plant. The dams in the federal power system are operated for flood control, irrigation, navigation, and recreational benefits as well as for the production of hydroelectric power. In addition, the river

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system is home to many species of fish and wildlife, including some protected by the Endangered Species Act.

BPA sells some of the power from the federal power system, at cost-based rates designed to recover BPA's full costs, via long-term contracts with its customers in the Pacific Northwest—primarily public utilities and large industrial facilities such as aluminum smelters in Idaho, Montana, Oregon, and Washington. BPA distributes this power to its customers largely on transmission lines that BPA owns and operates, which account for more than 75 percent of the region's transmission lines. When the federal power system generates more power than BPA has committed to provide its customers at its cost-based rates—for example, when spring run-off allows large volumes of hydroelectricity to be generated—BPA sells this surplus or “secondary” power to utilities and other entities in the Pacific Northwest and other western states. However, at times when the electricity generation of the federal power system is insufficient to meet BPA's commitments to its customers, BPA purchases or otherwise acquires power from other generators to make up the difference. Because of the variability in the amount of water resources and therefore available power, BPA generally considers, for planning purposes, the “firm” output of the federal power system to be only the amount of power that can be produced in a low or “critical” water year.<sup>1</sup>

BPA is one of four power marketing administrations within the U.S. Department of Energy.<sup>2</sup> Unlike the other power marketing administrations, BPA does not receive annual appropriations from Congress; instead, BPA is a self-financing agency whose revenues are generated through its sale of power and transmission services. In the past, federal money was appropriated to construct the generating and transmission projects from which BPA markets power, and BPA currently repays these appropriations on an annual basis. As of September 30, 2003, the outstanding balance of BPA's appropriated debt was about \$4.7 billion. BPA also has authority to borrow up to an additional \$4.45 billion from the Treasury on an ongoing basis; as of September 30, 2003, BPA had about \$2.7 billion of additional Treasury debt.

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<sup>1</sup>A critical water year is a year in which the annual runoff in the Columbia River Basin is equivalent to the amount recorded in 1937, one of the lowest on record.

<sup>2</sup>The others are the Southeastern Power Administration, the Southwestern Power Administration, and the Western Area Power Administration.

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With the passage of the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act), BPA's role in the region expanded in scope. For example, under the Northwest Power Act, BPA became responsible for ensuring an adequate, efficient, economical, and reliable power supply for the Pacific Northwest, which required BPA to address growing demand in the region—something BPA had previously not been required to do. In addition to its obligations to market and distribute power, the Northwest Power Act, along with various other statutes, treaties, and court cases, also requires BPA to “protect, mitigate, and enhance fish and wildlife” resources affected by the federal power system. BPA is also required under the Northwest Power Act to provide benefits to residential and small-farm customers of investor-owned utilities—these benefits have generally taken the form of financial payments. The restructuring of national wholesale electricity markets that began in the 1990s also changed the competitive environment in which BPA operates. Specifically, restructuring has created an environment with a greater degree of competition among generators and marketers of wholesale electricity.

In light of BPA's recent financial difficulties and cost increases, you asked us to determine (1) the advantages and disadvantages BPA faces in marketing electric power in a more competitive environment, (2) the major causes of BPA's recent cost increases, and (3) the extent to which BPA is taking actions to control its costs. To answer our first objective, we reviewed BPA documents and historical data, as well as studies and position papers by industry experts. In addition, we analyzed historical data on costs, regional and national power prices, and power production at the federal hydroelectric dams. To answer our second and third objectives, we reviewed BPA documents related to costs, revenues, risk management practices, and rate-setting policies, as well as studies and position papers by industry experts. Unless otherwise noted, the financial data we obtained refer to BPA's power business (i.e., the expenses and revenues embodied in its power rates). We also interviewed BPA officials and collected views from BPA's customers and stakeholders, including groups that focus on fish and wildlife issues. In addition, we analyzed cost and rate data from BPA. Finally, we interviewed officials from the U.S. Army Corps of Engineers, one of the agencies that operate the dams of the federal power system. We focused our review on the group within BPA that is responsible for marketing power from the federal power system, and on its costs in the current rate period, which began in fiscal year 2002. We tested the reliability of data on generation costs in the Pacific Northwest, and on BPA's costs and rates, and found them to be adequate to answer the objectives of this report.

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We conducted our review from August 2003 through April 2004 in accordance with generally accepted government auditing standards. For a more detailed discussion of the scope and methodology of our review, see appendix I.

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## Results in Brief

BPA has inherent advantages that have generally enabled it to sell power at lower prices than other sellers of wholesale power in the Pacific Northwest. BPA's most important competitive advantage is that it markets electricity produced primarily at hydroelectric dams in the federal power system, which generally have lower costs, as compared with power produced by other sources. In addition, as a federal agency, BPA enjoys financial advantages such as access to federally financed debt, which generally offers lower interest rates than those available to private-sector entities. However, unlike other sellers of wholesale power, BPA has open-ended obligations to provide power and other benefits to its customers and others in the Pacific Northwest that increase its costs. In particular, unlike the other power marketing administrations, BPA is required by its governing statutes to serve the "net" demand of utilities in the region (that is, the demand that these utilities cannot meet with their own generation resources) when requested. Over time, this open-ended requirement has increased the demands on BPA's finite resources; and at times, BPA has purchased power from other sources to augment the generation resources of the federal power system. Other statutory obligations that increase BPA's costs relative to some of its competitors include providing financial benefits to certain customers of regional investor-owned utilities and protecting fish and wildlife. Regarding financial benefits to residential and small-farm customers of the region's investor-owned utilities, BPA is required to provide these benefits to off-set the higher prices that—for historical reasons—these customers generally pay for power, as compared with public utility customers. Regarding fish and wildlife protection, BPA is the sole source of funding for the Northwest Power and Conservation Council—a regional agency established by the Northwest Power Act to balance the Northwest's environment and energy needs, including developing a program to protect and rebuild fish and wildlife populations affected by hydropower development in the Columbia River Basin. In addition, the multiple-use nature of the dams in the federal power system constrains the amount of power that BPA can sell. For example, water diverted for irrigation purposes is generally unavailable for generating electricity. These open-ended obligations and constraints on the generation of power have increased pressure on BPA over time and contributed to increases in BPA's costs relative to the costs of competing sources of power. Specifically, BPA's costs—as reflected in its cost-based

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rates—more than doubled in the 30 years between fiscal years 1972 through 2001, when adjusted for inflation, while the average costs of some other sources of power fell. By 1995, as BPA reported in its 1995 Business Plan, for the first time in its history, BPA’s rates had risen to the level of the costs of other sources of generation—namely gas-fired electricity generators.

BPA’s open-ended obligation to be the net provider of wholesale power to the region is the major cause of its recent cost increases. This obligation led to BPA’s overcommitment to provide power to its customers in the current rate period—from fiscal years 2002 to 2006—and consequently, to BPA’s cost increases as it purchased large amounts of power at average prices much higher than the costs of the federal power system. The demand from BPA’s public utility customers in the current rate period increased by more than 50 percent over the previous rate period—a demand that BPA is statutorily required to serve. BPA also agreed to provide power to investor-owned utilities and large industrial customers, although BPA was not statutorily required to do so. To meet this increased level of demand, BPA spent approximately \$900 million in fiscal year 2002 and \$760 million in fiscal year 2003, necessitating a rate increase of more than 40 percent for the majority of BPA’s customers. BPA’s rate structure also contributed to the increase in demand and increased costs, because BPA did not charge incremental rates equal to its costs of acquiring additional power and therefore did not give customers adequate incentives to conserve or seek power from alternative sources. In addition, drought conditions and other factors have also increased BPA’s costs in recent years.

BPA has not resolved problems associated with its open-ended obligation to be the net provider of wholesale electricity in the region—the major cause of its recent cost increases. While BPA has issued a draft strategic plan that includes an objective of clarifying how much power it will provide to its customers, and at what price, starting in fiscal year 2007, this plan lacks specificity. According to its plan, BPA will contractually set the amount of power each customer is able to buy at BPA’s lowest cost-based rate. BPA’s plan also states that BPA will consider using incremental rates<sup>3</sup> to define pricing and terms for supply beyond this amount of power.

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<sup>3</sup>BPA has generally used the term “tiered rates” to describe the rate design that differentiates between a rate that applies to sales at the lowest embedded-cost rate and a rate that applies to sales beyond that amount.

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However, BPA's plan does not specify the amount of power BPA will allow its customers to buy at its lowest rate nor the specific manner in which incremental rates will be charged. If the amount of power sold to customers at its lowest rate exceeds the firm output of the federal power system—the amount of power that can be generated during a critical water year—BPA could still need to purchase power from other sources to meet its commitments during low water years. Further, if the incremental rates do not fully reflect BPA's costs of acquiring any additional power it sells, BPA's customers will not have appropriate incentives to conserve or seek alternative sources of power. Finally, whether BPA's strategic plan will ultimately be implemented remains unclear. BPA has not carried out similar proposals made in the past—such as in the late 1990s, when a four-state panel recommended that BPA limit its commitments to the firm output of the federal power system and charge incremental rates to cover its cost of acquiring any additional power. BPA officials said that BPA ultimately declined to implement such an approach under strong regional pressure from its customers to provide more power.

Regarding other costs, BPA has taken steps to reduce costs or control the extent of future cost increases in the areas of power generation, fish and wildlife programs, and internal operations. For example, BPA has reduced funding in general areas such as travel, training, supplies, and staffing, as compared with 2001 funding levels. In addition, BPA has taken steps to centralize its risk management process to better control its costs. Among other things, BPA has established a management plan outlining a new approach to risk management and has hired a Chief Risk Officer. However, BPA's plan to date generally does not identify specific activities, resources, and time frames for completing implementation of its new approach; and this lack of specificity prevented us from reviewing the plan's progress in a meaningful way.

We are making four recommendations to BPA to ensure that the agency can control costs of future power purchases and that it clarifies key elements of the implementation of its new risk management process. Specifically, we are recommending that BPA reduce its future risk of being overcommitted by (1) defining rights to purchase the firm output of the federal power system so that the amount of power that BPA sells at its lowest, cost-based rate is equivalent to the firm output of the existing federal power system, (2) charging incremental rates for any power sold beyond this amount that reflect BPA's cost of acquiring that power, and (3) studying the feasibility of issuing a rule under the Administrative Procedure Act to define the rights to purchase power and the terms of incremental rates. We are also recommending that BPA identify specific

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activities, resources, and time frames for implementing its risk management initiatives. In commenting on a draft of this report, BPA generally agreed with our findings and recommendations.

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## Background

Although BPA is a self-funded agency, it has ongoing authority to borrow from Treasury to fund capital expenditures and is repaying funds appropriated in the past to finance the construction of dams and generating and transmission facilities. According to the Northwest Power Act, BPA's revenues from selling power and transmission services must cover its costs, which include repayment of its debt, interest, operating and maintenance costs, and the cost of any power purchased for resale to meet its customers' needs, among other things. BPA's current 5-year rates include the ability to adjust rates in response to changing cost and revenue conditions.

BPA's customers include public utilities in the Pacific Northwest, as well as a few aluminum companies and other large industrial customers, known as direct service industries. BPA also provides power to some investor-owned utilities in the Pacific Northwest. In addition, BPA sells or exchanges power with utilities and power marketers in Canada and the western United States. Preference—the opportunity to obtain first access to BPA power—is defined by statute and gives priority to public utilities and other public entities to ensure that the federal hydropower projects are operated for the benefit of the general public, particularly residential and rural customers. However, BPA's nonpublic customers in the Pacific Northwest have priority in access to BPA power over public utilities in other parts of the country.

BPA sells power to its customers through two mechanisms. First, BPA sells power through long-term contracts at cost-based rates that are established in periodic rate cases, which have recently taken place every 5 years. The Federal Energy Regulatory Commission (FERC)—pursuant to the Northwest Power Act—approves BPA's rates after determining that the rates BPA proposes for its firm power are sufficient to cover BPA's costs. Second, BPA often sells secondary power, defined as power produced beyond the amount that BPA has committed to sell to its customers at its cost-based rates. These secondary sales are often

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transacted at market-based prices.<sup>4</sup> The time frames of these secondary sales range from hourly to as much as 18 months in advance.

The amount of power produced by the federal power system is highly variable, largely depending on prevailing water conditions. For example, according to BPA, in the last 10 fiscal years, the annual runoff of the Columbia River at The Dalles Dam has varied from a low of about 79 million acre-feet in fiscal year 2001 to a high of about 194 million acre-feet in fiscal year 1997; and the amount of power generated by the federal power system has varied from a low of about 7,300 average megawatts (aMW) to a high of nearly 12,000 aMW.<sup>5</sup> Since BPA's revenues from secondary sales depend on the amount of power produced by the federal power system, these revenues are also highly variable. Because of this inherent uncertainty about how much power BPA will have to sell in any given year, BPA officials estimate for planning purposes that the firm output of the federal power system is about 8,000 aMW.

