

March 1997

FEDERAL POWER

Issues Related to the Divestiture of Federal Hydropower Resources





United States
General Accounting Office
Washington, D.C. 20548

**Resources, Community, and
Economic Development Division**

B-275838

March 31, 1997

Congressional Requesters

As you requested, this report provides information on (1) the profiles of three power marketing administrations, including their similarities and differences and their interactions with the agencies that operate federal water projects; (2) the general parameters of the process by which federally owned assets can be sold; and (3) the factors that would have to be addressed in a divestiture of federal hydroelectric assets, such as the relationship between power generation and the other purposes of federal water projects. We agreed to include in our study only the Southeastern, Southwestern, and Western Area Power Administrations.

As agreed with your offices, we are sending copies of this report to the appropriate House and Senate Committees; interested Members of Congress; the Administrators of the Southeastern, Southwestern, and Western Area Power Administrations; the Commissioner, Bureau of Reclamation; the Director for Civil Works, U.S. Army Corps of Engineers; and other interested parties.

If you or your staff have any questions, please call me at (202) 512-3841. Major contributors to this report are listed in appendix IX.

A handwritten signature in black ink, appearing to read 'Victor S. Rezendes'.

Victor S. Rezendes
Director, Energy, Resources,
and Science Issues

B-275838

List of Requesters

Representative Charlie Norwood
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Representative Bill Barrett
Representative Doug Bereuter
Representative George E. Brown, Jr.
Representative Ed Bryant
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B-275838

Executive Summary

Purpose

The nation's five power marketing administrations (PMA)—Alaska, Bonneville, Southeastern, Southwestern, and Western Area—are agencies within the Department of Energy (DOE) that sell the electricity generated by hydropower plants operated by the Department of the Interior's Bureau of Reclamation (Bureau) and the U.S. Army's Corps of Engineers (Corps). These powerplants are located at federal water projects. In the 1986 budget, the President proposed divesting the Alaska Power Administration from federal ownership. Ten years later, this sale—delayed by numerous technical details, such as the need to more clearly define postdivestiture rights-of-way and easements—still has not been completed. The long time to arrange the successful transfer of the smallest of the PMAs emphasizes the complexity and the number of issues to be addressed before divesting any of the larger PMAs.

In recent years, various bills to divest the federal assets used for generating, transmitting, and marketing hydroelectricity (called “hydropower assets”) have been introduced. In response to these proposals, on January 18, 1996, various Members of Congress requested that GAO examine the issues related to the sale of these assets. GAO agreed to develop a “primer” discussing the issues to be considered in any discussions of the divestiture of the federal hydropower assets, including the PMAs. GAO agreed to provide information on (1) Southeastern, Southwestern, and Western, including their similarities and differences, and their interactions with the agencies that operate federal water projects (mostly, the Bureau and the Corps); (2) the main objectives and general decisions involved in divesting federal assets, along with how these objectives and decisions apply to divesting the federal hydropower assets; and (3) the specific issues related to hydropower to be addressed before a divestiture of the PMAs.

Background

Federal water projects consist of several resources, such as dams, reservoirs, and in cases where hydropower is generated, hydropower plants. The PMAs market the power generated at these projects and, with the exception of Southeastern, own and operate the facilities that transmit the power. The hydropower plants are owned and operated by other agencies—primarily the Bureau and the Corps. These agencies (called “operating agencies”) balance how water is used at federal water projects among various purposes, including the enhancement of fish and wildlife habitat, flood control, irrigation, municipal and industrial uses, navigation, power generation, and recreation. The amount of hydropower generated

and marketed is affected by the availability and use of water for these other purposes.

The federal power marketing program has developed incrementally since it began in the early 1900s. Hydropower plants were authorized to provide power for the project's needs. Legislation also sought to use hydropower generated in excess of those needs to be used to aid in the financial undertaking of the project and to promote social and economic development by directing the PMAs to market power at the lowest possible rates consistent with sound business principles. In their sales, the PMAs are also directed to give priority to "preference customers," or public bodies and cooperatives, such as municipal utilities, rural electric cooperatives, and irrigation districts.

The three PMAs covered by GAO's review (Southeastern, Southwestern, and Western) receive annual appropriations to cover their operating and maintenance (O&M) expenses and, if applicable, the capital investment in transmission assets. Federal law calls for the PMAs to set their power rates at levels that will repay these appropriations; it also calls for the PMAs to set their rates to recover the annual power-related O&M expenses and annualized capital costs expended by the operating agencies to generate the power. DOE's implementing order specifies that unless otherwise prescribed by law, the appropriations used for O&M expenses must be recovered in the same year that the expenses were incurred but that appropriations used for capital investments must be recovered, with interest, over periods not to exceed 50 years.

Results in Brief

While Southeastern, Southwestern, and Western all market the hydropower generated at federal water projects, they serve different geographical areas and have different assets. Their customers vary in size and in their electric energy purchases. On average, 52 percent of the customers of these three PMAs are considered "small" (delivering 100,000 megawatt hours (MWh) or less to end-users), while 19 percent are considered "large" (delivering more than 500,000 MWh to their end-users).¹ PMAs are not the main source of electricity for most of their customers; the three PMAs in our report supply about 7 percent of the electricity requirements of their customers. However, because the PMAs' power is purchased primarily during times of peak demand at rates that are, on

¹A watt is the basic unit used to measure electric power. A kilowatt (kW) is 1 thousand watts of power, and a megawatt (MW) is 1 million watts. A kilowatt-hour (kWh) is 1 thousand watts applied for 1 hour and a MWh is 1 million watts applied for 1 hour. The average home in the United States uses about 10,000 kWh of electricity per year.

average, half of the rates charged by other utilities, great demand exists for the PMAS' power, and there are waiting lists to become customers. The PMAS have a close working relationship with the Bureau and the Corps. These interactions are based in part on written agreements and on flexible arrangements that recognize the operating agencies' role in managing water releases in a way that balances a project's multiple purposes.

Two principal objectives have typically been cited by other nations and by the United States for selling government assets: (1) eliminating or reducing the government's presence in an activity that some view as best done by the private sector and (2) improving the government's fiscal situation. As the basis for deciding to divest government assets, these two objectives will affect many subsequent decisions needed to implement a sale. Implementation issues include decisions about such concerns as what specific assets to sell, how to group these assets, what conditions and liabilities to transfer to the buyer, and what sales mechanism to employ. The two broad objectives, which apply to any divestiture of government assets, have also been advanced by proponents of divesting the federal hydropower assets.

If, based on a broad policy evaluation of the pros and cons of privatization, a decision to divest federal hydropower assets is reached, several key issues specifically related to hydropower would need to be addressed. These issues include balancing how water is used among the multiple purposes of federal water projects; assigning the numerous contractual obligations and liabilities of the Bureau, the Corps, and the PMAS; handling Native Americans' claims to water, property, and tribal artifacts; and determining the future responsibility for protecting the environment and endangered species—a commitment that already constrains the operations of many projects. The potential effects of a divestiture on wholesale and retail electric rates, which in turn would affect regional economies, are other important issues. To a large degree, these impacts would be determined by the prevailing wholesale electric rates of the local utilities in the region in which power from the PMA is sold, the region's reliance on this power, and the availability of other sources of power. The issues affecting the divestiture of any large government enterprise, including the federal hydropower program, are complex. However, complex issues have arisen and been successfully addressed in other federal and private sector transactions and asset transfers.

GAO's Analysis

PMAs, Which Differ in Size and Assets, Sell to Varied Customers

Western, Southeastern, and Southwestern—which jointly sold about 1.6 percent of the nation's electricity in fiscal year 1994—differ in size and assets. Western is the largest of the three, marketing power in 14 states from 56 hydropower plants and one coal-fired power plant operated, for the most part, by the Bureau. Western, which markets from a total generating capacity of about 9,800 MW, had revenues from power sales of about \$658 million in fiscal year 1994. Southeastern markets power in 11 states from 23 hydropower plants operated by the Corps with a generating capacity of about 3,100 MW. Southeastern had revenues from power sales of about \$156 million in fiscal year 1994. Unlike the other two PMAs, Southeastern owns no transmission lines and therefore relies on regional utilities for transmission services. Serving six states from 24 Corps-operated hydropower plants with a generating capacity of about 2,100 MW, Southwestern had revenues from power sales of about \$98 million in fiscal year 1994.

In fiscal year 1994, Western, Southeastern, and Southwestern had 637, 294, and 62 customers, respectively. These customers, who are generally preference customers, vary in terms of type, size, and the amount of power they purchase. Some customers are public utilities that are among the largest in the nation, while others are small rural electric cooperatives in sparsely populated areas. Some customers generate and transmit internally generated electricity, while others only distribute electricity purchased from other utilities and suppliers. About 7 percent of the power sold by these PMAs is purchased by other federal agencies.

Because the three PMAs have a limited amount of electricity to sell, about three-quarters of their preference customers obtain more than half of their electric energy from other sources. However, their customers benefit from purchasing power from the PMAs because their rates average about half of those from other sources. The PMAs' ability to set lower rates stems from several factors, including the low cost of hydropower in comparison to power generated from other sources as well as the lower embedded capital cost of their hydropower plants.

The PMAs maintain close working relationships with the Bureau and the Corps. The Bureau's and the Corps' operating plans and manuals define the timing and amount of water to release from the reservoirs. These

agencies generate hydropower subject to these operating conditions and other factors, such as environmental restrictions and the water quality standards of state water boards. The PMAs try to sell hydropower in a way that is consistent with these patterns of water releases while maximizing the value of federal power.

The Government's Objectives Will Influence General Decisions About Divesting Federal Assets

Similar to divestitures by foreign governments, as examined in the surveys of international experiences, the proposals to divest federal assets in the United States, such as hydropower assets, have generally stemmed from two objectives: (1) eliminating or reducing the federal role in an activity that some view as best done by the private sector and (2) improving the federal fiscal situation. Both of these objectives have also been advanced by those who favor divesting federal hydropower assets. For example, the proponents of divesting federal hydropower assets question the role of government in producing and marketing electricity and contend that the marketplace for electricity has become increasingly competitive because of such various production and marketing changes as the ability of buyers to purchase electricity from competing sources in wholesale markets, the development of low-cost gas-fired electricity generation, and the emergence of power brokers. Proponents also assert that the government's ability to operate, maintain, and repair these assets is not well served by the government's capital planning and budgeting systems.

On the other hand, the opponents of this divestiture stress the importance of many other policies and goals that are related to the production of federal hydropower—for instance, providing reasonably priced electricity to remote rural, low-income areas. They also contend that federal hydropower is generated subject to the other purposes of federal water projects, such as irrigation, and that a divestiture could complicate the government's ability to protect these purposes. Opponents also maintain that the acquisition of federal hydropower assets and marketing services by the private sector, combined with continuing mergers and acquisitions in the electric utility industry, would lead to a concentration of greater market power in the hands of fewer utilities. This, in turn, would increase the likelihood of higher electric rates for consumers.