To promote competition in wholesale electricity markets, the federal government took several actions in the 1990s that affect BPA's operations. For example, in 1992, the Congress passed the Energy Policy Act, authorizing FERC to require utilities, on a case-by-case basis, to allow competitors to use their transmission lines for wholesale sales of electricity. In 1996, FERC ordered that electric transmission systems be opened to all qualified wholesale buyers and sellers of electricity. FERC also required utilities to separate operations and management of their generation and transmission businesses to prevent discriminatory practices, such as denying competitors equal access to transmission lines. While BPA's transmission system is outside of FERC's jurisdiction, BPA voluntarily complied with key features of FERC's orders. For example, in 1997, BPA split its operations into a Power Business Line and Transmission Business Line. BPA took other actions to attempt to position

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<sup>4</sup>BPA sells secondary power at market prices, subject to a self-imposed average annual price cap—this average annual price cap is determined by the cost to BPA of power produced at the Energy Northwest operated nuclear plant. BPA may actually receive more than this amount when it sells its power in a formal market and when the market-clearing price exceeds BPA's self-imposed price cap.

<sup>5</sup>An acre-foot is the volume of water necessary to cover one acre to a depth of one foot and is equivalent to 325,851 gallons. A watt-hour is a measurement equal to 1 watt of power supplied to, or taken from, an electrical circuit steadily for 1 hour. A megawatt-hour is one million watt-hours, or enough power to serve the needs of about 750 homes for 1 hour. An aMW is equal to 8,760 megawatt-hours, or the average number of megawatt-hours over the course of 1 year (i.e., 24 hours x 365 days x 1 megawatt).

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itself in the more competitive market that was emerging in the 1990s. For example, in its 1995 Business Plan, BPA announced its intent to expand its position in the wholesale electricity market. Responding to the increased choices and falling prices that were available to its customers, BPA planned to increase its long-term revenue by entering new markets with new product lines. Specifically, the Business Plan proposed an Energy Services Business Line to provide planning and analytic services to customers and advocated increased spot-market power purchases to provide it resource flexibility in a time of shifting demands and increasing obligations to migrating salmon.

In the mid-1990s, wholesale power prices dropped in the Pacific Northwest, and power marketers began to offer wholesale power prices lower than the prices BPA charged its customers. BPA's customers responded by reducing their purchases of BPA power by about 1,800 aMW—a reduction in demand of almost 25 percent. Because of this drop in demand from its customers, BPA became concerned that it would not be able to sell its power at prices high enough to cover its costs. In response to concerns about BPA's competitiveness and to establish regional consensus on BPA's role in a competitive wholesale marketplace, the governors of Idaho, Montana, Oregon, and Washington convened a committee in 1996 representing BPA and its major customer and stakeholder groups. The committee issued a report—known as the Comprehensive Review of the Northwest Energy System—recommending that BPA return to its historic role of marketing power from the federal power system, rather than becoming an aggressive marketer of products and services in the emerging competitive power market.<sup>6</sup> Accordingly, the Comprehensive Review report recommended that BPA avoid acquiring resources to meet load growth, except on a direct bilateral basis where the customer takes on the risk, and that BPA manage and control its costs to remain competitive.

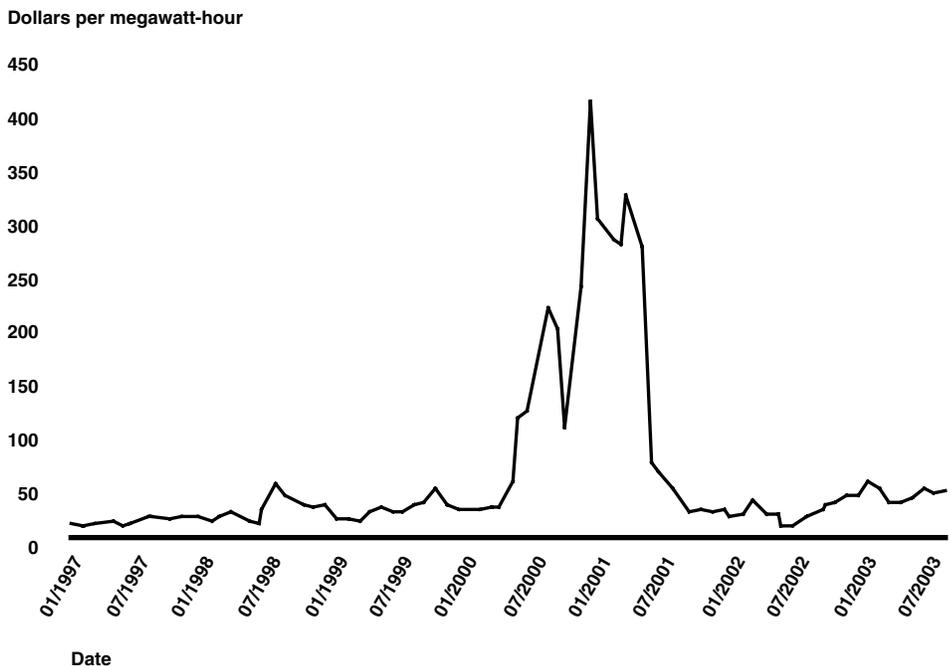
After the low prices of the mid-1990s, Pacific Northwest electricity prices became more volatile. Trends in Pacific Northwest wholesale electricity prices are shown in figure 1. Average monthly wholesale electricity prices increased somewhat in 1998 and 1999, as demand in the region grew while little new generation capacity was added. In mid-2000, electricity prices in California skyrocketed due in part to low water conditions that reduced

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<sup>6</sup>*Comprehensive Review of the Northwest Energy System—Final Report: Toward a Competitive Electric Power Industry for the 21st Century*, December 12, 1996.

the total supply. Because hydroelectric power provides such a large part of the total power supply in the region, low water years tend to cause high prices due to the consequent reduction in the total supply of power. Because California's electricity market is integrated with the rest of the western region, prices in the Pacific Northwest quickly followed California's lead and rose to unprecedented levels. Average wholesale prices in the Pacific Northwest remained high until the summer of 2001. Since then, prices have returned to levels similar to those seen in the late 1990s.

**Figure 1: Average Monthly Prices for Wholesale Electricity in the Pacific Northwest, 1997-2003**



Source: GAO analysis of Platts/RDI PowerDAT data.

Note: Wholesale electricity prices are expressed in dollars per megawatt-hour (MWh) and are not adjusted for inflation. These prices are from the Mid-Columbia Hub and are representative of wholesale electricity prices in the Pacific Northwest.

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## Inherent Advantages Help BPA to Provide Low-Priced Power, but Its Open-ended Obligations Are a Competitive Disadvantage

BPA has inherent advantages, including its access to power from the federal power system, that have generally enabled it to provide power to customers in the Pacific Northwest at prices lower than other sellers of wholesale power. However, unlike other sellers of wholesale power, BPA has open-ended obligations to provide power and other benefits to its customers and others in the Pacific Northwest that have increased BPA's costs. In addition, the multiple-use nature of the dams in the federal power system constrains the amount of power that BPA has available to sell. These open-ended obligations and constraints have increased pressure on BPA over time, engendering disputes in the region over the allocation of the limited resources of the federal power system, and contributing to increases in BPA's costs relative to the costs of competing sources of electricity.

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## BPA's Access to Hydroelectric Power and Federal Financing Offer Competitive Advantages

BPA's most important cost advantage is that power from the federal power system is primarily produced at hydroelectric dams, which overall have low costs. According to BPA data, hydroelectric generation has accounted for more than 90 percent, on average, of the generation output of the federal power system over the past 2 decades. Many of these hydroelectric facilities were built decades ago and had relatively low construction costs compared with newer generating facilities. In addition, these hydroelectric facilities tend to have lower operating costs than other sources of electricity that consume costly fossil or other fuels. As a result of these advantages, hydroelectric power plants in the Pacific Northwest typically produce power for less than \$5 per MWh (as shown in fig. 2), compared with the region's coal and nuclear plants, which produce power for between \$15 to 20 per MWh, or combined cycle turbine facilities that burn natural gas or oil, which produce power for more than \$20 per MWh.

**Figure 2: Average Production Costs for Different Types of Generating Plants in Idaho, Oregon, Washington, and Western Montana, 1996-2002**



Source: GAO analysis of Platts/RDI PowerDAT data.

Note: In inflation-adjusted dollars, base year 2003. Production costs are measured in dollars per MWh and reflect data for the North American Electric Reliability Council's Northwest Power Pool subregion. Production costs reflect variable and fixed costs associated with a generating plant. Source dataset does not have a value for nuclear generation in 2002. Combined cycle turbine generators use natural gas or oil.

BPA also enjoys advantages related to financing due to its status as a federal agency. BPA has access to federally financed debt, which generally offers lower interest rates than those available to private-sector entities. BPA's federal financing is divided into two categories—appropriated debt

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and Treasury debt. Appropriated debt<sup>7</sup> consists of appropriations received by BPA and the generating agencies to construct the generating and transmission projects from which BPA markets power. As of September 30, 2003, the outstanding balance of BPA's appropriated debt was about \$4.7 billion. As a result of legislation passed in 1996, BPA's appropriated debt was restructured in 1997 to increase the interest rates to bring them in line with the prevailing Treasury rates. However, the principal on this debt was adjusted downward so that, except for the interest on the \$100 million that BPA paid as part of the restructuring, the annual interest BPA pays on the debt remains the same.<sup>8</sup>

In addition to its appropriated debt, BPA has authority to borrow from the Treasury on an ongoing basis. BPA's Treasury borrowing stems from authority granted in the Federal Columbia River Transmission System Act of 1974, as amended, which allows BPA to have up to \$4.45 billion in Treasury debt outstanding at any one time. The \$4.45 billion consists of two separate borrowing limits: \$1.25 billion is reserved for conservation and renewable resource loans and grants, and \$3.2 billion for transmission and other capital investments. This debt is issued at market interest rates that are comparable to other government agency obligations, and these rates are higher than Treasury rates. As of September 30, 2003, BPA had about \$2.7 billion of debt held by the Treasury. As BPA pays off debt, it has greater funds available for future borrowing.

BPA's status as a federal agency also has conferred advantages in securing financing from the private sector. BPA does not have authority to borrow directly from nonfederal sources, but BPA has secured private sector financing by taking responsibility for the debt of other entities. For example, BPA is responsible for the debt service of bonds issued by Energy Northwest, a consortium of public utilities, to build three nuclear plants, only one of which is currently operating. While the federal government explicitly does not guarantee Energy Northwest bonds, Moody's Investors Service views them as having an implicit federal guarantee. In addition, Moody's Investors Service and Fitch Ratings give

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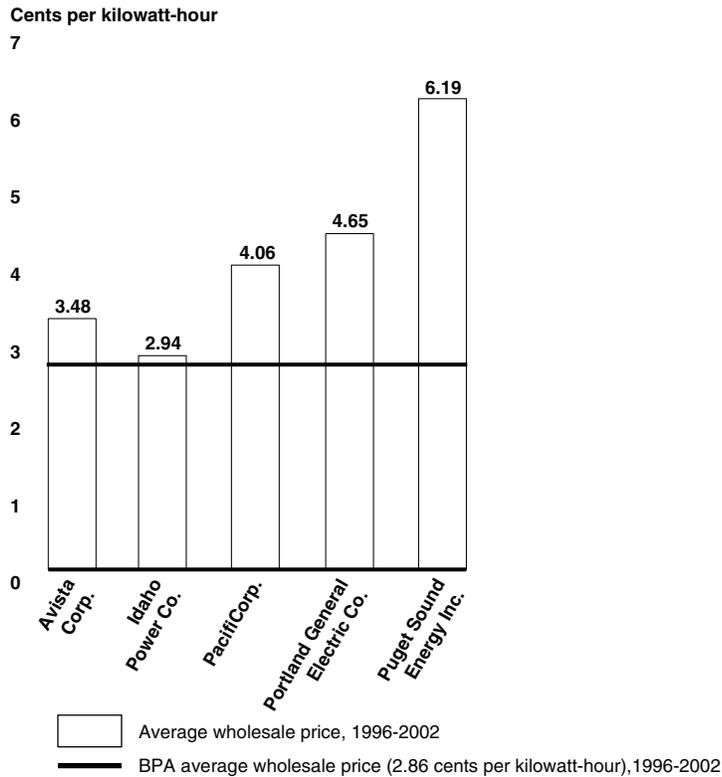
<sup>7</sup>We refer to this as appropriated debt because BPA is required to repay appropriations used for capital investments, with interest. However, these reimbursable appropriations are not technically considered lending by the Treasury.

<sup>8</sup>At the time this debt was restructured, BPA's appropriated debt of \$6.85 billion carried a weighted-average interest rate of about 3.5 percent. Effective the first day of fiscal year 1997, the principal of the outstanding debt was reduced to an estimated \$4.29 billion and the associated interest rate was increased to 7.1 percent.

credit strength to BPA's ties to the federal government. Thus, the interest that BPA pays on Energy Northwest bonds is lower than would be paid without BPA's ties to the federal government.