The proponents believe that the net effect of the sale of federal hydropower assets on the U.S. Treasury would be positive because, among other reasons, the new owners would be subject to taxes and the divestiture would eliminate what the proponents perceive to be financial subsidies to the PMAs' ratepayers. In contrast, the opponents of this

divestiture believe that the PMAS' rates are not subsidized and, if these assets were sold, the Treasury's loss of revenue over time would exceed the proceeds from the sale. Assessing the full financial impact of a divestiture requires examining the estimates of the sale price as well as the magnitude and timing of expected revenues and expenditures (including the impact on future tax revenues), assessing a variety of direct and indirect costs, expressing these amounts in present value terms, and addressing underlying uncertainties in sensitivity analyses.² An analysis of the budgetary treatment of an asset divestiture, however, does not fully capture the long-term financial implications on the federal budget. Budgets are usually projected and analyzed in terms of 5-year windows. Such a short time frame, however, does not capture the financial implications of divesting federal hydropower facilities, because these assets frequently have projected useful lives of many decades.

Establishing the underlying objectives for a sale of federal assets, in general, and for the PMAS, specifically, is important because the emphasis accorded each objective will determine the subsequent decisions in the divestiture process. Because many alternative divestiture paths exist, specific choices can enhance or compromise the government's divestiture goals. In general, the government faces decisions on determining the specific assets to be sold, the conditions to be placed on their use by the prospective buyer, the liabilities to be transferred to the buyer or otherwise retained, and the sales mechanism and the processes to be employed. For example, if the government decides that seeking full market value for its assets is paramount to other goals, it could choose sales methods that allow for competitive bidding and place few restrictions on the number or identity of bidders. Alternatively, if the government's primary goal is obtaining private sector operation of its assets and receiving a full market price is only a secondary goal, it could choose to negotiate a sale price with a selected buyer. In addition, decisions about the sales processes to employ—for instance, trade sales or stock offerings—need to be made. Finally, the government will need to decide who will manage the sale.³

²A sensitivity analysis examines how the result of a calculation is affected by changes in the variables used.

³A trade sale occurs when assets are sold to firms in the relevant trade or industry.

Specific Issues That
Should Be Addressed in
Connection With Divesting
Federal Hydropower
Assets

A divestiture of federal hydropower assets raises many complex issues to be addressed. Among them is an issue that pertains to the very nature of federal water projects—their multiple purposes, as specified in their authorizing legislation. For instance, most projects managed by the Corps were built with the authorized purposes of flood control and navigation while other laws have specified additional uses for the water in these projects. For example, the Endangered Species Act directs the Bureau and the Corps to implement programs to conserve endangered and threatened species and to ensure that their actions do not jeopardize those species or their critical habitat. Unless the legislation authorizing a divestiture exempted the transfer from the preexisting legal provisions that had established the project's purposes, these provisions would continue to affect how the new owner could manage the water project, how much power the new owner could generate, and potential sales prices.

Irrigation is a unique authorized purpose because power revenues pay a portion of the irrigation costs. Specifically, the Secretary of the Interior assigns to be repaid through these revenues most, but not all, of the federal investment in irrigation facilities that the Secretary deems the irrigators cannot afford to repay. For instance, according to Bureau officials, power revenues are ultimately expected to cover about 70 percent of the federal investment in completed irrigation projects. As of September 30, 1995, Western—through its power revenues—was responsible for recouping about \$1.5 billion over periods ranging up to 60 years for individual projects; however, only about \$32 million of the federal investment in irrigation had been repaid because this investment is typically repaid after the federal investments in power assets have been repaid. If Western and the related assets are to be sold, the issues of how to repay the federal investment in irrigation and how to accommodate the use of water for irrigation would need to be addressed.

The ramifications of the PMAs' and the Bureau's and the Corps' contractual obligations and liabilities, which are numerous and complex, would also need to be recognized. For instance, the Bureau's Great Plains Region in Billings, Montana, has over 2,200 contracts and agreements, including 580 right-of-use permits concerning such things as buffers, crops, drainage, and weed control. Although the transferability of these obligations would need to be considered, according to agency officials, the PMAs' and the operating agencies' contracts and agreements typically do not address whether contractual obligations would be assigned to a nonfederal buyer and what, if anything, would happen to related federal liabilities.

Importantly, the PMAS also have contractual obligations to sell power to their preference customers.

Concerns about the impacts of water projects on the environment, especially the habitat of endangered and threatened species, are increasingly constraining the ability of the operating agencies to generate hydropower, especially during hours of peak demand. Since the late 1980s, these restrictions have decreased generating capacity, resulting in forgone power revenues of millions of dollars to the PMAS as well as costs of equal magnitude to replace the lost generating capacity and to buy replacement power. For example, according to Bureau officials, to protect the migrations of Chinook salmon, the Bureau has restricted the use of five hydropower units at the Shasta powerplant in the Central Valley Project in California. According to these officials, since 1987 these restrictions have resulted in additional costs of about \$50 million to purchase power to meet Western's contractual obligations. According to officials from the Bureau, the Federal Energy Regulatory Commission (FERC), the PMAS, environmental groups, and trade associations, the effects of environmental constraints on power production will likely continue in the future and could affect the price the government would obtain if it sold some hydropower assets. A divestiture proposal would need to address the postdivestiture responsibilities of the buyer and the government in accommodating environmental concerns.

Various issues related to Native Americans' rights would have to be addressed prior to a divestiture because their rights to water could affect a divestiture. According to Bureau officials, Native Americans' rights to water at some federal water projects are the earliest, thus superseding the use of water for other purposes, including hydropower generation. As an example, they cited a legal settlement with tribal entities of the Fort Peck Reservation, Montana, that includes the right to about 1 million acre-feet of water from the Missouri River.⁴ Also, under federal legislation, excess federal land in Oklahoma is subject to transfer to the Secretary of the Interior in trust for Native American tribal entities in Oklahoma. In addition, under the Native American Graves Protection and Repatriation Act, certain Native American artifacts found on federal lands must be returned to the relevant Native American tribal entity. Corps officials responsible for managing federal projects from which Southwestern markets power explained that they have been involved in numerous cases in the past several years involving this law.

⁴One acre-foot is the amount of water that it would take to cover one acre of land with water to a depth of one foot.

Before a divestiture, the future regulatory treatment of federal hydropower assets would also need to be specified—especially, whether or not the future regulatory treatment would require a license from FERC, which oversees nonfederal hydropower plants. FERC’s licensing process, which requires input from many affected parties, can take up to 15 years to complete. If the new owners of a hydropower facility were allowed to operate the facility without a FERC license, they would have a competitive advantage over other hydropower operators who are subject to FERC’s licensing requirements. The type of regulatory mechanism that would apply would largely depend on whether the federal government maintained or transferred control of the water storage. If only a PMA’s assets were sold (including the right to market power and its transmission lines) and not the powerplants, the dams, and the reservoirs, the overall management of the affected project would change little, except that the Bureau and the Corps would have to deal with a new power marketer whose incentives would be different from the PMA’s. However, if all of the assets were sold, then FERC’s licensing process could reassess and revise the management and uses of the water, thereby affecting the project’s electricity-generating capacity.

Assessing how the divestiture of a PMA and/or related federal hydropower assets would affect the rates paid by its preference customers and their retail customers is difficult because it depends on numerous factors. Rate changes for retail customers would depend on how much preference customers use the PMA’s power, the difference between regional wholesale market rates and the PMA’s rates, the availability of alternate sources of power, and the extent to which the PMA’s preference customers would pass any rate increases on to their retail customers. In general, the higher the percentage of its total power supply that a preference customer buys from a PMA and the greater the difference between that PMA’s rates and regional wholesale rates, the greater the potential increase in wholesale rates after a divestiture. Retail rates might not increase as much as wholesale rates after a divestiture because the preference customers might be able to absorb any wholesale rate increases by improvements in operational efficiency to the extent possible. The economic impact of a divestiture on the affected geographic region would be influenced by how much electric rates would increase, by the economic characteristics of the region, and by how much water allocations would be changed. Finally, the ongoing and widespread deregulation and restructuring of the electric utility industry contributes to the difficulty in assessing the effects of a divestiture on the power rates and the economy of an affected region.

Figure 1 summarizes the key issues affecting a divestiture of federal hydropower assets—the general decisions needed in divesting federal assets as well as the specific issues related to hydropower.

Figure 1: Key Issues to Be Addressed in a Divestiture of Federal Hydropower Assets

General issues to be addressed in divesting federal assets

- Establishing the objectives underlying the decision to divest
- Identifying the specific assets to be sold
- Specifying the conditions and liabilities that would be transferred with the assets, including any restrictions on their use
- Determining the trade-offs between these conditions and liabilities and the ultimate value received by the government
- Deciding the sales mechanism (e.g., competitive bidding or negotiation), the sales processes (e.g., trade sales or stock offerings), and who should manage the sale

Specific hydropower-related issues that would also need to be addressed

- Balancing the multiple purposes of the water project and specifying the future role of the Bureau and Corps
- Determining how to repay or otherwise address the federal capital investment in irrigation facilities of the affected projects
- Assigning the contractual obligations and liabilities of the PMA and the operating agencies
- Determining the current or future environmental responsibilities to be retained or transferred
- Protecting Native Americans' rights to water, interests under the Native American Graves Protection and Repatriation Act, and other issues
- Deciding the future regulatory treatment of divested hydropower assets
- Analyzing the impact of the divestiture on the region's power rates and economy

Recommendations

This report contains no recommendations.

Agency Comments

GAO provided a draft of this report to DOE (including the PMAS' liaison office), the Department of the Interior (including the Bureau), FERC, and the Department of Defense (including the Corps). DOE, Interior, and FERC provided GAO with their written comments. GAO met with officials of the Department of Defense, including the Corps' Director of Hydropower Operations and the Director of Operations, Construction, and Readiness. The comments of DOE, Interior, and FERC and GAO's responses to those

comments are included in appendixes VI, VII, and VIII, respectively. DOE believes that the report achieves a fair balance in discussing some issues but added that other issues deserved greater discussion. For example, in DOE's view, the position of the opponents of divesting federal hydropower assets should have been expanded in the report and the report should have discussed the beneficiaries and those who would be harmed by a divestiture. GAO believes that the report is balanced and reflects the positions of both sides of the divestiture debate. GAO contacted organizations that favored and opposed the divestiture of federal hydropower assets and included statements from both sides. Also, a discussion of the specific benefits and costs of a divestiture was outside the scope of this review. Therefore, GAO did not revise the report as suggested by DOE. Interior stated that the report recognizes some of the issues that would have to be addressed in the event of a divestiture, but it suggested other issues that, in its view, need to be discussed or clarified. For instance, Interior said the report should clarify that the Bureau and the Corps generate hydropower while the PMAS market and transmit it. GAO agreed and revised the report to reflect these distinctions. In its comments, FERC stated that the report provided an "excellent overview of the matters that would need to be addressed" in divesting the federal hydropower assets. FERC also provided several clarifications that were incorporated into the report. For example, FERC clarified that its limited flexibility in licensing hydropower projects, as described in the report, stems from the authority of other federal and state agencies to attach mandatory conditions to the FERC license. Defense stated that the report provided a good assessment of the issues related to the "very complex and controversial" subject and also provided clarifying comments that were incorporated into the report as appropriate.

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Abbreviations

CVP	Central Valley Project
DOE	Department of Energy
EIA	Energy Information Administration
EIS	environmental impact statement
ELCON	Electricity Consumers Resource Council
FERC	Federal Energy Regulatory Commission
IBWC	International Boundary and Water Commission
kWh	kilowatt-hour
kW	kilowatt
M&I	municipal and industrial
MOU	memorandum of understanding
IOU	investor-owned utility
MW	megawatt
MWh	megawatt-hour
NERC	North American Electric Reliability Council
O&M	operations and maintenance
PG&E	Pacific Gas and Electric Company
POG	publicly owned generating utility
PRWUA	Provo River Water Users' Association
PMA	power marketing administration
SEPA	Southeastern Power Administration
SERC	Southeastern Electric Reliability Council
SPP	Southwestern Power Pool
SWPA	Southwestern Power Administration
USEC	United States Enrichment Corporation
WAPA	Western Area Power Administration
WSCC	Western States Coordinating Council

Introduction

The federal government owns and operates numerous multipurpose water projects, many of which generate electric power. This power, which is generated subject to the needs of the project, is sold through five federal power marketing administrations (PMA)—the Southeastern Power Administration (Southeastern), the Southwestern Power Administration (Southwestern), and the Western Area Power Administration (Western) as well as the Alaska Power Administration and the Bonneville Power Administration. The PMAs are separate and distinct organizational entities within the Department of Energy (DOE). They are required to market hydropower primarily on a wholesale basis at the lowest possible rates consistent with sound business principles. By law, the PMAs give preference in the sale of federal power to public bodies and cooperatives (called “preference customers”), such as federal agencies, irrigation districts, municipalities, public utility districts, and other public agencies. Each PMA has its own specific geographic boundaries, federal water projects, statutory responsibilities, operation and maintenance responsibilities, and statutory history.¹ In 1995, the three PMAs in our study—Southeastern, Southwestern, and Western—sold about 1.6 percent of the nation’s electricity.

PMAs Market Power Generated at Multipurpose Federal Water Projects

A federal water project consists of several resources, such as the dam, the reservoir, the land around the dam and reservoir, and, where hydropower is generated, the powerplant. In addition to providing hydropower, the dams at which hydropower plants are located serve a variety of other purposes, such as promoting fish and wildlife conservation and habitat enhancement and providing flood control, irrigation, navigation, recreation, water supply, and improved water quality. Each project must be operated in a way that balances its multiple purposes. In most instances, because generating power is not the project’s sole purpose, the amount of hydropower generated and marketed is affected by the availability and use of water for the project’s other purposes.²

The PMAs generally do not own, operate, or control the facilities that actually generate the electric power; almost always, they own, operate,

¹Federal Electric Power: Operating and Financial Status of DOE’s Power Marketing Administrations (GAO/RCED-96-9FS, Oct. 13, 1995).

²Section 9(c) of the Reclamation Project Act of 1939 prohibits the Secretary of the Interior from entering into any contract regarding the electric power generated by a reclamation project that, in the judgment of the Secretary, would impair the efficiency of the project for irrigation purposes. This section has been construed to limit sales of project electricity if they would impair the project’s ability to deliver water for irrigation. Also, section 5 of the Flood Control Act of 1944 provides for the sale of power generated at the Department of the Army’s Corps of Engineers’ (Corps) reservoir projects that is “in the opinion of the Secretary of the Army not required in the operation of such project.”

and control the facilities that transmit power, and they market the power that is generated at the federal water projects.³ The power-generating facilities are controlled by other federal agencies—most often by the Department of the Interior’s Bureau of Reclamation (Bureau) or the Department of the Army’s Corps of Engineers (Corps)—referred to as “operating agencies.” Appendix II lists and describes various laws that guide the Bureau’s and the Corps’ management of federal water projects and hydropower plants.

The federal power marketing program, which began in the early 1900s, has developed incrementally over the years. In 1937, the Bonneville Project Act created the Bonneville Power Administration to market federal power in the Pacific Northwest. In 1943, a decision by the Secretary of the Interior established Southwestern under the President’s war powers. The Congress provided the authority to create permanent PMAs with the passage of the Flood Control Act of 1944. The Secretary of the Interior established Southeastern in 1950 and the Alaska Power Administration in 1967. The last PMA, Western, was authorized under the DOE Organization Act of 1977 when the four existing PMAs were transferred from the Department of the Interior to DOE.⁴

Many hydropower plants provide electric power for the multiple needs of a federal water project, and the project’s operations have first priority for using it. The PMAs sell the hydropower that exceeds the project’s operational requirements on a wholesale basis to their preference customers and use the revenue earned to repay the costs to generate, transmit, and market power.⁵ Revenues from the sale of hydropower are also used to pay for a portion of the irrigation costs assigned for repayment through these revenues where the project serves irrigation. The sale of federal hydropower has also served social and economic development goals. This power is required to be sold at rates that are as low as practicable, consistent with sound business principles, to encourage its widespread use. The PMAs helped make electricity available for the first time to many consumers who lived in rural areas.

³The Alaska Power Administration owns two federal water projects that provide power and serve no other purpose.

⁴The DOE Organization Act transferred power marketing responsibilities and transmission assets that had been previously managed by the Bureau of Reclamation to Western.

⁵In some cases, PMAs are not required to recover some costs (for instance, certain environmental costs and the full costs of pensions and postretirement health benefits of PMA employees) because of specific legal provisions or because the DOE implementing order excludes the costs or is not specific about them. See *Power Marketing Administrations: Cost Recovery, Financing, and Comparison to Nonfederal Utilities* (GAO/AIMD-96-145, Sept. 19, 1996).

Nonfederal hydropower projects also generate electricity subject to their multiple purposes. The Federal Energy Regulatory Commission (FERC) licenses and regulates these projects and their hydropower plants that affect the nation's navigable waterways.⁶ FERC's operating licenses for these hydropower plants are in effect for up to 50 years, after which relicensing must occur. Under provisions of such legislation as the Federal Power Act, as amended by the Electric Consumers Protection Act, FERC's licensing and regulatory activities establish the conditions under which the project must operate, consistent with legal and policy developments. In licensing and relicensing nonfederal hydropower projects, FERC is required to give equal weight to both "developmental factors" (such as power, irrigation, and flood control) and "nondevelopmental factors" (such as protecting fish and wildlife habitat, conserving energy, and providing recreation).

FERC's regulatory activities with respect to electricity from the PMAs are limited to the authority delegated to it by the Secretary of Energy. FERC's review of the PMAs' rates is limited to (1) whether the rates are the lowest possible consistent with sound business principles; and (2) whether the revenues generated by the rates are enough to recover, within the period allowed, the costs of producing and transmitting electricity, including the repayment of the capital investment allocated to generate power and the costs assigned by acts of the Congress for repayment. FERC's review also includes the assumptions and the projections used in developing the rates. Other than reviewing the PMAs' rates, FERC has no jurisdiction over the operation of federal hydropower facilities.

Appropriations Finance Federal Water Projects and PMAs

Each year the Congress appropriates money to the PMAs, the Bureau, and the Corps. The PMAs' appropriations are generally to cover operations and maintenance (O&M) expenses associated with their power marketing activities and capital investments in their transmission assets. The Bureau's and the Corps' appropriations are for all aspects of the federal water projects, including capital investments as well as operation and maintenance (O&M) expenses related to generating power and to providing other functions, such as irrigation and navigation.

Federal law calls for the PMAs to set power rates at levels that will repay their appropriations and the power-related O&M as well as the capital appropriations expended by the operating agencies generating the power.

⁶See *Electricity Regulation: Issues Concerning the Hydroelectric Project Licensing Process* (GAO/RCED-91-120, May 10, 1991) and *Electricity Regulation: Electric Consumers Protection Act's Effects on Licensing Hydroelectric Dams* (GAO/RCED-92-246, Sept. 18, 1992).

DOE's implementing order specifies that appropriations used for O&M expenses must be recovered in the same year the expenses were incurred; however, it allows the appropriations used for capital investments to be recovered, with interest, over periods that can last up to 50 years. The order also allows the PMAs to defer payments on O&M expenses if the PMAs do not generate sufficient revenue in a particular year because of the variability of hydropower. Because O&M expenses that are deferred are amortized with interest, the amount of deferred expenses accrues interest until it is fully repaid and may require the PMA to increase its rates.

The federal investment in water projects has nonreimbursable and reimbursable components. The nonreimbursable component refers to costs that are not reimbursable by revenues collected from the projects' beneficiaries. The reimbursable component refers to costs that are recovered from the project's ratepayers and other beneficiaries, such as power and irrigation users. This component includes the construction costs as well as the O&M expenses for power generation, transmission, and marketing; the construction costs allocated to irrigation and O&M expenses for irrigation, if applicable; and the construction costs allocated to municipal and industrial water supply as well as the related O&M expenses. The reimbursable component is further divided into investments repaid with interest (for example, for power and municipal and industrial water supply) and investments repaid without interest (for irrigation only).

Proposals Have Been Made to Divest the Federal Government of Its Hydropower Assets

In 1986, the executive branch first attempted to sell a PMA when the President's budget proposed selling the Alaska Power Administration to its preference customers. Despite the enactment of laws in 1995 and 1996 to authorize this transaction, the sale of the hydropower assets from which the Alaska Power Administration markets its power has not been completed, in part because of the need to resolve issues related to rights-of-way and easements. The length of time taken to complete the sale of the smallest of the five PMAs raises questions about the complexity and number of issues that will need to be addressed before the government can divest itself of the larger PMAs and their related hydropower assets.

Numerous bills have been introduced to the Congress to sell the remaining PMAs, and some bills have included the sale of the related hydropower assets of the Bureau and the Corps. These bills have proposed selling only the PMA and its assets; the PMA and the related hydropower assets of the Bureau and the Corps; or all of these assets plus the related dams and reservoirs. For example, in 1996 legislation introduced in the House of

Representatives proposed to divest, among other things, the PMAS and the associated power-generating assets through a competitive bidding process. The bill proposed that FERC be directed to grant a 10-year operating license to the buyers of the federal hydropower plants. It also exempted the divestiture from certain federal laws pertaining to the disposal of surplus federal property and to environmental protection, such as the Federal Land Policy and Management Act of 1976, the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the Wild and Scenic Rivers Act of 1968.

Objectives, Scope, and Methodology

In response to divestiture proposals, on January 18, 1996, 39 Members of Congress requested that we examine the issues related to the divestiture of the PMAS and related federal hydropower assets. On March 1, 1996, we received a separate request letter from another Member of Congress. We agreed to report on the issues related to divesting the federal hydropower assets, including the PMAS; however, we did not evaluate whether or not the PMAS and federal hydropower assets should be divested. We agreed to provide information on (1) Southeastern, Southwestern, and Western, including their similarities and differences, and their interactions with the agencies that operate federal water projects (mostly, the Bureau and the Corps); (2) the main objectives and general decisions involved in divesting federal assets, along with how these objectives and decisions apply to the PMAS; and (3) the specific issues related to hydropower that should be addressed before a divestiture of the PMAS. As requested, we limited our study to Southeastern, Southwestern, and Western. We did not include the Bonneville Power Administration because it has a unique financial situation or Alaska because it is being divested.⁷

A detailed description of our objectives, scope, and methodology is contained in appendix I. We conducted our review from May 1996 through February 1997 in accordance with generally accepted government auditing standards.