As a result of BPA's inherent cost advantages, it generally has been able to sell electricity at lower wholesale prices than other major investor-owned utilities in the Pacific Northwest, as shown in figure 3.

**Figure 3: Average Wholesale Prices for Electricity Sold by BPA and the Five Largest Investor-Owned Utilities in the Pacific Northwest, 1996-2002<sup>a</sup>**



Source: GAO analysis of Energy Information Administration data.

Note: Prices are given in inflation-adjusted dollars, base year 2003.

<sup>a</sup>Average wholesale prices are expressed in cents per kilowatt-hour, where a kilowatt-hour is equal to one thousand watt-hours. Average wholesale prices are calculated by dividing a utility's total revenue from power sales by the total amount of power it sold. The resulting weighted average may not represent the actual price paid by any particular customer, but it reflects the average annual prices paid by customers as a group.

BPA's advantages contribute significantly to the relatively low retail price of electricity sold in the Pacific Northwest. Because BPA sells about 45

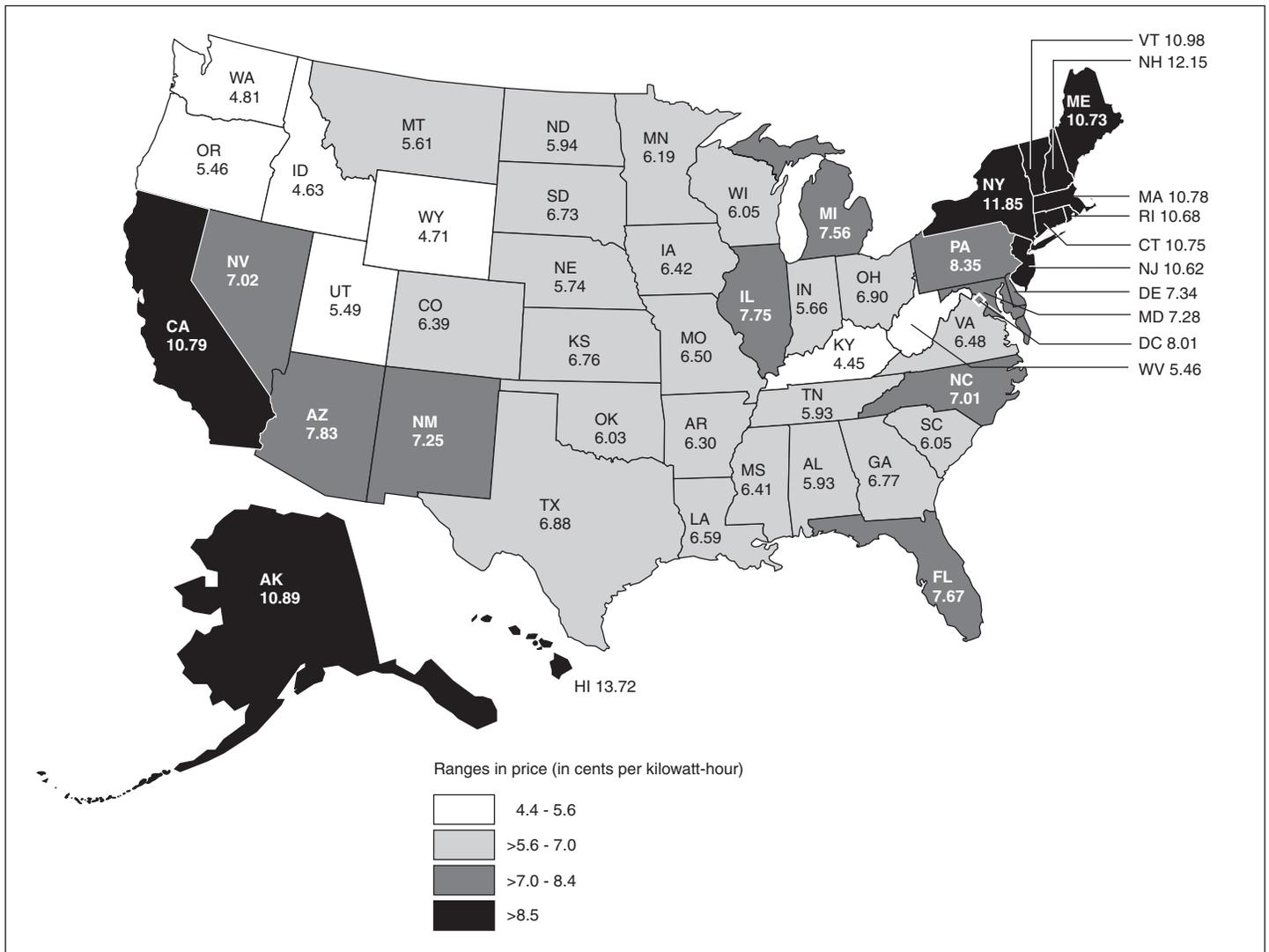
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percent of all the electricity used in the Pacific Northwest, its wholesale prices play a large role in determining the average retail price of electricity throughout the Pacific Northwest. As shown in figure 4, the average retail price of electricity (as expressed in average revenue per kilowatthour) in states in the Pacific Northwest is generally lower than electricity sold in much of the rest of the United States. While the nationwide average retail price of electricity from 1996 to 2002 was 7.41 cents per kilowatthour, Washington state's average price of electricity over this period was 4.81 cents per kilowatthour, Oregon's was 5.46 cents per kilowatthour, Idaho's was 4.63 cents per kilowatthour, and Montana's was 5.61 cents per kilowatthour.<sup>9</sup>

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<sup>9</sup>Figures are presented in constant dollars using 2003 as the base year.

**Figure 4: Average Retail Prices of Electricity, 1996-2002**



Source: GAO analysis of Energy Information Administration data.

Note: Prices are given in inflation-adjusted dollars, base year 2003, and have been rounded to hundredths of a cent per kilowatt-hour. Average retail prices are expressed in cents per kilowatt-hour, calculated by dividing total revenue from power sales by the total amount of power sold in a state. The resulting weighted average may not represent the actual price paid by any particular customer, but reflects the average annual prices paid by customers as a group.

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## BPA Has Competitive Disadvantages That Increase Its Costs

BPA also has competitive disadvantages—stemming mainly from statutory obligations—that increase its costs relative to other sellers of wholesale power. Most importantly, unlike other power marketing administrations, BPA has a legislative mandate under the Northwest Power Act to be the “net provider” of wholesale electricity in the region—i.e., BPA must meet the power needs of all utilities in the region to the extent that the utilities’ own generating resources are insufficient to meet the demand of their retail customers. If a utility requests power from BPA, BPA must provide this power regardless of whether its own generating resources are sufficient to meet the demand.

Past attempts by BPA to meet growing regional demand have led to significant cost increases that BPA has had to cover in its power rates. For example, in the early 1970s, BPA entered into financing agreements with Energy Northwest to acquire the generating capability of three nonfederal nuclear power plants.<sup>10</sup> Later, a variety of events, including construction cost overruns and lower-than-estimated power demand growth, made it clear that some of these plants would not be economical to complete or operate. Accordingly, construction was halted on two of these plants. As a result, BPA is currently responsible for about \$3.8 billion in nonfederal debt associated with two nonoperating nuclear plants, along with \$2.2 billion in nonfederal debt for the one operating nuclear plant, the Columbia Generating Station. Servicing the debt related to the nonoperating plants that don’t generate any revenue to help offset this cost has raised BPA’s average costs significantly, requiring BPA to charge more for its power sales. In 1994, BPA again tried to expand the capacity of the federal power system by entering into a financing agreement to acquire the capacity of a proposed nonfederal gas-fired power plant for a 20-year period. Later, as wholesale market prices for power fell, some of BPA’s customers reduced their demand for BPA power, and BPA found that it did not need the power from the gas-fired plant. BPA then breached its contract, which cost the agency over \$280 million in net settlement payments.

Under the requirements of the Northwest Power Act, BPA also provides financial payments to some of its customers in lieu of providing power

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<sup>10</sup>At the time these agreements were made, Energy Northwest was known as Washington Public Power Supply System, a joint operating agency in the state of Washington made up of representatives of public utility districts and municipalities. Under these agreements, BPA contracted to pay all or part of the annual project budgets, including debt service, whether or not the projects were completed.

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through a program called “residential exchange.” The residential exchange program is designed to share the benefits of low-cost power from the federal power system with residential and small-farm customers of investor-owned utilities.<sup>11</sup> Because investor-owned utilities in the Pacific Northwest have typically had higher costs than the region’s public utilities, the residential exchange program attempts to compensate for the difference and reduce the prices paid by the investor-owned utilities’ retail customers by making financial payments to the investor-owned utilities. The size of these payments is determined by comparing an investor-owned utility’s average cost of producing power to the rates BPA charges its public utility customers, with BPA making up the difference. Between fiscal years 1982 and 2003, BPA’s financial records show that the annual cost of the program has averaged about \$210 million.<sup>12</sup>

The Northwest Power Act also requires BPA—along with the other federal agencies responsible for managing, operating, or regulating hydroelectric facilities in the Columbia River Basin—”to protect, mitigate, and enhance fish and wildlife” resources impacted by the development and operation of those facilities. Under the Act, BPA is required to implement and fund measures supporting fish and wildlife in a manner consistent with the program developed by the Northwest Power and Conservation Council—a regional agency established by the Northwest Power Act to balance the Northwest’s environment and energy needs, including developing a program to protect and rebuild fish and wildlife populations affected by hydropower development in the Columbia River Basin. BPA must also implement and fund actions contained in the biological opinions directed at avoiding jeopardy to and recovering the 14 Columbia River Basin fish populations listed as threatened or endangered under the Endangered Species Act. Because BPA is the primary source of funding for the Northwest Power and Conservation Council’s program and for the implementation of the actions contained in the biological opinions, BPA’s costs are impacted by the costs of protecting fish and wildlife to a greater degree than some of its competitors. BPA financial records show that between fiscal years 1985 and 2003, BPA’s costs to implement these

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<sup>11</sup>Some public utilities also can receive payments under this program, but the cost to BPA is much smaller, averaging less than \$23 million annually (in 2003 dollars) from 1982 to 2003.

<sup>12</sup>Average costs are in constant dollars, base year 2003. In 2002, BPA began providing payments and power to investor-owned utilities under a settlement agreement rather than under the residential exchange provisions of the Northwest Power Act. The \$210 million average includes these costs.

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actions have increased on an annual basis, from about \$85 million in 1985 to about \$256 million in 2003, in 2003 dollars. BPA's total spending on these programs during the same period was over \$3.3 billion. (For more detailed information on the growth in BPA's program spending on fish and wildlife from 1985 through 2003, see app. II.)

In addition, the multiple-use nature of the dams in the federal power system can reduce the amount of power that BPA has available to sell, which increases BPA's average costs of providing power. In addition to generating power, the dams of the federal power system are also operated for the protection of fish and wildlife, flood control, irrigation, navigation, and recreational benefits. These other uses change the timing and amount of the water flow, which in turn can reduce the total amount of power that the federal power system produces—and therefore, the amount of power that BPA has to market. For example, to fulfill the obligations of the Northwest Power Act and the Endangered Species Act, water is released from storage reservoirs in the Columbia River Basin to aid migrating salmon and steelhead, including many threatened or endangered fish populations. Water releases for fish migration can generate power, but such releases typically occur during springtime when water flows are already high and, consequently, power prices are low. As a result of these releases, less water is retained behind the dams to be released later to generate power when prices are higher. In addition, water is sometimes spilled without generating electricity to aid fish migration instead of being sent through the dams' turbines to generate power. As a result of these constraints on power production at the federal dams, BPA must at times purchase power to meet its contractual obligations; and at other times, BPA's revenues from secondary sales are reduced. Purchasing additional power and having less power to sell combine to increase BPA's average costs—defined as BPA's total costs divided by the total power generation that BPA sells. According to BPA estimates for fiscal years 1985 through 2003, water releases for fish and wildlife purposes have cost BPA almost \$4 billion in power purchases to meet contractual obligations and in foregone revenues.<sup>13</sup> Diverting water for irrigation purposes has a similar effect on BPA's revenues and average costs. BPA estimates that foregone

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<sup>13</sup>These estimates are adjusted for inflation using 2003 as a base year.