We provided a draft of this report to DOE (including the PMAS' liaison office), the Department of the Interior (including the Bureau), FERC, and the Department of Defense (including the Corps). DOE, Interior, and FERC provided us with their written comments. These comments and our responses are included in appendixes VI, VII, and VIII, respectively. We

⁷Bonneville Power Administration: Borrowing Practices and Financial Condition (GAO/AIMD-94-67BR, Apr. 19, 1994).

met with officials of the Department of Defense, including the Corps' Director of Hydropower Operations and the Director of Operations, Construction, and Readiness. Defense stated that our report provided a good assessment of the issues related to the "very complex and controversial" subject. Defense also provided clarifying comments that we incorporated into our report as appropriate. For example, Defense stated that the report needed to be revised to acknowledge that the Corps has improved the generating availability of its hydropower plants in its South Atlantic Division (Atlanta, Georgia) to over 90 percent for fiscal year 1996.

Profile of the PMAs

While differing in size, scope, and assets, Southeastern, Southwestern, and Western all are responsible for selling hydropower primarily to preference customers—publicly owned utilities and state and federal agencies. These customers vary in size and in the quantity of electricity they purchase. The PMAs have a close working relationship with the Corps and the Bureau because, with a few exceptions, the Bureau and the Corps are responsible for operating the hydropower plants and for ensuring that electricity is generated subject to the other multiple purposes of each federal water project. This relationship is based in part on written documents and also on flexible arrangements that recognize the variability associated with water.

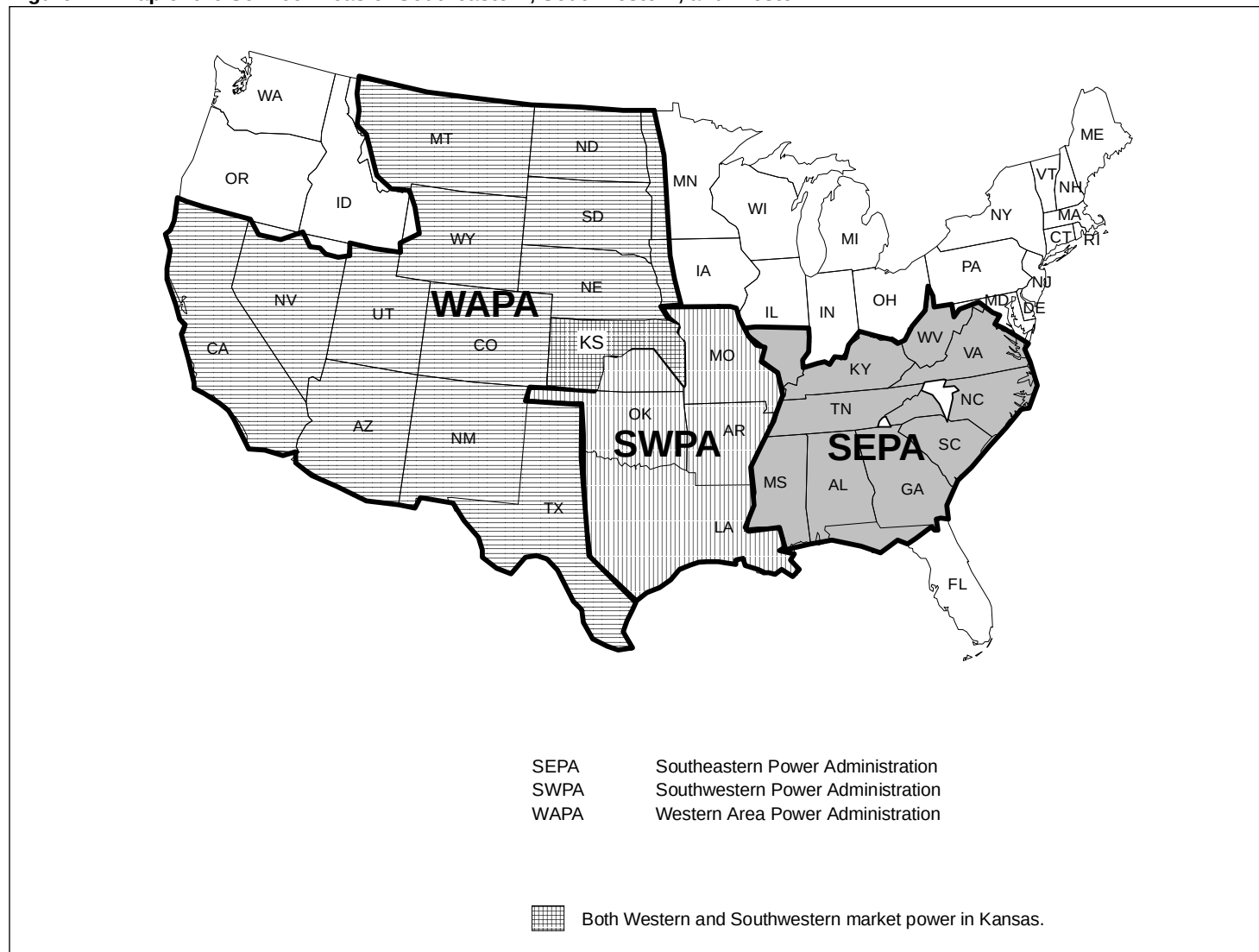
PMAs Differ in Service Areas, Customers, and Assets

The PMAs generally market power to publicly owned utilities and to state and federal agencies located within their service areas. The three PMAs in our study market power in 30 states from 103 hydropower plants and a coal-fired power plant.¹ Figure 2.1 shows the service areas for each PMA and appendix III lists the hydropower projects from which the PMAs market power. As described below, the PMAs differ in several ways, including the sizes of their service areas, the number of customers served, and the types of assets owned.²

¹Southwestern and Western both sell power in Kansas and Texas.

²Unless otherwise noted, we used fiscal year 1994 data as reported by the PMAs in their annual reports. We also used calendar year 1994 data on total sales and revenues for PMA customers from the Energy Information Administration (EIA). The EIA's data were the most recent at the time of our review.

Figure 2.1: Map of the Service Areas of Southeastern, Southwestern, and Western



Source: Developed by GAO from data provided by the PMAs.

In fiscal year 1994, Western marketed power to 637 customers in Arizona, California, Colorado, Nebraska, New Mexico, North Dakota, South Dakota, Utah, and parts of Iowa, Kansas, Minnesota, Montana, Nevada,

Texas, and Wyoming.³ Western's power is largely generated from 56 hydropower plants.⁴ They have an existing capacity of 9,808 megawatts (MW) operated mostly by the Bureau.⁵ Western owns 16,727 miles of transmission line. In fiscal year 1994, its revenues from power sales were about \$658 million, based on about 36.1 billion kilowatt-hours (kWh) of energy sold. Although about 60 percent of Western's sales are to municipalities, cooperatives, and public utility districts, about 6 percent of its sales are to irrigation districts (see table 2.1). Most of the remaining power sales are to state and federal agencies and investor-owned utilities (IOU).

Southwestern, serving Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and part of Texas, marketed power to 62 customers in fiscal year 1994.⁶ Southwestern's power is generated from 24 hydropower plants operated by the Corps with an existing capacity of 2,051 MW. Southwestern's revenues from power sales in fiscal year 1994 were about \$98 million, based on sales of about 6.6 billion kWh. Over 95 percent of Southwestern's sales are to municipal utilities and cooperatives (see table 2.1). Southwestern also owns 1,380 miles of transmission lines.

Southeastern, serving Alabama, Georgia, Kentucky, Mississippi, South Carolina, Tennessee, Virginia, and West Virginia, as well as parts of Florida, Illinois, and North Carolina, sold power to 294 customers in fiscal year 1994. Southeastern's power is generated from 23 hydropower plants operated by the Corps with an existing capacity of 3,092 MW. Southeastern's revenues from power sales in fiscal year 1994 were about \$156 million, based on sales of about 7.9 billion kWh. Southeastern sold 57 percent of its power to municipalities and cooperatives. The remainder went to federal agencies and public utility districts (see table 2.1). Because Southeastern owns no transmission lines, it relies upon other utilities for transmission services.

³The number of customers does not include sales to the Bureau of Reclamation or interdepartmental sales.

⁴Western currently markets power from 47 hydropower projects operated by the Bureau, 6 operated by the Corps, 2 operated by the International Boundary and Water Commission, and 1 operated by the Provo River Water User's Association but co-owned by Western. Western lists the Bureau's Lewiston hydropower plant as part of the Trinity plant. Western also markets power from a coal-fired plant operated by the Salt River Project.

⁵A watt is the basic unit used to measure electric power. A kilowatt (kW) is 1 thousand watts. A kilowatt hour (kWh) is equal to 1 kilowatt of power applied for 1 hour. One thousand kW are one megawatt (MW), and 1,000 kWh are one megawatt-hour (MWh).

⁶The 62 customers do not include the utilities that buy power from the Kansas Municipal Energy Agency and the Louisiana Electric Power Authority.

Table 2.1: Electricity Purchased From Each PMA by Customer Type, Fiscal Year 1994

Customer Types	Southeastern ^a	Southwestern	Western	Average
Municipal utilities	17.2%	26.5%	26.6%	25.2%
Cooperatives	39.7%	70.7%	21.7%	30.8%
Public utility districts	0.4%	0.0%	11.5%	8.3%
Investor-owned utilities	0.0%	0.0%	7.3%	5.2%
Federal agencies	42.8% ^b	2.8%	5.9%	11.1%
State agencies	0.0%	0.0% ^c	17.4%	12.5%
Irrigation districts	0.0%	0.0%	6.1%	4.4%
Other	0.0%	0.0%	3.6%	2.6%
Total ^d	100.0%	100.0%	100.0%	100.0%
MWh (thousands)	7,541.6	6,579.6	36,067.2	50,188.4

^aBecause Southeastern's fiscal year 1994 annual report does not identify customers by class, our sales total includes only those customers that we could classify using EIA's Form 861 database. As a result, our total is about 5 percent smaller than the sales total for all customers that Southeastern presents in its annual report.

^bMost of the power that Southeastern sold to federal agencies was sold to the Tennessee Valley Authority which, in turn, sold the power to its distributors—110 municipal utilities and 50 cooperatives.

^cIn actuality, 0.02 percent of Southwestern's power was sold to state agencies. The amount was omitted from the table because of rounding.

^dBecause of rounding, the amounts may not total to 100 percent.

Source: Developed by GAO from data provided by the PMAs.

Preference Customers of PMAs Vary Greatly

While the preference customers of PMAs are publicly owned utilities and state and federal agencies that generally purchase small amounts of electricity, they vary greatly.

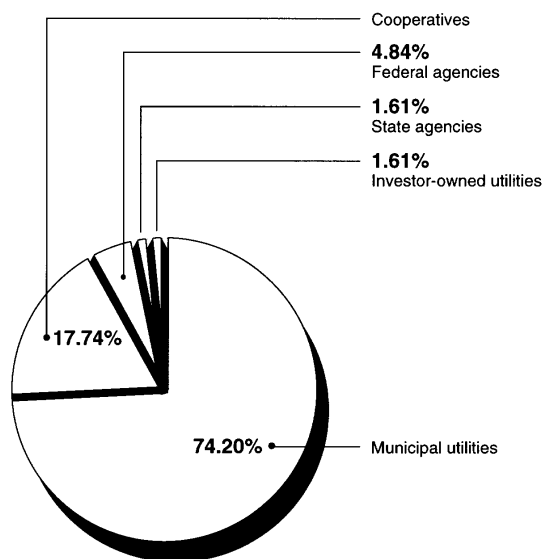
The Types and Size of Customers Vary

The types of customers served by Southeastern, Southwestern, and Western vary both in terms of type and size. They include municipalities and cooperatives; public utility districts; irrigation districts; federal agencies, including military and laboratory installations; and state agencies. Some customers are utilities that are among the largest in the nation, while others are among the smallest. Some customers generate much of the electricity they transmit to their customers, while others only transmit electricity they buy from other sources.

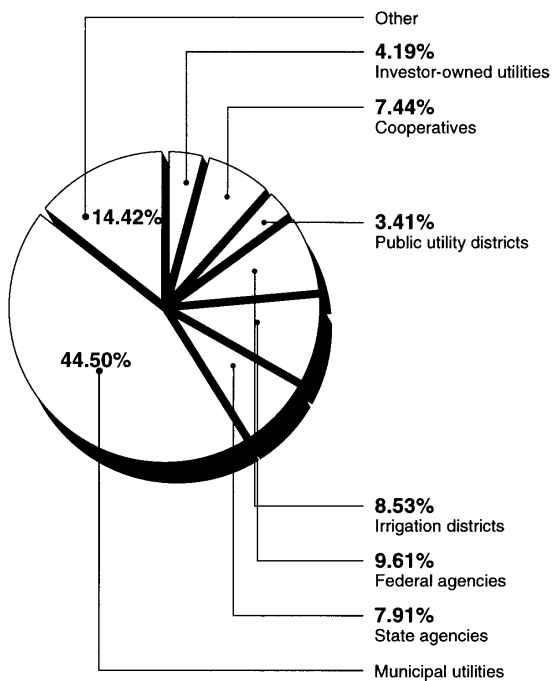
For all three PMAs, municipalities and cooperatives are by far the most prevalent customers, accounting together for about two-thirds of all customers. Public utility districts and irrigation districts together account for about 8 percent of customers, while federal agencies, including military and laboratory facilities, account for about 7 percent. State agencies account for about 5 percent of all customers and IOUs account for about 3 percent. Figure 2.2 depicts the composition of customers for each PMA.

Figure 2.2: Composition of the PMAs' Customers

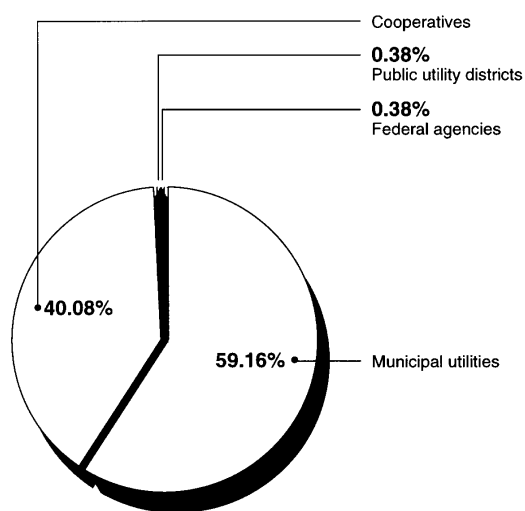
Southwestern



Western



Southeastern



Source: GAO's analysis of data provided by EIA and the PMAs' 1994 annual reports.

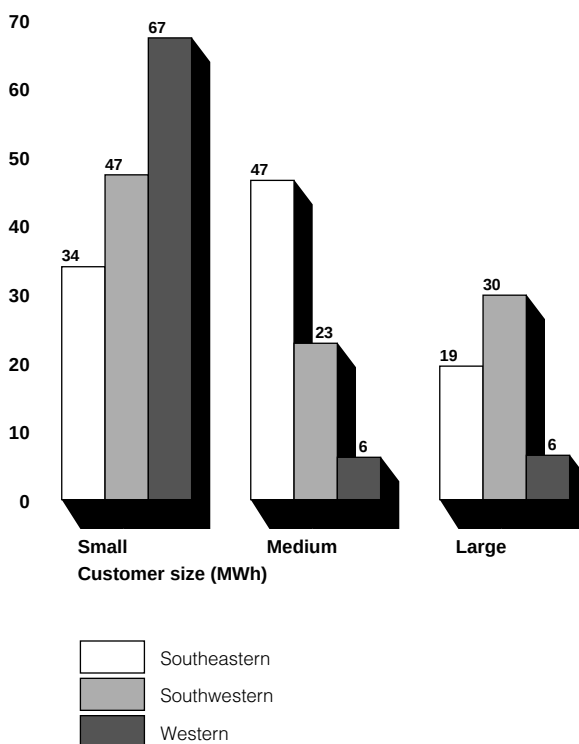
The Size of Preference Customers Also Varies

The PMAs' preference customers also vary in size.⁷ As shown in fig. 2.3, about two-thirds (67 percent) of Western's preference customers are small utilities. About 6 percent of Western's preference customers are in the medium category and another 6 percent are large. About half (47 percent) of Southwestern's preference customers are small utilities. However, almost one-third (30 percent) of Southwestern's preference customers are large. In contrast, almost half (47 percent) of Southeastern's preference customers are medium-sized utilities.

⁷We measured size by the number of MWh each preference customer delivered to its end-users from all sources in fiscal year 1994. We categorized size as follows: "small" = 0 to 100,000 MWh; "medium" = more than 100,000 to 500,000 MWh; "large" = more than 500,000 MWh. We discussed these categories with the National Rural Electric Cooperative Association and American Public Power Association.

Figure 2.3: Sizes of the PMAs' Preference Customers, Fiscal Year 1994

Percentage of each PMA's customers



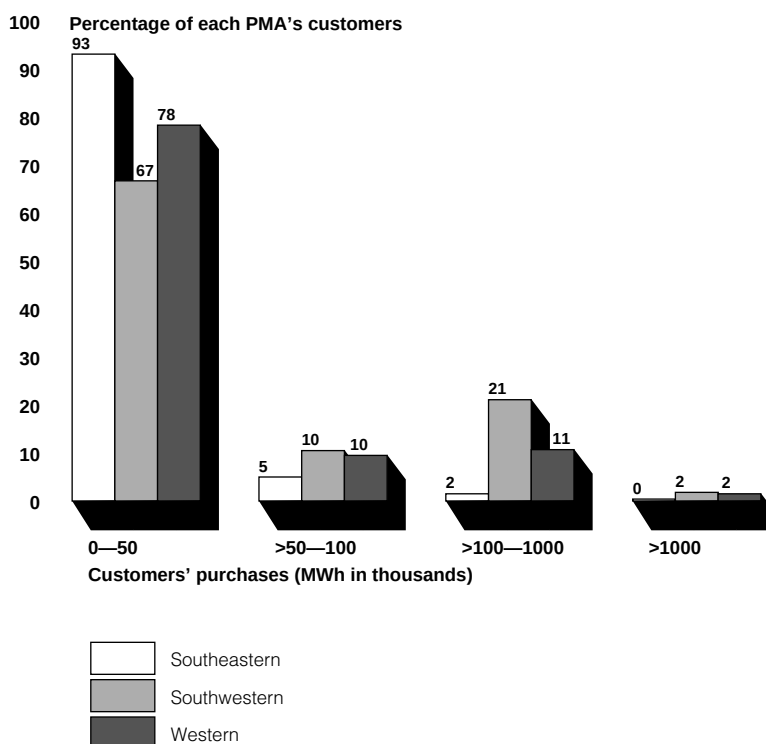
Note: Totals may not add to 100 percent due to rounding.

Source: Developed by GAO from data provided by EIA and the PMAs' 1994 annual reports.

Most Customers Purchase Small Amounts of Electricity Annually

The preference customers of the three PMAs also vary in terms of the quantity of electricity purchased. As shown in figure 2.4, although a few customers purchase large quantities of electricity from PMAs, most purchase smaller quantities. For example, in fiscal year 1994, about 83 percent of the preference customers purchased 50,000 MWh or less from the PMAs and over 90 percent purchased less than 100,000 MWh. The PMAs also sell to a few larger customers (about 1 percent of their customers each buy over 1,000,000 MWh).

Figure 2.4: Sizes of Customers' Purchases From Each PMA, Fiscal Year 1994



Source: Developed by GAO from data provided by EIA and the PMAs' 1994 annual reports.

Most Preference Customers Obtain the Majority of Their Electricity From Sources Other Than PMAs

Most preference customers obtain the majority of their electricity from sources other than the PMAs. As shown in figure 2.5, about 75 percent of the PMAs' preference customers purchase less than half of their total electricity from the PMAs.⁸ In addition, over 60 percent of the preference customers receive no more than 25 percent of their electricity from the PMAs. Because the PMAs have a limited quantity of power for sale that must be allocated among many preference customers, these customers must obtain most of their electricity from other sources.

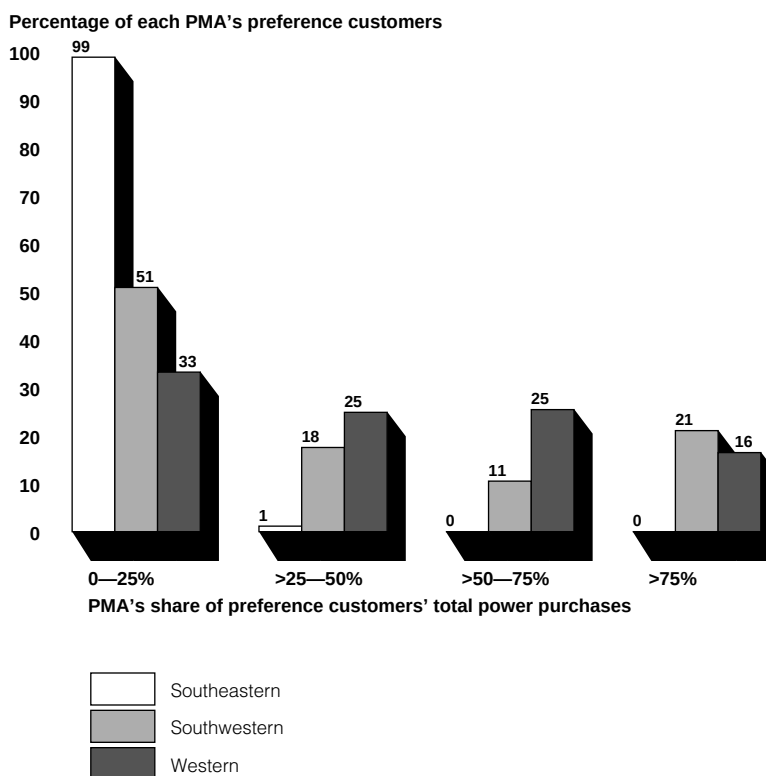
However, the PMAs differ in how much they provide as a percentage of their customers' total needs for electricity. About 99 percent of Southeastern's preference customers purchase no more than 25 percent of their electricity from the PMA. In contrast, Western supplies more than half

⁸These figures do not include preference customers who do not report to EIA their purchases of electricity from other sources.

of the electricity to over 40 percent of its preference customers. Southwestern, on the other hand, supplies no more than 25 percent of the electricity used by most of its preference customers. Yet, it also supplies over 20 percent of its preference customers with at least 75 percent of their electricity.

PMA officials and representatives of preference customers maintain that the total portion of electricity the PMAs supply to them does not accurately portray the PMAs' importance because the PMAs primarily provide power to them during periods of peak demand when electricity from other sources is in relatively short supply. Therefore, measuring the customers' reliance on the PMAs in terms of their purchases of electric energy (measured in kWh) does not accurately capture the situation of some preference customers, particularly those of Southeastern and Southwestern, that rely more on the PMAs to meet their peak demands for electricity. These customers may use electricity from the PMAs more for meeting peak demands than for providing normal baseload electricity. In response, representatives of IOUs contend that most preference customers could purchase this electricity from other sources.