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revenues attributed to irrigation withdrawals are currently about \$180 million per year.<sup>14</sup>

As population and economic activity in the Pacific Northwest region have grown, the demand for power from the federal power system has increased. While in the past BPA typically provided power to public utilities and had power left over for some large industrial customers, demand from public utilities has grown so that, according to BPA officials, this demand is currently about equal to the entire firm output of the federal power system. Demand from investor-owned utilities has also grown, and consequently, the number of these utilities' customers who are entitled to financial benefits through the residential exchange program has increased. In addition, the demands on the operation of dams for other uses—particularly for fish and wildlife programs—have increased. These increasing and often competing demands for the resources of the federal power system have led to disputes among the beneficiaries over how these resources are distributed. For example, the method by which BPA calculates residential exchange payments has spurred disputes within the region. Investor-owned utilities and state regulators have argued that BPA has manipulated the method to reduce payments below appropriate levels. Conversely, public utilities have argued that payments to investor-owned utilities have been too high and that BPA has inaccurately applied a statutory provision designed to protect public utilities from increased prices. Some public utilities recently filed a lawsuit against BPA, claiming that a settlement agreement BPA signed with investor-owned utilities inappropriately increased program costs.

BPA's costs—as reflected in its cost-based power rates—more than doubled in the 30 years between fiscal years 1972 through 2001, when adjusted for inflation, and increased by a factor of about 7 in nominal terms (not adjusted for inflation).<sup>15</sup> Figure 5 shows BPA's rates from 1972 through 2001 both in dollars adjusted for inflation and in nominal dollars

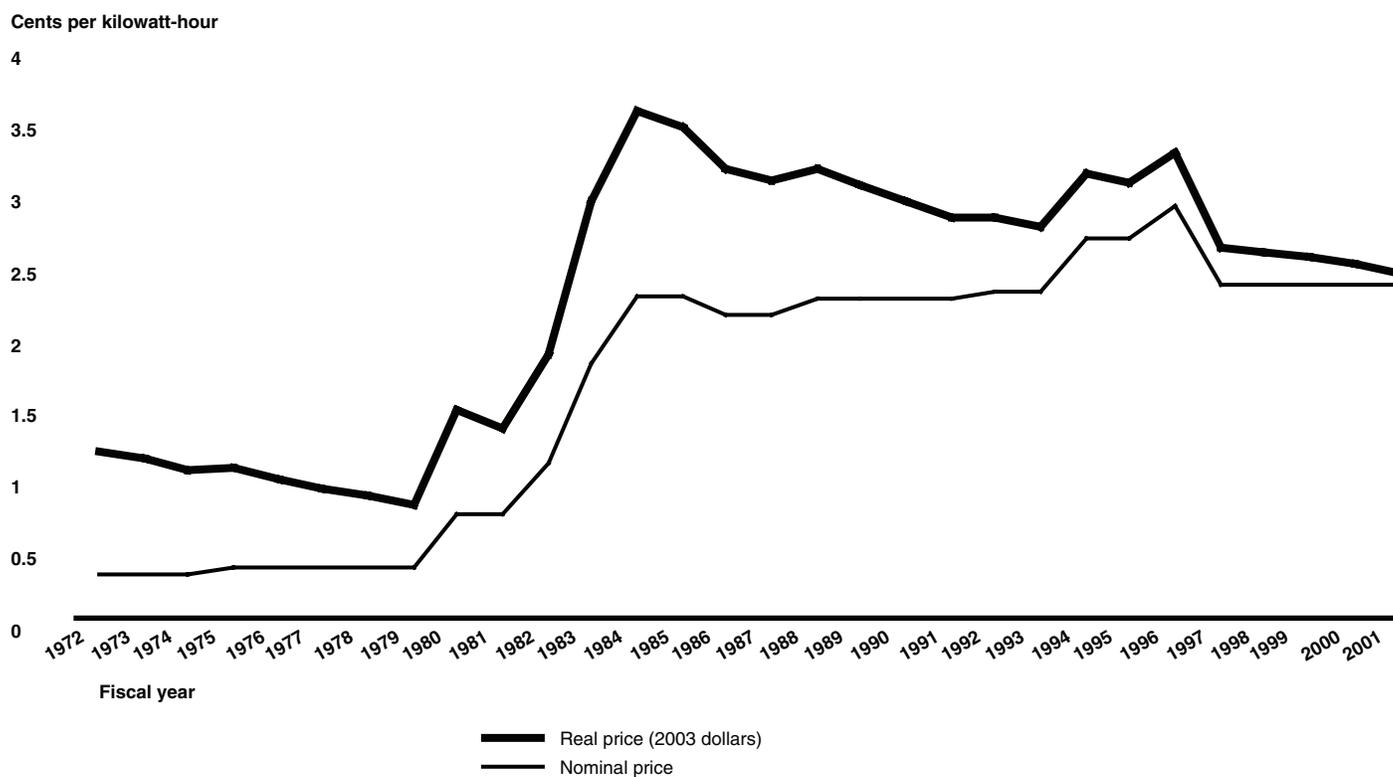
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<sup>14</sup>BPA officials told us that they are not required to track the costs of irrigation water releases as they are with fish and wildlife related releases. Therefore, they do not have annual figures for the dollar impact on revenues of irrigation releases. According to BPA officials, flood control, navigation, and recreational uses of the dams do not have a significant affect on the amount of power BPA has to sell.

<sup>15</sup>BPA is required by statute to set its rates to recover its costs. Thus, when BPA's costs increase over time, its rates must increase by an equal amount.

(not adjusted for inflation).<sup>16</sup> During this period, BPA's backing of the construction of the nuclear plants and the gas-fired plant, discussed previously in this report, contributed to the agency's cost increases as reflected in its rising rates.

**Figure 5: BPA's Average Power Rates, Fiscal Year 1972-2001**



Source: GAO analysis of BPA data.

Note: Data are for BPA's historical average priority firm power rates. Nominal prices refer to BPA's rates that have not been adjusted for inflation. Real prices refer to BPA's rates that have been adjusted for inflation with fiscal year 2003 as the base year.

Since the late 1970s, while BPA's rates increased significantly, the cost of new sources of power generation decreased as the efficiency of new technologies improved. For example, in its 1995 Business Plan, BPA

<sup>16</sup>The figure shows that in periods, such as in much of the 1970s, when BPA's average nominal rates were nearly constant, inflation caused the "real" or inflation-adjusted rates to fall, but that on average, increases in BPA's rates exceeded inflation over the entire three decades.

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reported that a number of factors, including “falling fuel prices and the emergence of new and aggressive competition” had led to a situation where for the first time in BPA’s history, BPA’s rates were as high as the costs of alternative sources of electric power. As a result, as discussed previously in this report, some of BPA’s customers began to reduce their demand for BPA power in favor of these cheaper sources of power. BPA has more recently reported that since the West Coast energy crisis of 2000 and 2001, and with recent increases in natural gas prices, the costs of new power plants are again higher than BPA’s rates. However, after 1995, BPA stopped regularly tracking and reporting consistent data on the cost of the least expensive alternative form of power generation, so we were unable to compare the agency’s rates relative to the cost of such alternatives after that year.

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## **BPA’s Open-ended Obligation to Provide Power and Other Factors Led to Large Cost Increases for BPA**

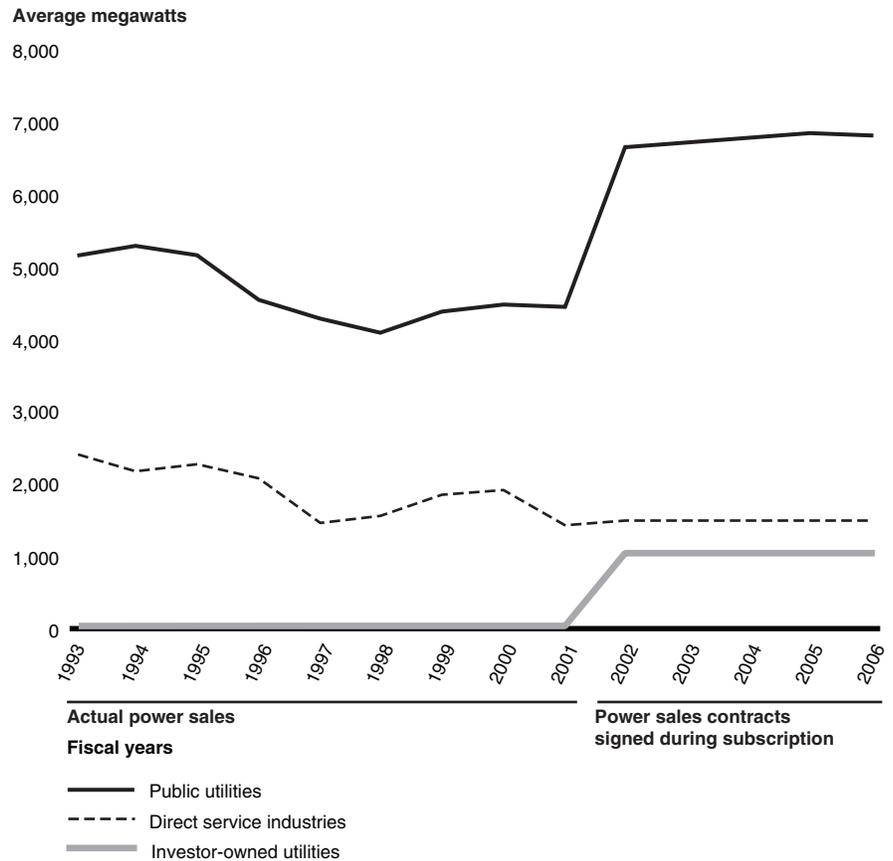
BPA’s open-ended obligation to be the net provider of wholesale power to the region is the major cause of its recent cost increases. This obligation led the agency to overcommit to provide power to its customers in the current rate period—from fiscal years 2002 to 2006. BPA’s costs rose dramatically as the agency purchased large amounts of power, at average prices much higher than the costs of power from the federal power system, and took other steps to meet its obligations. BPA’s rate structure, which did not charge incremental rates equal to BPA’s costs of acquiring additional power, contributed to the rising costs because it did not give customers adequate incentives to conserve or seek power from alternative sources. Drought conditions and other factors have also caused BPA’s costs associated with its power marketing business to increase in recent years.

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## **Open-ended Obligation to Provide Power and BPA’s Rate Structure Led to Large Cost Increases for BPA**

BPA experienced a demand increase of more than 50 percent from its public utility customers in the current rate period, which began in fiscal year 2002. Figure 6 shows the amount of power that BPA’s three main customer groups purchased from fiscal years 1993 to 2001 and the amount of power these same groups signed contracts to purchase during the current rate period. Demand from the public utilities increased from an average of approximately 4,300 aMW during the fiscal year 1997 to 2001 rate period to an average of approximately 6,800 aMW during the current rate period. As described earlier, the Northwest Power Act requires BPA to serve the net requirements of public utilities if these utilities request power, regardless of whether BPA’s own generating resources are sufficient to meet this demand. Therefore, BPA was required to serve this increased demand.

**Figure 6: Power Purchased and Power Contracts Signed by BPA's Major Customer Groups, Fiscal Year 1993-2006**



Source: BPA.

In addition to signing contracts to provide more power to its public utility customers, BPA also signed contracts to provide power to customers that it was not statutorily required to serve during the current rate period. For example, BPA agreed to provide approximately 1,500 aMW of power to the direct service industries during the fiscal year 2002 to 2006 rate period, despite the fact that BPA's statutory mandate to serve the direct service industries ended at the end of fiscal year 2001. BPA officials told us that the decision to serve the direct service industries was made at the request of the then Secretary of Energy and that BPA management also felt it was the correct thing to do, given BPA's previous requirement to provide power to these customers. BPA also agreed to provide 1,000 aMW of power to the investor-owned utilities as part of a settlement agreement—

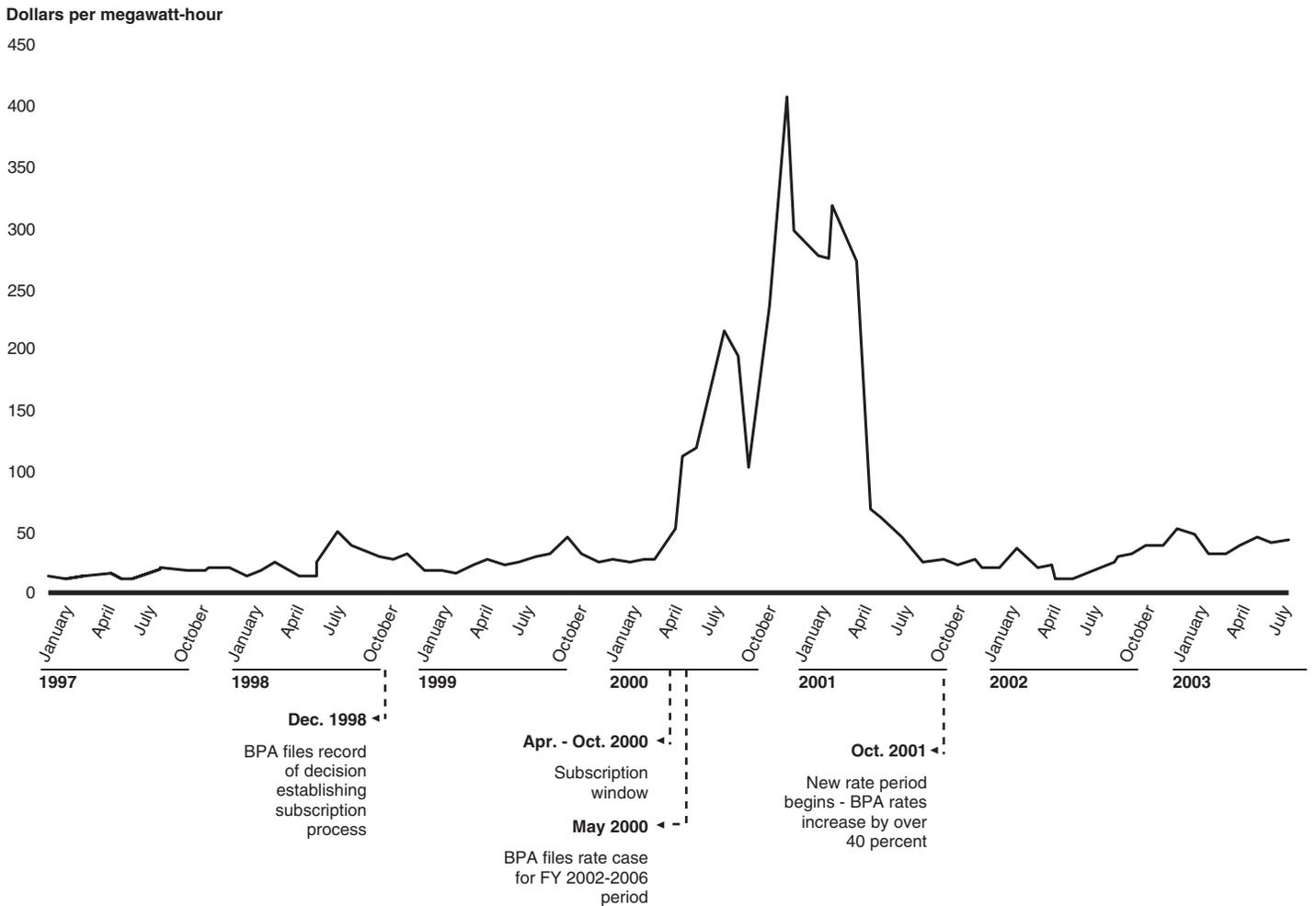
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previously, BPA had only provided financial payments to investor-owned utilities as part of the residential exchange program.

The substantial increase in customer demand that occurred at the beginning of fiscal year 2002 coincided with the expiration of the 20-year power sales contracts that BPA signed with the majority of its customers after the passage of the Northwest Power Act. To allow customers to sign new long-term contracts for firm power, BPA established a “subscription window”—from April to October 2000. During this subscription process, the majority of BPA’s customers signed 10-year contracts for fiscal years 2002 through 2011.

Figure 7 shows a time line of BPA’s major actions during its subscription and ratemaking processes against a backdrop of wholesale electricity prices in the Pacific Northwest. When BPA began planning for the subscription process in early 1997, customers had recently reduced their power purchases from BPA by approximately 1,800 aMW to take advantage of low wholesale market prices. BPA officials told us that, due to the reduction in customer demand, they were concerned about the possibility that they might not be able to sell enough power to cover their costs. In BPA’s December 1998 record of decision on the subscription process, BPA stated that two of its principal goals were to spread the benefits of the federal power system as broadly as possible and avoid rate increases. Toward that end, BPA committed itself to providing power to investor-owned utilities and direct service industries, as well as serving all public utility demand placed on it.

**Figure 7: Major Events and Electricity Prices during BPA's Subscription and Ratemaking Processes**



Source: GAO analysis of Platts/RDI Powerdat data on wholesale electricity prices and data from BPA officials.

Note: Wholesale electricity prices are expressed in dollars per MWh and are not adjusted for inflation. These prices are from the Mid-Columbia Hub and are representative of wholesale electricity prices in the Pacific Northwest.

BPA officials told us that when wholesale electricity prices rose slightly during the late 1990s, they became concerned about customers demanding more power than BPA could provide from the federal power system. In May 2000, at the beginning of the subscription window, BPA filed a rate case with FERC to set power rates for fiscal years 2002 through 2006. In the rate case, BPA estimated that it would be called on to serve approximately 1,700 aMW of power beyond the firm output of the federal

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power system, based on input from customers on their expected power demand.

In June 2000, immediately after BPA filed its rates for 2002 through 2006 with FERC, wholesale power prices increased to levels never before seen in the Pacific Northwest, and BPA's public utility customers turned to BPA to avoid the high market prices. By the end of the subscription process, BPA's public utility customers had requested 1,600 aMW more power than BPA anticipated in its May 2000 rate case. In total, BPA's customers signed subscription contracts for 3,300 aMW of power (roughly equivalent to three times the power used by the city of Seattle) beyond the firm output of the federal power system.

BPA's rate structure for the fiscal year 2002 to 2006 rate period contributed to the increase in demand for BPA power. According to BPA officials, BPA planned to meet customer demand for power by purchasing additional power from other sources in contracts of varying durations. In its May 2000 rate case, BPA decided to sell all of its power at a single rate, which averaged the cost of the purchased power with the lower cost of power produced by the federal power system. This averaged rate spread the costs of serving the additional demand over all of BPA's customers and, as a result, did not distinguish between the price of low-cost power from the federal power system and the higher cost of power from other sources. In addition, the averaged rate structure gave customers poor incentives to seek alternative power sources during the subscription process, because customers were not exposed to the incremental cost of acquiring additional power on the market. While BPA considered the possibility of charging differentiated rates prior to its May 2000 rate case, it ultimately declined to do so.

To meet the substantial increase in customer demand, BPA spent about \$900 million in fiscal year 2002 and about \$760 million in fiscal year 2003 on power purchases and payments to customers to reduce their demand. These costs comprised approximately 25 percent of BPA's total costs in each year. Due to large increases in the wholesale price of power, the power that BPA purchased from other sources to meet the substantial increase in customer demand generally cost much more than power generated by the federal power system. For example, BPA's average cost for the power it purchased for 2002 and 2003 is approximately \$37 per MWh, while the average price of BPA's power, as established in its May 2000 rate case, was about \$22 per MWh. When purchasing power from the wholesale market became extremely expensive, BPA reduced its power purchases and instead paid its customers to reduce their demand for BPA

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power, in transactions referred to as “buy-backs.” BPA’s costs associated with buy-backs were about \$450 million in fiscal year 2002 and about \$370 million in fiscal year 2003. The majority of the buy-back payments went to investor-owned utilities and direct service industries. BPA was eventually forced to raise its rates by more than 40 percent for the majority of BPA’s customers to recover its costs and ensure that it had the funds to meet its payments on Treasury debt.

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### Drought Conditions and Other Factors Have Also Led to Cost Increases for BPA

While BPA’s overcommitment to provide power is the major cause of its cost increases in 2002 and 2003, other factors have also contributed to its cost increases in recent years. In 2001, severe drought conditions reduced the amount of power produced by the federal power system. According to BPA data, the annual runoff volume in the Columbia River Basin in 2001 was 40 percent below average and the second lowest since fiscal year 1929. To meet its customers’ demand for power, BPA spent about \$2.2 billion on power purchases in fiscal year 2001, an increase of \$1.9 billion over average annual expenditures on power purchases in fiscal years 1997 through 2000.

In addition, some of BPA’s other costs associated with marketing power have increased in recent years for a variety of reasons. These costs are associated with power generation (including costs for the residential exchange program), the fish and wildlife program, and BPA’s internal operations. (For a more detailed presentation of BPA’s costs associated with its power marketing business from fiscal year 1997 to 2003, refer to app. III.)

BPA’s power generation costs have increased consistently since 2000 because of increases in the cost of maintaining and operating the federal power system, as well as increases in payments to investor-owned utilities under the terms of a settlement agreement. BPA has reported that the increased costs for the federal power system were needed to make up for past under-investment. For example, a benchmarking study conducted in 2000 demonstrated that the federal hydropower system had not been maintained at the same level as comparable facilities and that increased investment was needed to improve its reliability, capacity, and safety. In addition, under the terms of a settlement agreement related to the residential exchange program, BPA’s payments to investor-owned utilities increased in 2002 and 2003 by about \$59 million per year, on average,

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compared with 1997 to 2001.<sup>17</sup> This increase is due to a change in how BPA calculates payments to these utilities.

BPA's average annual fish and wildlife program costs for 2002 and 2003 are 33 percent higher (\$42 million) than they were from 1997 to 2001, adjusting for inflation. According to BPA officials, the increase is due primarily to requirements to protect fish species listed under the Endangered Species Act. These requirements include measures designed to improve fish passage at the dams, analyze and refine hatchery management practices, study and report on ocean conditions, and improve spawning and rearing habitat. Fish and wildlife costs also increased because additional staff were needed to handle the contracting and administrative workload associated with threatened and endangered species recovery actions. BPA's fish and wildlife program staff increased from 35 in 1997 to 63 by 2003.

Finally, BPA's average annual internal operations costs associated with its power marketing business for 2001 to 2003 are 34 percent higher (or \$32 million, adjusting for inflation) than they were from 1997 to 2000, largely because of new requirements regarding employee retirement costs and increased demand placed on BPA during the current rate period.<sup>18</sup> Beginning in 2001, BPA began to pay certain retirement costs for its employees and some partner agency employees that it previously was not required to pay.<sup>19</sup> Between 2001 and 2003, these costs averaged almost \$17 million, adjusting for inflation, accounting for more than half the increase in internal costs, as compared with 1997 to 2000 average cost levels. In addition, according to BPA officials, a more complex rate structure created by greater demand for BPA power and new contracts increased

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<sup>17</sup>These numbers have been adjusted for inflation, base year 2003. This increase does not include the average annual cost to BPA of about \$245 million to buy back the majority of the 1,000 aMW of power it agreed to provide to investor-owned utilities under the settlement agreement, according to BPA officials.

<sup>18</sup>BPA has reported to its customers that its internal costs were 10 percent lower in 2003 than in 2001. In making this calculation, BPA excluded the costs associated with the retirement costs it was not previously required to pay. While BPA's calculation is correct, we believe that including these costs presents a more complete picture of BPA's expenses. In addition, since BPA's expenses in 2001 were already higher than in previous years, we calculated BPA's average costs for 1997 to 2000 in order to determine how much BPA's internal operations expenses have increased, on average, since 2001.

<sup>19</sup>According to BPA officials, BPA was required to cover these costs beginning in 1998. However, BPA deferred payment until 2001, thus increasing BPA's payments between 2001 and 2003.

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BPA's need for staffing and support, which raised its staffing and support costs.

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## **BPA Has Not Resolved Problems That Led to Its Recent Cost Increases, but It Has Taken Steps to Control Other Costs**

BPA has not resolved problems associated with its open-ended obligation to be the net provider of wholesale electricity in the region—the major cause of its recent cost increases. BPA has issued a draft strategic plan that includes an objective of clarifying its commitments to sell power to its customers. BPA proposes to contractually define the amount of power it will sell its customers at its lowest, cost-based rates and is also considering charging incremental rates for any power it sells beyond this amount. However, BPA has not clearly defined how much power it will sell at its lowest cost-based rates or the way it will implement incremental rates. It is also unclear whether BPA's draft plan will be implemented. BPA had similar plans in the late 1990s but did not implement them because of pressure from customers to increase, rather than limit, the amount of demand BPA served. BPA has, however, taken steps to reduce costs or control the extent of future cost increases in the areas of power generation, fish and wildlife programs, and internal operations. Further, BPA is improving its risk management process in order to maintain better control over its costs. However, regarding its risk management process, BPA's plan outlining its new approach does not contain some key elements, including details on specific activities, resources, and time frames.

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## **BPA Has Not Resolved Problems That Led to Recent Cost Increases**

BPA has not established a final, formal policy on how it plans to manage its open-ended obligation to be the net provider of wholesale electricity in the region—the major cause of its recent cost increases. In March 2004, BPA issued a draft strategic plan to define a direction for the agency. As part of that plan, BPA established an objective of clarifying how much power it will provide to its customers, and at what price, starting in fiscal year 2007. BPA's plan states that it will establish, via long-term power contracts with its customers, the amount of power that customers are able to buy at a low rate.<sup>20</sup> If customers request power beyond this amount, BPA's plan states that BPA will consider use of incremental rates to distinguish between low-cost power from the federal power system and

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<sup>20</sup> According to BPA officials, the use of long-term contracts is an integral part of BPA's proposal and may be the best means to protect U.S. taxpayers' investment in the federal power system.

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power from higher-cost resources. According to BPA, establishing rights to BPA's power and using incremental rates would send appropriate price signals to its customers and would be consistent with broad customer interest in allocating rights to power from the federal power system.