Figure 2.5: Power Purchases From PMAs by Public Power Customers as a Percentage of Their Total Power Obtained From All Sources, Fiscal Year 1994



Note: Totals may not add to 100 percent due to rounding.

Source: GAO's analysis of data provided by EIA and the PMAs.

PMAs Sell Power at a Lower Wholesale Cost Than Other Utilities

In fiscal year 1994, the PMAs sold power at a wholesale rate that was about one-half of the wholesale rates offered by other utilities. For example, the combined average revenue earned per kWh sold by the three PMAs in our study was about 1.8 cents compared with a national rate of about 3.5 cents for IOUs and about 3.9 cents for publicly owned generating utilities (POG).⁹

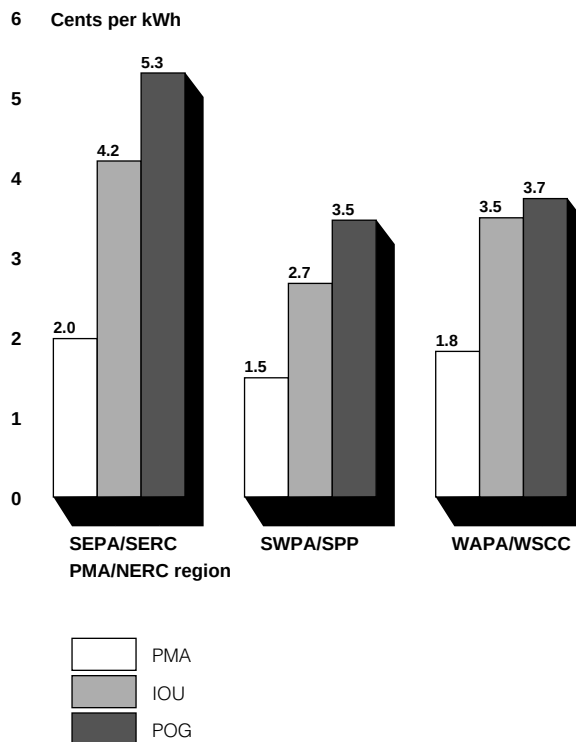
⁹EIA cautions that the average revenue per kWh sold should not be used as a substitute for the price of power. The price that any one utility charges another for wholesale energy reflects numerous transaction-specific factors, including the fee charged for reserving a portion of capacity, the fee for the energy actually delivered, and the fee for the use of the hydropower-generating facilities. These fees are influenced by such factors as time of delivery, quantity of energy, and the reliability of supply. Also, all three PMAs use power repayment studies to set their rates. Southeastern sets a rate for each of its four different systems, Southwestern generally sets a rate for its entire service area but also sets a separate rate for two separate generating facilities, and Western sets a rate for each of its "projects."

In fiscal year 1994, Southeastern's average revenue of about 2.0 cents per kWh compared with wholesale rates of about 4.2 cents per kWh for IOUs and about 5.3 cents for POGs in the region in which Southeastern serves power.¹⁰ In fiscal year 1994, Southwestern received average revenues of about 1.5 cents per kWh. In comparison, IOUs' average revenues per kWh ranged from about 2.6 to 4.5 cents per kWh, while POGs' average revenues per kWh ranged from 3.5 to 4.1 cents per kWh in the region in which Southwestern sells power. In fiscal year 1994, Western received average revenues of about 1.8 cents per kWh for its electricity. In contrast, IOUs received average revenues ranging from about 2.7 to 3.5 cents per kWh and POGs' average revenue ranged from about 3.3 to 4.1 cents per kWh in the region in which Western sells power.

According to a PMA official, because of the low rates PMAs offer, the PMAs have informal waiting lists of prospective preference customers that want to buy their power. Although Western is implementing a program to set aside some existing capacity to serve new customers, becoming a new PMA customer is difficult because few customers are willing to give up their power allocations from a PMA and almost no new federal hydropower plants will be coming on line in the foreseeable future.

¹⁰We used the reliability council regions defined by the North American Electric Reliability Council as the basis for revenue comparisons.

Figure 2.6: Average Revenue Earned Per KWh Sold by PMAs, Regional Investor-Owned Utilities, and Publicly Owned Generating Utilities, 1994



^aSEPA/SERC - Southeastern/Southeastern Electric Reliability Council; SWPA/SPP -Southwestern/Southwest Power Pool; WAPA/WSCC - Western/Western Systems Coordinating Council; NERC - North American Electric Reliability Council.

^bAverage revenues per kWh sold can fluctuate throughout the year, depending on the availability of water—for instance from 1.2 to 2.8 cents per kWh for Southwestern.

Source: GAO's analysis of data provided by EIA, the PMAs' 1994 annual reports, and the American Public Power Association.

Many factors contribute to the PMAs' ability to sell electricity at generally lower rates than other neighboring utilities. Importantly, their electricity is primarily generated from hydropower plants, making their power generally less expensive than other sources of power because it has no fuel cost. In addition, because most of these hydropower plants were built when construction costs were lower than more recent construction, the PMAs have lower imbedded costs to recover through their rates. Also, as we discussed in our 1996 report, their rates do not fully recover all of the costs associated with production of power. In some cases, the PMAs are not

required to recover some costs (for example, certain environmental costs and the full costs of federal pensions and postretirement health benefits) because of specific legal provisions or because the DOE implementing order excludes the costs or is not specific about them.¹¹ Also, unlike IOUs, the PMAs do not pay federal income taxes nor do they set their rates to earn a profit. In addition, while the PMAs in our study do not have to build new capacity to meet future demand, IOUs have an obligation to serve all existing and future customers in their service areas. Therefore, they must build new generating capacity and recover the associated capital costs through their rates. This requirement could result in higher rates for IOUs, depending on the cost to increase this capacity.

PMAs Work Closely With the Bureau and the Corps

The PMAs have a close working relationship with the Bureau and the Corps, which operate and control the hydropower plants and ensure that hydropower is generated subject to the other multiple purposes of federal water projects. These relationships are based on written documents and on flexible arrangements. The PMAs market power subject to the parameters of these written agreements and flexible arrangements. The flexible arrangements allow the operating agencies to balance a project's multiple purposes, even if this reduces power production. For example, releasing water in the late summer to improve oxygen levels downstream to benefit fisheries reduces the capacity to generate electricity.

The Bureau and the Corps Manage the Operation of Federal Water Projects

In allocating water among a project's multiple purposes, the Bureau and the Corps arbitrate among the competing purposes for water. The Bureau operates primarily in the West and manages water in federal water projects mostly for irrigation. The Corps manages water mostly for flood control and navigation. The Bureau and the Corps also provide water for fish and wildlife habitat enhancement, municipal and industrial supplies, recreation, and water quality improvement.

How much electricity the PMAs can sell is subject to the Bureau's and the Corps' control of the water. How the Bureau and the Corps control the water, in turn, is affected not only by the multiple purposes of a project but by the interests of outside stakeholders. For instance, under provisions of the Clean Water Act, state agencies issue water quality certificates that affect how federal dams are operated and the amount and timing of water that can be released from a reservoir. Moreover, compacts

¹¹Power Marketing Administrations: Cost Recovery, Financing, and Comparison to Nonfederal Utilities (GAO/AIMD-96-145, Sept. 19, 1996).

to apportion water among states affect the availability of water for various purposes. The Bureau and the Corps must also frequently consider state environmental laws when managing water resources. For instance, in operating the Central Valley Project (CVP) in California, the Bureau follows a decision by the California State Water Resources Board that directs the CVP and the state water project to meet the state's standards for fish habitat and water quality, such as the salinity standards for the San Francisco Bay area. To accomplish these standards, the Bureau and the management of the state water project operate under an agreement that describes how water supplies should be shared and who would be responsible for environmental issues. For example, under one aspect of this agreement, the Bureau would be responsible for about 75 percent of the fish and wildlife habitat and water quality responsibilities in some cases.

Operating Agencies and the PMAs Interact When Planning Management of a River System

The Bureau or the Corps and the PMAs interact when planning the management of a river system, so that releases of water, which are frequently accomplished through the generating turbines of a hydropower plant, can be timed to maximize the use of water for the sale of hydropower. Western and Bureau officials in Salt Lake City, Utah; Sacramento, California; and Billings, Montana; for example, explained that the Bureau prepares annual operating plans that are updated monthly. In January of each year, the Bureau completes the first surveys of mountain snow. By entering the resulting data into its model, the Bureau makes preliminary predictions about run-offs and annual hydrological conditions. Western, water users, environmentalists, and other stakeholders then meet to review the 12-month operating plan. The Bureau updates the plan monthly as new hydrologic information becomes available. For each month in a rolling 12-month period, the annual operating plan contains the following information by reservoir, dam, and hydropower plant: water inflows, water levels, projected water releases, projected water deliveries, and estimated power generation by each hydropower plant according to the maintenance schedule and planned outages. Based on information about hydrology, reservoir levels, and the demand for water, the Bureau issues daily water orders that fine tune water releases and water movements to accommodate the project's multiple purposes. The staff of the Bureau's control center and Western's power dispatchers coordinate water releases so water is released through the turbines to maximize the value of the power generated within the parameters defined by the other multiple purposes of the project.

The Objectives of a Federal Divestiture Will Shape General Decisions About a Sale

The general process governments use to divest their assets is composed of many decisions. In reviewing domestic and international divestiture experiences, we found a successful divestiture begins with a definition of the sale's objectives, which typically include (1) reducing or eliminating the government's presence in an activity that some view as best left to the private sector and (2) improving the government's fiscal situation.¹ Both of these objectives have been advanced by those who favor the federal government's divestiture of its hydropower assets. However, those who oppose divesting these assets argue that there are advantages stemming from the government's current hydropower activities and question whether divesting the federal hydropower assets, including the PMAs, would actually improve the government's fiscal position.

Once a decision has been made to divest certain federal assets, the underlying objectives will shape the sales process. In particular, they will shape the general decisions about which specific assets are sold, what conditions and liabilities will transfer with those assets, and how to implement the sale.

Reducing or Eliminating the Government's Presence in the Private Sector and Lowering the Deficit Are Common Objectives for Selling Government Assets

A successful divestiture of government assets generally starts with defining the objectives of a sale. Divestiture proposals have been motivated by two broad objectives, typically in conjunction with one another: (1) to reduce or eliminate the government's presence in an industry that is viewed as best left to the private sector and (2) to improve the government's fiscal position.