However, BPA's draft strategic plan does not provide key details on how it plans to implement its approach to defining rights to purchase power and using incremental rates. For example, BPA's plan does not specify the amount of power that its customers would be able to buy at BPA's lowest rates. If this amount exceeds the firm output of the federal power system, then during low water years, BPA could still need to buy power to meet its contractual obligations. In addition, BPA's plan does not clarify how BPA's approach to incremental rates would be implemented. As long as BPA's rates do not fully reflect its costs of acquiring power to meet excess demand, then customers will not have appropriate incentives to conserve or seek alternative power supplies.

In addition, it remains unclear whether BPA will succeed in making these changes once they are more clearly defined. While BPA officials told us that they have the discretion to implement BPA's plan, they said that they would strongly prefer to have regional agreement before making a final policy decision. Accordingly, BPA intends to hold a series of public meetings with its customers and stakeholders in 2004 to discuss its proposals. According to BPA officials, once they have received input and comments from all their customers and other stakeholders, the BPA Administrator will make a final policy decision and sign a record of decision in the fall of 2004. However, even if BPA reaches regional agreement on its plan, BPA has not followed through on similar proposals made in the past when faced with pressure from its customers. As discussed previously in this report, in the mid-1990s, BPA endorsed the recommendations of the Comprehensive Review report, which represented the views of BPA and its major customer and stakeholder groups. The report specifically recommended that BPA not acquire additional resources to serve its customers' load growth, except where the customers take on all the risk of the acquisition, such as by paying incremental rates that cover BPA's full cost of acquiring the additional power. However, under what BPA has characterized as strong regional pressure from its customers, BPA ultimately declined to implement such an approach in its 2000 rate case.

The possibility remains that BPA will face similar pressures again, although BPA officials identified several reasons why the agency is less likely to need to purchase significant amounts of power in the future,

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compared with recent years. For example, most of BPA's direct service industry customers, such as aluminum smelters, are no longer in operation, and some smelters are being dismantled. However, public utility demand is currently about equal to the firm output of the federal power system, according to BPA officials, and this demand is expected to increase over time. Since public utilities have a statutory right to purchase power from BPA, if future demand from public utility customers exceeds the firm output of the federal power system, BPA may again face pressure to average the cost of federal system power with higher cost power from other sources.

In a recent report, the Northwest Power and Conservation Council expressed concern that BPA's plan to allocate rights to power from the federal power system and charge incremental rates, using policy statements and records of decision, may not be sufficient to provide a necessary level of policy durability, leaving open the possibility that BPA could change its policy in the future.<sup>21</sup> To improve the durability of BPA's plan, the Council stated that BPA must clearly identify the priority issues that are to be resolved, the process by which they will be addressed, and adopt an aggressive schedule for doing so. That schedule should result in offering new long-term contracts by October of 2007. Further, while the Council decided not to press for substantive rulemaking at this time, it noted that if BPA's current approach proves incapable of resolving issues within that time frame, alternative processes should be considered, including issuing a rule under the Administrative Procedure Act to establish a policy on allocating rights to power from the existing federal power system and charging incremental rates. If adopted, this policy would be implemented through subsequent contract and ratemaking procedures. Unlike a record of decision, a policy adopted through a rulemaking procedure would have the force of law, bind future BPA and customer actions, and could not be altered unless BPA conducted a similar process. Such measures would increase assurance that BPA would not change direction in the future because of customer pressure.

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## BPA Is Taking Actions to Reduce and Control Costs in Other Areas

BPA has recently taken a number of actions to reduce costs or to control the extent of future cost increases in the areas of power generation, fish and wildlife programs, and internal operations. When setting its current

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<sup>21</sup>Northwest Power and Conservation Council, *Recommendations on the Future Role of the Bonneville Power Administration in Regional Power Supply*, May 2004.

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rates, BPA estimated that the average costs of its generating partners (the Army Corps of Engineers, Bureau of Reclamation, and Energy Northwest) for the 2002 to 2006 rate period would be \$24 million less per year than from 1997 through 2001. BPA officials based this estimate primarily on a 1998 review of BPA's costs that projected (1) savings by increasing coordination of and investment in the federal hydropower system and (2) operation and maintenance cost reductions and increased revenues from the nuclear power plant. While BPA and its partner agencies developed a strategy for jointly operating the federal power system with the goal of reducing system costs,<sup>22</sup> BPA has acknowledged that it did not develop adequate cost management plans to achieve the projected reductions and that BPA's partner agencies never committed to the reductions. For example, Corps officials stated that they had previously underinvested in maintenance and needed to increase expenses to improve the reliability, capacity, and safety of the hydroelectric facilities. BPA officials agree that increased investment in the power system is warranted but said that BPA is working with the partner agencies to minimize these cost increases. For instance, BPA has worked with Energy Northwest to defer maintenance and alter the fuel replacement schedule to reduce costs for the nuclear plant. In all, BPA has reduced the projected increase in the average annual costs of its generating partners by \$36.4 million for 2003 through 2006.

BPA has also taken several actions to control its costs associated with the fish and wildlife direct program and reduce their uncertainty. The direct program includes costs associated with (1) noncapital expenditures for measures funded in support of the Endangered Species Act and the Northwest Power and Conservation Council's fish and wildlife program, (2) off-site capital projects (i.e., capital costs not associated with a federal power system facility), and (3) a portion of BPA's internal costs associated with its fish and wildlife related support activities. In light of its financial problems, BPA directed the Northwest Power and Conservation Council to ensure that actual expenses for the direct program did not exceed \$139 million annually for fiscal years 2002 and 2003.<sup>23</sup> In addition, BPA has taken other measures to control direct program costs, including placing a temporary hold on funding for land purchases and easements while BPA

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<sup>22</sup>Bonneville Power Administration, *Asset Management Strategy for the Federal Columbia River Power System* (Portland, OR., June 1999).

<sup>23</sup>BPA originally set a funding target for the direct program in the 2002 to 2006 rate period at \$150 million annually, with the expectation that actual expenses would average \$139 million.

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reviewed its financial and liquidity position. While BPA's actions have achieved its desired result of holding direct program expenses in fiscal year 2003 to approximately \$139 million, they have also generated controversy among some stakeholders. For example, some stakeholders maintain that BPA cut funding for the direct program when it decided not to carry over more than \$38.8 million that remained when an earlier funding agreement for the direct program expired in 2001. According to BPA officials, this decision was made in 1996, as the funding agreement was being negotiated, and should not be considered part of their recent efforts to control costs. In addition, some stakeholders stated that BPA had cut another \$17.4 million from its direct program budget when it changed its planning and budgeting methods for fish and wildlife programs in November 2002. This change meant that because some costs incurred for projects in 2002 and prior years were not identified and paid by a certain date, they had to be paid from the 2003 and 2004 budgets, thereby reducing the amount of funding available for new projects by an estimated \$17.4 million in those years. According to BPA officials, BPA changed its fish and wildlife planning and budgeting methods to align them with the budgeting and planning processes used in its other program areas.

Finally, to reduce internal operations costs, BPA initiated two agencywide initiatives. As a first step, BPA reduced the fiscal year 2002 budget of each manager in its power marketing business and has reduced funding in many general areas, such as travel, training, supplies, staffing, research and development, and building upgrades. For example, BPA reduced agency travel expenses by about half and training expenses by about two-thirds from 2001 levels. According to BPA officials, these steps have helped BPA reduce its internal operations costs by \$42 million from fiscal year 2002 to 2003. Second, BPA is consolidating functions, such as procurement and information technology, that were previously dispersed throughout the agency. In addition, in March 2004, BPA contracted with a consulting firm to perform a comprehensive overview of BPA's major functions, systems, and processes to identify specific opportunities for program and performance improvement, which may yield additional savings.

While some of these actions have led to decreased costs in certain areas, BPA projects that its overall costs for the three categories in fiscal years 2004 to 2006 will remain 27 percent higher than its average from fiscal years 1997 to 2000. BPA officials said that without the cost control measures, costs for these categories would be expected to increase even more. They also noted that some of the cost increases—such as those required for fish and wildlife under the Endangered Species Act—are largely beyond BPA's control.

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## BPA Is Taking Steps to Improve Its Risk Management Process and Better Control Costs

BPA recently concluded that its risk management process had not kept pace with the changes taking place in the electricity industry and the increasing demands being placed on it by its stakeholders, and that this problem has contributed to BPA facing increased financial risk. Specifically, in an April 2003 report to its customers and Northwest citizens, BPA stated that, while it has historically assumed and managed significant amounts of risk on behalf of its customers, BPA's decision to take on demand beyond the firm output of the federal power system has gone beyond the limits of risk that it can accept. As a result, BPA is taking steps to improve its risk management process.

In June 2002, BPA hired a consulting firm to independently evaluate its risk management process. Risk management includes risk assessment and monitoring, which are two of the key elements of internal control.<sup>24</sup> Risk assessment identifies and analyzes the relevant risks associated with achieving an organization's objectives, while monitoring assesses the quality of performance of the risk management process over time and identifies any departures from this process. In its contract with the consultant, BPA asked the firm to

- identify, evaluate, and rank BPA's enterprise-wide risks;
- assess the state of BPA's risk management;
- compare BPA's risk management approach and structure with the industry's best and emerging practices;
- identify gaps in its risk management and control framework where improvements may be appropriate; and
- recommend an "Enterprise Risk Management" model and alternative organizational structures.

The consultant found that although BPA had significant risk management resources in specialized areas, based on BPA's business lines or specific types of risk, the agency's risk management efforts were decentralized and

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<sup>24</sup>Effective internal control should provide for an assessment of risks an organization faces from both external and internal sources. U.S. General Accounting Office, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

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were not integrated into an enterprise-wide structured approach.<sup>25</sup> The consultant made numerous recommendations for improvements in the following areas: planning and preparedness; risk identification and prioritization; monitoring, control, and reporting; follow-through and organizational learning; and general organization and leadership.

In March 2003, BPA developed a management plan to implement some of the consultant's key, high-level recommendations. The plan calls for two main strategies. First, the plan calls for the establishment of a Chief Risk Officer position and organization. According to the plan, the Chief Risk Officer position is designed to elevate risk issues to the senior management level on a par with business, financial, and program strategies. The Chief Risk Officer would lead BPA's revamped risk assessment and mitigation efforts and work across BPA's business lines and program offices.

Second, BPA's plan calls for the establishment of two oversight committees to operate under the direct, delegated authority of the BPA administrator. The Enterprise Risk Management Committee would oversee BPA's risk management program and would identify, analyze, evaluate, treat, monitor, and communicate risks across BPA's business lines and program offices. This committee is to consist of senior executives and would facilitate integration of risks across BPA and ensure that risk and strategy are considered in tandem. The committee would also establish the acceptable zones or boundaries for risk, often referred to as risk tolerances, within which the business lines will operate. The second committee, called the Transacting Risk Management Committee, would be headed by the Chief Risk Officer and handle the more tactical and technical transacting risks within business lines. This committee would focus on risks inherent in commodity market transactions and counterparty credit exposures. It would also oversee policies and procedures and establish risk monitoring and limits that will govern the commodity transaction risks.

BPA has taken several significant actions to implement its management plan. As of April 2004, BPA had made the following major changes to its risk management process:

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<sup>25</sup>BPA has two main business lines—Power Business Line and Transmission Business Line. These business lines are supported by several corporate units that also carry out significant functional responsibilities of the agency, such as the Environment, Fish, and Wildlife group.

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- centralized its risk management operations into a newly created Chief Risk Office that is headed by a newly appointed Chief Risk Officer, completed the initial transfer of risk-related jobs to the new Chief Risk Office, and announced additional staff recruitment for the office through the federal merit and competitive process;
  - chartered and established the Transacting Risk Management Committee and hired a staff manager for the Enterprise Risk Management Committee, which has not yet been established; and
  - instituted a requirement for its power marketing business that decisions in which the total lifetime costs, revenues, or potential risks are estimated to exceed \$500,000 will be formally documented in a standard form BPA refers to as a “Decision Support Template.”

While BPA continues its efforts to implement its plan and establish a more centralized risk management process, work remains to be done to ensure that the plan is successful. At this point, the plan provides limited information on how BPA will complete its implementation of the new approach to risk management. While the plan includes strategies and high-level descriptions, it generally does not yet identify specific activities, resources, and time frames for completing the implementation of BPA’s new approach. Neither does the plan address when, and to what extent, BPA will address all of the consultant’s detailed recommendations. Without this type of information, it is unclear when BPA intends to fully implement its new approach and to what extent its approach will address the consultant’s recommendations. According to BPA, its management plan is not intended to provide the full details necessary to implement its approach, and BPA intends to monitor the implementation of the plan and perform an internal assessment by September 2004. BPA officials told us that the Chief Risk Officer will lead the effort to revise BPA’s risk management process, including responding to the consultant’s detailed findings. However, BPA was unable to provide documentation of the activities, resources, and time frames it plans to take to fully implement its plan. Without such documentation, it was not possible to review the plan’s progress in a meaningful way.