One Typical Objective Is Reducing or Eliminating the Federal Presence in a Largely Private Sector Activity

International experience with divestitures suggests that one common objective for divesting government assets was a belief that certain functions being provided by the government would be more efficiently undertaken by the private sector. Some proponents believe this premise is true in the context of federal hydropower assets, because they believe the

¹We reviewed experiences with divestiture in five countries—Canada, France, Mexico, New Zealand, and the United Kingdom. Each of these governments reported that it viewed increasing economic efficiency as a major objective of their divestiture programs. Budget Issues: Privatization/Divestiture Practices in Other Nations (GAO/AIMD-96-23, Dec. 15, 1995).

federal government should not be involved in generating, transmitting, and marketing electricity in wholesale markets. They maintain the following:

- The historical justification for the federal presence in the electricity industry—to provide electricity at the lowest practicable cost to regions that were too remote or sparsely populated to be served by investor-owned utilities (IOUs)—is outmoded. The entire nation has become electrified; new technologies, such as the gas-fired turbine, generate electricity at relatively low capital costs; and nonutility generators, such as independent power producers, now generate and sell power in wholesale electricity markets that have become increasingly competitive. In addition, the 1992 Energy Policy Act required that a utility make its transmission lines accessible to other utilities (called “open transmission access”), thus enabling customers to obtain electricity from a variety of competing utilities.² As the market has become increasingly open, spot and futures markets in bulk power have grown and power marketers and brokers now offer services so wholesale customers can buy the cheapest power available.³
- The tax advantages and other subsidies the PMAs receive give them unfair advantages over their competitors. As we recently reported, federal hydropower is cheaper than wholesale power sold by IOUs and publicly owned generating utilities, in part because hydropower has no fuel cost, but also because the PMAs have received low-interest financing and have flexible repayment terms.⁴
- If federal hydropower assets are sold, the private sector would operate these assets more efficiently. Proponents believe that the federal agencies do not adequately operate, maintain, and repair these assets. As we recently testified, the government’s capital planning and budgeting systems do not enable federal agencies to fulfill these responsibilities adequately.⁵ Furthermore, according to proponents, the private sector

²This act authorized FERC to order utilities (including PMAs) to provide wholesale transmission services, upon application, to any electric utility, federal power marketing agency, or any person generating electric energy. In 1996, FERC issued Order 888, requiring all public utilities to file open access transmission tariffs so that eligible customers are not required to seek transmission services on a case-by-case basis. Since the PMAs are not public utilities as defined under section 201(e) of the Federal Power Act, they are not required to file open access transmission tariffs. However, as transmitting utilities, they still may be required to provide transmission services to any applicant on a case-by-case basis.

³Spot markets involve transactions for the immediate delivery of a commodity. Futures markets determine current prices for the delivery of a product at some specified future date.

⁴Power Marketing Administrations: Cost Recovery, Financing, and Comparison to Nonfederal Utilities (GAO/AIMD-96-145, Sept. 19, 1996).

⁵Federal Power: Outages Reduce the Reliability of Hydroelectric Power Plants in the Southeast (GAO/T-RCED-96-180, July 25, 1996).

would make better decisions about maintenance and investment because the decisions would be based on market signals rather than the federal government's appropriations and budget cycles.⁶ In responding to a draft of our report, Corps officials pointed out that, in some instances, the Corps' efforts to better operate, maintain, and repair its hydropower plants have paid off, and they cited that the Corps' South Atlantic Division (Atlanta, Georgia) has improved the generating availability of its hydropower plants to over 90 percent for fiscal year 1996.⁷ PMA officials added that not all federal hydropower assets in all regions of the nation exhibit these problems.

Another Objective in
Divesting Federal Assets Is
Improving the
Government's Fiscal
Situation

International experience also suggests that asset divestitures have been typically motivated by a desire to reduce the government's debt or deficit. This can include reducing the size or activities of the government. Some policymakers propose selling the federal hydropower assets to improve the federal government's fiscal position: They believe the cost of the federal hydropower program exceeds its value to the government because, among other reasons, the rates the PMAs charge do not recover all of the costs associated with generating, transmitting, and marketing electricity. If the government would sell these assets, the lump-sum payments would reduce the federal government's current borrowing requirements. The government would also save money on the annual appropriations that would no longer be needed for the three PMAs and the operating agencies for operating, maintaining, and repairing those assets. While the U.S. Treasury would no longer receive annual revenues from the sale of federal hydropower, proponents of divestiture believe that the sales proceeds the federal government would receive from the divestiture and the reduced government expenditures would more than offset the forgone revenues from electricity sales.⁸ Some proponents also contend that a divestiture would eliminate any subsidies to PMA ratepayers.

⁶It is important to note that many opponents of divestiture, including some preference customers, concur that the Bureau and the Corps do not adequately operate, maintain, and repair the federal hydropower assets. Some of these customers now support up-front financing of capital repairs for these assets, greater involvement by customers in planning and financing capital repairs, and contracting out these responsibilities to the private sector or to the preference customers themselves while the federal government retains ownership of the assets.

⁷In fiscal year 1995, the availability of these hydropower plants was 87 percent.

⁸Bureau officials note that certain hydropower revenues accrue to and are expended from revolving funds, such as the one associated with the Colorado River Storage Project.

However, assessing the full financial impact on the government from a sale of hydropower assets requires that other indirect costs to the government also be considered. Furthermore, assessing the full financial impact requires examining a variety of revenue and expenditure components, expressing these in present value terms that reflect their timing as well as magnitude, and addressing underlying uncertainties through sensitivity analyses.⁹ For instance, the government would incur transactions costs—associated with preparing for and carrying out a divestiture—if it sells the assets. These costs could be significant, particularly in the case of a large-scale public stock offering.¹⁰ Additionally, a variety of labor costs, such as providing severance packages to terminated employees of the PMAs and/or operating agencies, and other costs associated with the disposition of their pension and postretirement benefits would need to be accounted for.¹¹ Furthermore, a divestiture could create more regulatory responsibilities, and the costs of meeting those increased responsibilities would have to be considered a cost of the divestiture if those costs would not have been incurred otherwise and would be borne by the government.¹²

Proponents contend that some of these additional costs may be offset by the additional tax revenues the federal government would receive from sales of electricity if the PMAs and related hydropower assets were sold to IOUs or independent power producers. The Edison Electric Institute (the trade association of IOUs and a strong advocate of divesting federal hydropower assets) maintains that, if the three PMAs in our study were sold to private utilities, the present value of potential federal income taxes on purchasers and bond buyers could equal about \$1 billion.¹³ However, these taxes may reduce how much a potential purchaser would offer for the PMAs by an amount approximately equal to the tax liabilities. Thus,

⁹Examines how the result of a calculation is affected by changes in the variables used.

¹⁰For example, as reported in the press, selling the United States Enrichment Corporation could yield sales proceeds estimated between \$1.5 billion and \$2 billion, but it could have transactions costs of \$60 million to \$100 million.

¹¹Federal agencies do not pay the full cost of these benefits currently and, depending on the terms of a divestiture, the government could continue to bear the residual costs. We reported that the cumulative unrecovered Civil Service Retirement System pension and costs for postretirement health benefit for the three PMAs totaled an estimated \$436 million as of September 30, 1995. Power Marketing Administrations: Cost Recovery, Financing, and Comparison to Nonfederal Utilities (GAO/AIMD-96-145, Sept. 19, 1996).

¹²If FERC is the selected regulatory authority, then the additional costs of licensing and regulating divested hydropower assets would be recovered through FERC's fees, subject to congressional action.

¹³Although PMAs make some payments in lieu of taxes, officials from the Edison Electric Institute stated that IOUs pay an average of 8 cents on every dollar earned in federal taxes, while the PMAs, being federal entities, are tax-exempt.

counting the expected additional tax revenues without considering the offsetting effect on the expected sales price would overstate the financial benefits of the sale.

Finally, it is important to note that the budgetary treatment of a sale of federal assets does not reflect the full, long-term financial impact of the sale on the Treasury. For example, current budget rules use a 5-year budget window for scoring government revenues and expenditures.¹⁴ Many observers believe that this period is not long enough to evaluate an asset sale in which lump-sum sales proceeds are compared to changes in expenditure and revenue streams that may continue for up to 50 years. In addition, without legislative change, the sales proceeds from a divestiture could not be used to finance new spending or offset revenue losses. Furthermore, the congressional committees that have jurisdiction over the entities being sold could not count the sales proceeds toward the deficit reduction goals specified under the Budget Enforcement Act of 1990, as amended. This means the committees could not use the proceeds to offset additional expenditures within their budget allocation. However, because the sales proceeds would flow directly to the Treasury, the proceeds would reduce the government's overall borrowing requirements.

Many Question the Need to Divest Federal Hydropower Assets

Those who favor the government's current role in providing hydropower maintain that the debate about divesting hydropower assets should also consider many other effects. They point to long-standing federal policies to use federal water projects to help develop local and regional economies and the importance of the revenue the government receives from the sale of hydropower. For example, as an "aid to irrigation," power revenue is counted on to repay about 70 percent of the federal government's (nominal) capital investment in irrigation facilities at federal water projects in the West. Parties that favor continued government ownership argue that the sale of federal hydropower promotes competition. They also assert that private-sector generation and marketing of hydropower formerly provided by the PMAs would lead to greater monopoly power in the electricity industry and higher rates to consumers, especially those in remote rural, low-income areas. In addition, the opponents of the sale believe that the PMAs' electric rates are not subsidized and that, if the federal government sold its hydropower assets, the taxpayer would lose a steady stream of revenues that over time would exceed their selling price.

¹⁴Scoring is the process of estimating the budgetary effects of legislation and comparing them to limits set in the budget resolution or legislation.

The Divestiture of Federal Assets Requires Several General Decisions

Once a decision has been made to divest, then additional decisions would be needed to answer several broad questions. For instance, what specific assets would be divested? What associated conditions and liabilities would be transferred? And, what methods would be used to value and sell the assets? The final sales proceeds would depend on just what decisions would be made.

The Specific Assets to Be Sold Would Need to Be Identified

As we found in our review of divestitures in other nations, an important, initial decision in a divestiture involves determining which assets to sell. In this regard, federal hydropower assets could be grouped in several different ways. First, a PMA itself could be sold, including any transmission assets and/or the right to sell the hydropower generated at the Bureau's or the Corps' hydropower plants. In a second alternative, a PMA, including its transmission assets and its right to sell power, as well as the Bureau's or the Corps' powerplants could be divested. In a third, more complicated alternative, a PMA and all of the aforementioned items as well as the remaining assets related to the water projects (e.g., the dams and the reservoirs) could be divested.

An alternative to selling an entire PMA and any related hydropower assets could be to package the assets of a specific project for sale. For instance, Bureau officials in Sacramento, California, opined that the Central Valley Project could be sold to the state of California because the project is contained fully in that state and complements the existing water project that is managed by the state. Another option could be to sell all the federal hydropower plants on a river system together to preserve operating efficiencies because the releases of water from upstream facilities to downstream ones could be more easily coordinated under one-party ownership—an important consideration for flood control and other water management purposes.

Trade-Offs Between Liabilities to Be Transferred or Restrictions on Divestiture and the Bids Received Would Need to Be Considered

Along with defining the specific assets to be divested, policymakers would have to consider the explicit and implicit liabilities borne by the government and which of those liabilities to transfer to a buyer. As a policy matter, the government may want to retain certain liabilities associated with the assets being divested or place specific restrictions on their postdivestiture use of these assets. However, policymakers would need to consider that assets that are sold with many or relatively onerous restrictions (from the viewpoint of a prospective purchaser) or assets that are in poor condition are correspondingly less attractive and would likely

result in lower sales proceeds than otherwise. While the government may still choose to place restrictions or to assign or retain certain liabilities, the financial consequences in terms of the sale price should be assessed.