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## Conclusions

Growing population in the Pacific Northwest region, combined with BPA’s open-ended obligation to provide power, have increased financial pressures on BPA. Past BPA attempts to meet growing demand—by providing financial backing for the construction of two nuclear power plants that were never completed and one gas fired power plant, the

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power from which BPA later determined it did not need—caused BPA’s costs to rise. This obligation to provide power was also the fundamental cause of recent cost increases and financial difficulties. Looking forward, this obligation remains a major source of risk for BPA. BPA must control its costs or risk not being able to compete with other power producers, potentially forcing it to default on its debt to the Treasury. One way to avert this risk and resolve the problems associated with BPA’s open-ended obligation is to allocate (or define) the rights to purchase the firm output of the existing federal power system and use incremental rates to distinguish between this “low-cost” power and any other power that BPA sells. While BPA currently plans to contractually set the amount of power its customers can buy at its lowest rate and to use incremental rates, similar intentions in the recent past were not implemented, in part because of pressure from BPA’s customers to provide more power. It is therefore important for BPA to credibly commit to allocating rights to purchase the firm output of the federal power system and using incremental rates. To assist BPA with its commitment to implement its draft strategic plan and increase assurance that BPA will not change direction in the future, the Northwest Power and Conservation Council has stated that a rule issued under the Administrative Procedure Act to establish a policy on allocating rights to power from the existing federal power system and charging incremental rates may provide greater durability. If established, such a rule would be implemented through subsequent contract and ratemaking procedures and would be more difficult to change than would an identical plan adopted in a record of decision.

In addition to growing pressure to provide power and financial benefits, BPA has faced a changing business environment as the electricity industry has undergone restructuring. These changes have posed management challenges for BPA and highlighted areas that need improvement. In particular, BPA’s decision to serve demand beyond the firm output of the federal power system at average rates puts the agency at risk of becoming uncompetitive. Recognizing this vulnerability, BPA has taken positive steps by developing a new approach to managing its risks. Following through on this approach with specific activities, resources, and time frames to fully implement its risk management initiatives is crucial to BPA’s ability to anticipate and prepare for challenges to its overall competitiveness. Better risk management should also help BPA in the future to avoid the kinds of decisions that contributed to its recent financial difficulties.

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## Recommendations for Executive Action

We recommend that the Administrator of BPA take the following four actions:

To reduce the risk that BPA will be overcommitted in the future and to help BPA control the costs of future power purchases, define the rights to purchase the firm output of the federal power system so that

- the amount of power that BPA sells at its lowest, cost-based rate is equivalent to the firm output of the existing federal power system, and
- customers who demand additional power from BPA are charged incremental rates that fully reflect the additional costs BPA incurs in acquiring or otherwise providing such power.

As a way to lend credibility to and reinforce BPA's actions, study the feasibility of issuing a rule under the Administrative Procedure Act to define the rights to purchase the firm output of the existing federal power system and set the terms of incremental rates for any power sold beyond that amount.

To strengthen BPA's management plan and to ensure that progress is made in implementing its new risk management approach, identify specific activities, resources, and time frames to implement BPA's risk management initiatives.

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## Agency Comments

We provided BPA with a draft of this report for review and comment. BPA generally concurred with our recommendations and said that the report, as a whole, accurately portrays the advantages and disadvantages BPA faces in marketing electricity as well as the root causes of its financial difficulties and associated rate increases during the last few years. Regarding our recommendation that BPA study the feasibility of issuing a rule under the Administrative Procedure Act to define the amount of power it sells at its lowest cost-based rate and to charge incremental rates for additional power, BPA stated that it plans instead to establish long-term contracts and rates under the terms of section 7(i) of the Northwest Power Act, which apply to the establishment of all BPA rates. However, this statement does not directly address our recommendation. We continue to believe that it would be prudent for BPA to consider the feasibility of issuing a rule under the Administrative Procedure Act because such a rule would have the force of law and could improve the durability of BPA's policy decisions. Concerning our presentation of BPA's increasing average annual internal operations costs associated with its

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power marketing business for 1997 to 2003, BPA stated that the inclusion by GAO of employee retirement costs in BPA's internal operations costs skews the costs upward in the latter years because those years included catch-up payments that accrued but were not paid in earlier years. We have discussed this point in the report and acknowledged that a large part of the increase in BPA's internal costs were the result of these catch-up payments for employee retirement costs. However, we continue to believe that including costs associated with employee retirement payments presents a more complete picture of BPA's internal operations costs since 1997 because these retirement payments represent a significant increase in BPA's internal costs going forward. The complete text of BPA's comments on our draft report is presented in appendix IV. BPA also made technical clarifications, which we incorporated in this report as appropriate.

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As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution of it until 30 days from the report date. At that time, we will send copies of this report to interested Members of Congress and make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you have any questions about this report or need additional information, please call me at (202) 512-3841. Key contributors to this report are listed in appendix V.

A handwritten signature in black ink that reads "Jim Wells". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

Jim Wells  
Director, Natural Resources  
and Environment

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# Appendix I: Scope and Methodology

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To address the overall objectives, we interviewed and obtained documentation from Bonneville Power Administration (BPA) officials, BPA's customers, and a variety of regional stakeholders. Among BPA's customers, we interviewed representatives of public utilities from each of the four primary states where BPA sells its power—including representatives from small and large public utilities as well as urban and rural public utilities. We also interviewed representatives of investor-owned utilities and direct service industries in the region, as well as members of state commissions regulating the investor-owned utility customers of BPA. Among BPA's regional stakeholders, we interviewed officials from the Northwest Power and Conservation Council, Columbia Basin Fish and Wildlife Authority, Columbia River Intertribal Fish Commission, Industrial Customers of Northwest Utilities, Northwest Energy Coalition, and Renewable Northwest Project. We also collected the views of several experts on the electricity market in the Pacific Northwest and BPA's role in that market.

To determine the advantages and disadvantages that BPA faces in marketing electric power in a more competitive environment, we interviewed and obtained documentation from BPA and its major customers and stakeholder groups. To compare BPA's power rates and generation costs with those of other wholesale providers of electricity, we obtained data from the Energy Information Administration and Platts'/RDI PowerDat. In assessing the reliability of these data through (1) interviews with knowledgeable officials and (2) electronic data testing, we determined that the reliability of these data was adequate to describe BPA's power rates and generation costs. To understand BPA's financing mechanisms, we examined published and unpublished financial data from BPA, interviewed BPA officials, and interviewed representatives from Standard and Poors and Fitch Ratings. We also reviewed pertinent laws and documents describing the history of the federal power system.

To determine the major causes of BPA's recent cost increases, we focused our review on the costs related to BPA's Power Business Line that are included in the power rates that BPA charges its customers. These costs differ from those available in BPA's annual reports, which include costs for the entire agency. We reviewed publicly available records that BPA produced to document the subscription and augmentation processes, including its 1998 record of decision on its subscription policy, rate cases filed in May 2000 and June 2001, and the April 2003 Report to the Region. We also interviewed BPA officials and reviewed internal BPA documents related to its power purchase and buy-back contracts. In assessing the reliability of data related to BPA's costs through (1) review of related

documentation, (2) interviews with knowledgeable officials, and (3) electronic data testing, we determined that the reliability of these data was adequate to describe BPA's costs associated with its power marketing business. Where possible, we compared data received from BPA with BPA's audited financial statements. Finally, we interviewed Northwest Power and Conservation Council officials, BPA customers, and other stakeholders to obtain their views on the reasons for BPA's cost increases.

To determine the extent to which BPA has taken actions to control its costs, we obtained relevant documentation and interviewed officials from BPA, the Northwest Power and Conservation Council, the Corps of Engineers, the Columbia River Intertribal Fish Commission, and the Columbia Basin Fish and Wildlife Authority. To determine the steps BPA has taken to improve its risk management process, we reviewed documents related to risk management standards—including GAO's *Standards for Internal Control in the Federal Government*, and *Enterprise Risk Management Framework*, prepared by the Committee of Sponsoring Organizations of the Treadway Commission—and reviewed relevant BPA documents, including reports prepared by a consultant hired by BPA to evaluate its risk management process and make recommendations for improvement. We also examined the BPA Administrator's performance contract and BPA's strategic plan as they related to BPA's risk management process. In addition, we obtained documentation and interviewed BPA officials on proposed changes to BPA's financial information system—the Bonneville Enterprise System—that manages its accounting data and budgetary allocations. However, we were unable to obtain consistent information on the nature and need for BPA's proposed changes, and thus could not determine to what extent these proposed changes would allow BPA to control its costs.

We conducted our work from August 2003 through April 2004 in accordance with generally accepted government auditing standards.

# Appendix II: BPA's Costs Associated with Fish and Wildlife Programs

This appendix provides details on BPA's costs associated with its fish and wildlife programs for fiscal years 1985 to 2003. See table 1.

**Table 1: BPA's Costs Associated with Fish and Wildlife Programs, Fiscal Years 1985-2003**

Dollars in millions

Year	Direct program costs	BPA internal support costs <sup>a</sup>	Reimbursable costs	Capital investment costs	High priority/action plan costs <sup>b</sup>	Total
1985	\$24.2	\$0	\$30.3	\$30.0	\$0	<b>\$84.5</b>
1986	29.1	0	35.2	32.8	0	<b>97.2</b>
1987	32.1	0	43.0	41.3	0	<b>116.4</b>
1988	26.4	0	26.7	43.5	0	<b>96.6</b>
1989	31.1	0	31.9	43.1	0	<b>106.1</b>
1990	42.7	0	30.5	44.7	0	<b>117.9</b>
1991	41.4	0	30.5	48.0	0	<b>119.9</b>
1992	82.1	0	34.8	51.3	0	<b>168.2</b>
1993	59.4	0	36.5	64.2	0	<b>160.1</b>
1994	65.5	0	40.9	71.9	0	<b>178.3</b>
1995	82.0	0	41.5	73.0	0	<b>196.5</b>
1996	77.2	0	39.9	82.4	0	<b>199.4</b>
1997	91.0	0	39.8	84.5	0	<b>215.3</b>
1998	114.8	0	39.8	81.1	0	<b>235.7</b>
1999	107.9	9.0	42.0	82.2	0	<b>241.1</b>
2000	106.7	7.8	39.8	81.7	0	<b>236.0</b>
2001	94.3	9.1	43.9	79.7	3.0	<b>230.0</b>
2002	128.9	10.5	51.9	57.5	7.2	<b>256.0</b>
2003	\$128.7	\$11.9	\$52.6	\$56.7	\$6.5	<b>\$256.4</b>

Source: GAO analysis of BPA data.

Note: In constant dollars, base year 2003.

<sup>a</sup>Prior to fiscal year 1999, these costs were included within direct program costs but not shown separately.

<sup>b</sup>Special program implemented in fiscal year 2001 to help offset fish losses resulting from the power emergency declarations caused by the drought.

## Definition of Cost Categories

1. Direct program costs—These costs are the noncapital expenditures for fish and wildlife activities funded directly by BPA as well as off-site (not part of a federal power system facility) capital projects. The activities funded are based on measures in the Biological Opinions and the Council's Fish and Wildlife Program. Prior to fiscal year 1999, this

category also includes the part of the budget that BPA devotes internally to fish and wildlife related support activities.

2. BPA internal support costs—These costs are BPA's internal expenditures for program support as well as contracts and other expenditures on behalf of the fish and wildlife program. Until fiscal year 1999, these costs were included as part of the Direct Program. They remain part of direct program costs but are now shown separately.
3. Reimbursable costs—These costs consist of the hydroelectric share of operation and maintenance and other noncapital expenditures for fish and wildlife related activities by the Corps of Engineers (Corps), Bureau of Reclamation (Bureau), and U.S. Fish and Wildlife Service that are funded by appropriations and then reimbursed to the U.S. Treasury by BPA. In addition, this category includes the part of the Council's operating budget allocated to fish and wildlife activities. These costs are now funded under direct funding agreements signed with each of the three agencies.
4. Capital investment costs—These costs consist of the projected amortization, depreciation, and interest payments for (1) past fish and wildlife related borrowing by BPA; (2) the portion of past fish and wildlife capital investments by the Corps and Bureau for which BPA is already obligated to repay the U.S. Treasury; (3) the hydroelectric share of future fish and wildlife related capital investments by the Corps and Bureau that will be funded by appropriations and then reimbursed to the U.S. Treasury by BPA, based on activities called for in the Biological Opinion, the Council's Fish and Wildlife Program, and other authorities; and (4) other capital investments directly funded by BPA borrowing that are based on activities called for in the Biological Opinion and the Council's Fish and Wildlife program.
5. High-priority/action plan costs—Costs for a special program designed to mitigate for damages to fish resulting from the 2001 power system emergency. Criteria for projects included (1) addressing imminent risks to the survival of one or more species listed under the Endangered Species Act that represent a time-limited opportunity or are broadly recognized as projects that would achieve direct anadromous fish benefits; (2) are appropriate mitigation for the federal power system and not in lieu of expenditures or actions authorized or required by other entities and are otherwise consistent with the Power Act; and (3) the proposed project had all planning, permitting, and landowner agreements completed so that on-the-ground work could begin not later than September 30, 2001.

# Appendix III: BPA Costs Associated with Its Power Marketing Business, Fiscal Years 1997-2003

This appendix provides details on BPA's costs that are associated with its power marketing business and are charged to its power rates for fiscal years 1997 to 2003. (See table 2.) According to a BPA official, these data are consistent with BPA's audited financial statements.

**Table 2: BPA Costs Associated with Its Power Marketing Business, Fiscal Years 1997-2003**

Dollars in millions							
	1997	1998	1999	2000	2001	2002	2003
Power purchases—short term	\$66.4	\$151.8	\$288.2	\$661.4	\$2,191.1	\$306.6	\$228.8
Power purchases—long term	0	0	0	0	0	456.0	395.1
Power buy-backs	0	0	0	0	123.3	461.7	368.4
Power system generation	639.4	647.9	503.5	477.2	591.2	641.8	672.7
Fish and wildlife	109.4	133.0	136.3	135.5	127.1	170.2	170.3
Internal operations	102.4	90.3	99.7	94.7	115.5	157.3	115.0
Transmission and ancillary services	271.4	303.8	320.1	261.7	234.6	193.1	156.9
Other	896.2	994.4	1,074.5	949.5	1,020.9	992.2	932.1
<b>Total</b>	<b>\$2,085.2</b>	<b>\$2,321.2</b>	<b>\$2,422.3</b>	<b>\$2,580.0</b>	<b>\$4,403.7</b>	<b>\$3,378.9</b>	<b>\$3,039.3</b>

Source: GAO analysis of BPA data.

Note: In constant dollars, base year 2003.

## Definition of Cost Categories

1. Power purchases (short term)—Costs of the power BPA purchases in the short term to use the flexibility of the federal power system to optimize its value and to provide operational stability to the system.
2. Power purchases (long term)—Costs of the power that BPA signed contracts to purchase in 2002 and 2003 to meet demand beyond the firm output of the federal power system.
3. Power buy-backs—Costs of buy-back payments that BPA made to investor-owned utilities, direct service industries, and public utilities in addition to power purchases.
4. Power system generation—Costs associated with operation and maintenance costs for the federal dams, the nonfederal nuclear plant, and long-term generating projects. Includes BPA expenditures for the residential exchange program, energy conservation, and renewable energy development. Also includes BPA's share of costs to decommission nonoperating power projects and expenses for the benefits BPA receives from storage projects in Canada. Does not include payments to investor-owned utilities to buy back power BPA

agreed to sell under a settlement agreement of the residential exchange program; these costs are included under power buy-backs.

5. Fish and wildlife—Costs associated with BPA’s direct program, high priority actions, the Northwest Power and Conservation Council, and Lower Snake River Hatcheries. Direct program costs include BPA’s direct noncapital expenditures to protect, mitigate, and enhance fish and wildlife affected by the development of the federal power system. The activities funded are based on measures in the Biological Opinions and the Council’s Fish and Wildlife Program. Direct program costs also include BPA’s internal expenditures for program support. High priority actions costs are for a program designed to mitigate for damages to fish resulting from the 2001 power system emergency and designed to address imminent risks to the survival of one or more species listed under the Endangered Species Act. BPA funds the Northwest Power and Conservation Council’s annual operating budget, which averaged almost \$8 million per year, from fiscal year 1997 to 2003. Approximately half its budget, including staff time, is dedicated to fish and wildlife activities. Lower Snake River hatcheries costs include payments to the U.S. Fish and Wildlife Service to fund fish hatcheries on the Snake River.
6. Internal operations—Costs associated with BPA power nongeneration operations, shared services and administration, and the civil service retirement system. Power nongeneration operations costs include BPA’s portion of expenses related to the joint management of the federal power system; oversight of the nonfederal nuclear project, development, and administration of power contracts; tribal relationship management; Canadian Treaty management; public involvement and policy development; power rates setting, power financial management, and power billing; short-term and long-term marketing and support; development and management of conservation and energy efficiency programs; system operations support (such as weather and stream flow forecasting, scheduling, load forecasting); maintenance of automated systems for Power Business Line application and system management; and projects to improve overall performance and meet market challenges, such as increasing forecasting capabilities to optimize federal power system generation. Shared services and administrative costs include the costs for information technology services; infrastructure and maintenance; building rent, maintenance, and security; and mail services, personnel services, library and printing services, as well as the portion of corporate general and administrative costs allocated to power rates. Civil service retirement system costs are associated with the unfunded

liability of the Civil Service Retirement and Disability Fund, the Employees Health Benefits Fund, and the Employees Life Insurance Fund, which had not been covered prior to fiscal year 1998. These costs also include the power related portion of the Army Corps of Engineers, Bureau of Reclamation, and the U.S. Fish and Wildlife Pension and Post-retirement Benefits.

7. Transmission and ancillary services—Costs associated with services necessary to support the transmission of energy from resources to loads, including reliability, scheduling and dispatch, spinning reserves, emergency reserves, load following and regulation, automatic generation control, energy imbalance, transmission losses, control area reserves for resources and for interruptible purchases.
8. Other—Include costs associated with the nonfederal debt service, depreciation, amortization, net interest, and bad debt/expense adjustment. Nonfederal debt service costs include BPA's portion of the debt of Energy Northwest and various nonfederal conservation and hydroelectric projects. Depreciation costs are the allocation of expenses associated with property, plant, and equipment to each period benefited by the asset. Depreciation is calculated by dividing the costs of the asset, less any applicable salvage value, by its estimated useful life or allowable period of time. Amortization costs are the allocation of expenses associated with intangible capital investments, such as for conservation and fish and wildlife. Net interest expense costs are the net expenses resulting from money borrowed to construct and maintain the federal power system and other projects. Costs associated with bad debt expenses include money BPA did not receive from parties who have declared bankruptcy. Expense adjustments represent miscellaneous accounting entries not associated with specific programs.

# Appendix IV: Comments from the Bonneville Power Administration



**Department of Energy**  
Bonneville Power Administration  
Washington, D.C. 20585

JUN 22 2004

In reply refer to: DC-Wash.

Mr. Jim Wells  
Director, Natural Resources and Environment  
United States General Accounting Office  
Washington, D.C. 20548

Dear Mr. Wells:

The Bonneville Power Administration (BPA) appreciates the opportunity the General Accounting Office (GAO) has provided us to review and comment on the draft of your report entitled Bonneville Power Administration: Better Management of BPA's Obligation to Provide Power is Needed to Control Future Costs (GAO-04-694) and to discuss our comments with GAO staff.

We also appreciate the extensive effort GAO has invested over the past year to fully investigate these issues. We concur generally with your recommendations and believe the draft report as a whole accurately portrays the advantages and disadvantages BPA faces in marketing electricity as well as the root causes of our financial difficulties and associated rate increases during the last few years.

We do have a few observations that we hope will strengthen your report, primarily related to progress we have made since April. We have also attached a number of technical comments and suggestions.

#### Defining BPA's load obligation

Your draft report recommends that BPA reduce its future risk of open-ended load obligation by:

- (1) limiting the amount of power we sell at our lowest cost-based rate to the existing federal system firm output, and
- (2) charging incremental rates for any power sold beyond this amount that fully reflect the additional costs BPA incurs in acquiring or otherwise providing such power.

We concur and have made substantial progress in this area by advancing our draft strategic plan.

The draft report states on page 32:

“In March 2004, BPA issued a draft strategic plan to define a direction for the agency. As part of that plan, BPA established an objective of clarifying how much power it will provide to its customers, and at what price, starting in fiscal year 2007. BPA’s plan states that it will establish, via long-term power contracts with its customers, the base amount of power that customers are able to buy at a low rate. If customers request power beyond this base amount, BPA’s plan states that BPA will consider use of incremental rates to distinguish between low-cost power from the federal power system and power from higher-cost resources.”

Consistent with our draft strategic plan, BPA’s load obligations now are largely defined in contract through 2011. We recently signed agreements with six investor-owned utilities that eliminate 2,200 average megawatts of load uncertainty for the 2007-2011 period. We soon will release a draft policy that proposes to resolve the remaining smaller load uncertainties through 2011. We are also proposing a permanent BPA policy decision that will limit our load obligations as recommended in your report. We anticipate making the final policy decision on this topic this fall after a public review period.

We are making this long-term policy proposal because we believe that, consistent with your report and our draft strategic plan, it is in the interest of BPA, its customers, and the region as a whole to encourage market infrastructure investments and regional actions to ensure an adequate, efficient, and reliable power and transmission service. Clearly defining marginal cost responsibility for investments will provide lead-time for those with load-serving obligations to develop adequate resources. Along with ensuring adequate, efficient, and reliable power service, this approach will ensure that the Federal Columbia River Power System assets are managed to protect ratepayer and taxpayer interests over time.

The policy decision we expect to make this fall will not be sufficient by itself to accomplish the objectives you suggest or to fully carry out our draft strategic plan. As indicated in our draft strategic plan, the policy decision will have to be followed by development of contracts and rates that secure the policy for the long term. We expect to soon release a schedule by which we will, in consultation with our customers and other stakeholders, do the necessary contract and rate work well in advance of 2011.

Your draft report recommends that BPA consider issuing a rule under the Administrative Procedures Act to set limits on the amount of power it sells at its lowest cost-based rate and on the terms of incremental rates. Section 7(i) of the Pacific Northwest Electric Power Planning and Conservation Act governs the establishment of BPA rates, and details the specific procedures that BPA must follow to establish them. These procedures apply to the establishment of all BPA rates, whether for the sale of power from the existing federal system or from new resources. As such, we plan to explore establishing a long-term rates methodology through a 7(i) proceeding.

Rates and contracts together will define prices and rights to the firm output of the existing federal power system and the incremental rates and terms for supply beyond this base amount of existing federal power.

Managing risks systematically

Your draft report recognizes BPA's planning and implementation of a relatively new enterprise risk management framework. This approach extends beyond risks associated with cost control and involves a more rigorous approach to assessing and responding to risks that affect the achievement of our strategic and financial objectives. Since your April observation, BPA has continued to execute its risk improvements, including making staff hires, convening management governance committees, and establishing risk management work plans. We appreciate GAO's support for our continued efforts in this area.

A technical point on conveying trends in BPA's internal operating costs

One technical detail of the report is particularly important to BPA. The draft report states on page 30:

“ ... BPA's average annual internal operations costs associated with its power marketing business for 2001 to 2003 are 34 percent higher (or \$32 million, adjusting for inflation) than they were from 1997 to 2000, largely because of new requirements regarding employee retirement costs and increased demand placed on BPA during the current rate period.”

As is noted in the draft report, GAO included Civil Service Retirement System (CSRS) payments in power-related internal operations costs. CSRS costs were first reflected in 1998 when the agency was made wholly responsible for financing pensions of its employees and those of the U.S. Army Corps of Engineers and Bureau of Reclamation associated with the Federal Columbia River Power System. Because this new requirement occurred in the middle of a rate period, BPA made less than full CSRS payments from 1998-2001 with the agreement that it would make substantial “catch up” payments beginning in 2002 when BPA re-established power rates. To compensate for the skew created by these catch-up payments and create an accurate comparison of period expenses, we believe it is necessary to remove these costs from internal operations expenses in both periods.

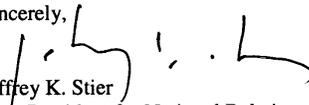
As you note in footnote number 17, using this approach, our internal operations costs allocated to power were 10 percent lower in 2003 than in 2001. Our 2004 power internal costs also will be below 2001 levels. We believe this more accurately portrays trends in our internal operating costs and is the basis for our ongoing commitment to the region that we manage internal operations costs at or below 2001 actuals on average for the remainder of the rate period.

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We have done our best in the time allowed to provide the attached technical, editorial and policy comments. We believe the inclusion of these comments will improve the accuracy of your report and will help you improve the final product. BPA will include a link to the final audit report and other relevant background information on our web site at [http://www.bpa.gov/corporate/about\\_BPA/audits/](http://www.bpa.gov/corporate/about_BPA/audits/)

Again, thank you for allowing us the opportunity to comment on the draft report.

Sincerely,

  
Jeffrey K. Stier  
Vice-President for National Relations

Enclosure

cc:  
D. Hill, GC-70  
L. Novitsky, ME-1  
B. Porter, PML

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# Appendix V: GAO Contacts and Staff Acknowledgments

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## GAO Contacts

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## Staff Acknowledgments

In addition to the individuals named above, Jill Berman, Jonathan Dent, Samantha Gross, Jason Holliday, Jon Ludwigson, Don Neff, Cynthia Norris, Eric Wenner, and Doris Yanger made key contributions to this report. Important contributions were also made by Janice Lichty, Lisa Shames, and Barbara Timmerman.

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