Many combinations of assets and liabilities could be grouped for sale. Both defining and valuing the specific liabilities that the federal government could retain are important because the government may be in a better position to bear certain risks. In general, the government could receive larger sales proceeds by retaining certain liabilities because a purchaser could substantially discount its bid if the purchaser would assume the financial risks associated with those liabilities. For instance, in the proposed divestiture of the United States Enrichment Corporation (USEC), the government would retain liability for the environmental cleanup associated with the prior production of enriched uranium. According to a contractor's report, decontamination and decommissioning activities at uranium enrichment plants could cost as much as \$17.4 billion in 1994 constant dollars. The PMAs are liable for environmental cleanup associated with use of polychlorinated biphenyls and other hazardous waste. While no precise estimates have been made, these liabilities could total many millions of dollars.

Assets that are in better operating condition are more likely to receive larger bids than assets in poor condition. We testified recently that federal hydropower plants in the Southeast have experienced significant outages and that these outages occur because of the age of the plants and the way they have been operated. If these hydropower assets were to be sold without reducing the current backlog of necessary maintenance, bids would be lowered. However, a 1995 World Bank review of international experience with divestitures found that in preparing a government enterprise for divestiture, a government should generally refrain from making new investments to expand or improve that enterprise because any increase in sales proceeds is not likely to exceed the value of those investments.

Imposing restrictions on operating the assets could also reduce the value to potential buyers. For instance, significant restrictions on using water to generate hydropower at the Glen Canyon Dam have been implemented to protect a variety of natural and cultural resources that are located downstream. According to the Bureau, these restrictions reduced the dam's generating capacity by an amount exceeding 400 MW, even though total energy production over the course of a day or a season will be largely

unchanged.¹⁵ It is almost certain that a new owner of the Glen Canyon Dam would continue to bear the responsibility to operate the dam's hydropower plants according to these restrictions. As a practical matter, bids by prospective purchasers of the rights to market hydropower produced at Glen Canyon Dam would presumably reflect the diminished revenue potential. Thus, the government would incur much of the financial cost associated with the current restrictions in the form of reduced proceeds from the sales, just as the government would continue to bear this cost if its continued ownership and operation of the dam were maintained. Moreover, uncertainty about the extent of such restrictions likewise increases the uncertainty of expected future revenues and would likely reduce proceeds from the sale.

In previous deliberations over divesting federal hydropower assets, including the PMAs, policymakers debated the desirability of ensuring regional control of divested federal hydropower assets. While a decision to limit bidders on particular assets to certain geographic areas would foster a goal of local or regional control of those assets, it could reduce the proceeds from the sale if other potentially interested buyers were precluded from making offers. For example, in the divestiture of the Alaska Power Administration—the only PMA to be offered for sale—an overriding concern was to protect the PMA's ratepayers from possible increases in electricity rates. This concern led decisionmakers to restrict the eligibility of bidders to only ones from within the state. It also led decisionmakers to accept a sales price approximating the present value of future principal and interest payments that the Treasury would have received instead of establishing the price by selling the assets in an open, more competitive fashion to the highest bidder.

The Specific Sales Mechanism and Process Need to Be Determined

The objectives underlying a divestiture help determine the most appropriate sales method. For example, if a divestiture were largely motivated by fiscal considerations—with an emphasis on sales proceeds—an appropriate sales mechanism would involve some form of competitive bidding and tend to place few restrictions on the number or identity of bidders.¹⁶ Alternatively, if the major motivation were a desire to

¹⁵Essentially, the restrictions reduce the amount of electricity that can be produced during peak periods, when it is more valuable, and increase the amount of electricity produced during off-peak periods.

¹⁶In general, because bids would likely increase with more bidders, restrictions on the number of bidders would likely lead to smaller sales proceeds. In many divestitures, governments have considered whether to exclude foreign bidders, the trade-off being between sales proceeds and the development of domestic institutions. Some restrictions would likely be warranted, such as those that would preclude frivolous bids.

transfer operations to the private sector—with an emphasis on a smooth transfer—the government could choose to negotiate a sales price with a selected buyer.

In general, we have supported the principle that the federal government should seek the full market value in selling its assets. Sales methods that allow for competitive bidding are more likely to generate this result and lead to the transfer of assets to those buyers who value them most highly. A World Bank survey of international experiences with divestiture indicates that open bidding among competitors is preferable to sales that rely on negotiations with selected bidders because the former method offers less opportunity for favored buyers to receive special treatment at the taxpayers' expense.

In practice, the size of the assets to be sold, in terms of value and scale of enterprise, has influenced the type of sales process used. Trade sales and public stock offerings are general processes, with trade sales used more often to sell smaller enterprises or assets, and public offerings used to sell larger ones. Also, within each type, sales can be organized using competitive bidding methods or negotiations. A brief description of these processes follows:

- “Trade sales” draw on the idea that an existing set of businesses competing in the relevant line of business (or trade) are likely to offer more and higher bids for the assets.¹⁷ Three key attributes of the PMAS and the electricity industry may lend themselves to a trade sale: (1) The PMAS and related hydropower assets are part of an established industry with capital market connections experienced in the valuation, grouping, and sale of electricity-generating assets. (2) Sales of significant electricity-generating assets are not unusual. (3) There would likely be several bidders for at least large portions of the PMAS and their related assets, depending on how those assets are grouped for sale. A trade sale can be a negotiated sales process between the government and a buyer or can be accomplished using an auction to determine both the sales price of the asset or assets as well as the buyer or buyers.
- Stock offerings have been used domestically, most recently in the sale of Conrail in 1987, as well as internationally to divest large public enterprises. This method of sale would most likely require creating a government corporation or corporations out of the PMAS and their associated assets. Some of these assets could be grouped for sale, and some could be

¹⁷As a practical matter, no reason exists to restrict bidders to the relevant trade, even though the term suggests that many potential purchasers would be drawn from the “trade” or related industries.

excluded from the sale, depending on the policy trade-offs discussed. In the case of some federal water projects, for example, the government could decide to retain control of the dam and reservoir to satisfy increasingly significant restrictions on the use of water because of concerns about the environment or endangered species. The stock of the government corporation would be subsequently sold through standard financial market methods, such as a private placement through negotiations between particular investors and the government or through a sale to the general public by using competitive bidding.

In cases where auction methods might be selected to sell government assets, recent government experience indicates the importance of carefully choosing the specific format for an auction. That is, a policy decision to choose a competitive auction format requires making many subsequent decisions to define the specific rules leading to an appropriate operational auction. For example, the Federal Communications Commission has chosen to auction the leases of electromagnetic spectrum licenses for use in mobile communications. While generating a large amount of revenue was a less important goal than achieving an efficient geographic allocation of spectrum licenses to communications firms, the auctions generated more revenue than had been predicted by some potential bidders, according to auction analysts. In large part, the success of these auctions was due to careful consideration of the auction format and the identification of particular problematic features of auctions of similar assets in other countries.¹⁸

Most domestic and international divestitures have relied on private capital market firms as consultants and managers because of their frequent experience with complicated and high-valued transactions governing the transfer of assets in the private sector. Particularly in the case of public offerings but also for trade sales, the government would likely incur substantial costs to prepare its assets for sale or to pay for services performed by its financial advisers. For example, in the sale of Conrail, the government employed a variety of financial advisers and, in a key role, a prominent law firm with expertise in a variety of fields, including tax and employment law.

¹⁸For instance, although New Zealand in 1990 and Australia in 1993 sold portions of the electromagnetic spectrum using auction formats that were fairly well understood in many contexts, these formats presented problems in the more complicated framework characterizing the allocation of spectrum licenses. For a discussion of spectrum auction issues, see R. Preston McAfee and John McMillan, "Analyzing the Airwaves Auction," *Journal of Economic Perspectives*, Winter 1996, pp. 159-175.

Within the government, a variety of possible divestiture management options exist to guide the divestiture process and implement the decisions that must be made. In the Conrail divestiture, the Department of Transportation was primarily responsible for managing the sale. In the ongoing Alaska Power Administration sale, DOE is the lead agency. In our review of the USEC divestiture, we recommended that the Secretary of the Treasury lead the privatization process because that official will not be affected by the privatization and the Secretary's mission is clearly defined in terms of protecting taxpayers' general interests.

Many Specific Issues Related to Federal Hydropower Would Need to Be Addressed Before a Sale

Besides the general decisions that arise from any complex divestiture, many specific issues related to federal hydropower would need to be addressed before a divestiture of federal hydropower assets could be completed. These issues include the multiple purposes of federal water projects; the existing contractual obligations and liabilities of the PMAS, the Bureau, and the Corps; the future responsibility for environmental liabilities and protecting endangered species, which already constrain the operations of many projects; the rights and concerns of Native Americans; and the future regulatory treatment of the hydropower assets. The potential effects on wholesale and retail electric rates, including potential regional economic effects, would also need to be considered. Although determining how wholesale rates would be affected by a divestiture is difficult, the impacts would be influenced by the extent to which customers buy a large portion of their power from the PMAS and the prevailing wholesale rates in the regional market. The impact on retail rates and any regional economic impacts would depend on the extent to which a PMA's customers would absorb any cost increases or pass them on to their retail customers.

A divestiture of hydropower assets would require time and resources. However, complex issues have arisen and been successfully addressed in transfers of assets in the private sector. For example, for nonfederal facilities, balancing the multiple purposes of the water projects has been historically managed through FERC's licensing process. In addition, when FERC decreased its regulation of the natural gas industry and the industry restructured itself, thousands of new contracts were negotiated and rewritten.

The Impact of a Divestiture on Balancing Water Projects' Multiple Purposes Would Need to Be Addressed

The purposes and the management of federal water projects are guided by many statutes, including federal water management and reclamation statutes generally applicable to all projects, specific authorizing and appropriations statutes for individual projects, and environmental protection statutes. Many federal projects serve multiple purposes, such as fish and wildlife habitat protection, flood control, hydropower generation, irrigation, municipal and industrial water uses, navigation, recreation, and water quality improvements. Unless the legislation that authorized a divestiture exempted the water projects from these laws, the statutory provisions would continue to affect how the new owners would manage the projects and how much electricity the new owners could generate. See appendix II for a description of relevant federal statutes.

As described in chapter 2, under current arrangements the Bureau and the Corps manage the allocation of water in federal water projects to balance their multiple purposes. The uses of the water are sometimes complementary and sometimes competitive with one other. For example, water is stored in and is released from the reservoir to provide for recreation, but its release through the turbines could be scheduled to generate electricity in a way that is intended to maximize revenues. In contrast, Western's office in Billings, Montana,¹ forecasts decreases in power revenues in the long-term because water, which would otherwise be used to generate electricity, will increasingly be used for irrigation and other purposes.² In its fiscal year 1995 repayment study, Western predicted that revenues from the sale of hydropower could decrease from about \$253 million in 2001 to about \$213 million (in constant 1995 dollars) in fiscal year 2080 for the Pick-Sloan Program.

Under authorizing legislation, such as the Flood Control Act of 1944 and the various reclamation acts, the Bureau and the Corps enjoy some latitude in managing water for various purposes. These agencies' role in arbitrating between multiple uses becomes especially visible during times of drought.³ For example, according to Western officials, during the drought of the late 1980s and early 1990s, water was increasingly assigned to irrigation. As a result, power generation suffered significantly in Western's service area. The role of the Bureau and the Corps has also become increasingly important as population and economic growth have intensified the competition over how water is used. For example, competition for water is now emerging even in areas with abundant rainfall, such as the Southeast. For several years, Alabama, Florida, and Georgia have been contesting the uses of water on two river basins in the Southeast (the Alabama-Coosa-Tallapoosa and the Apalachicola-Chattahoochee-Flint) that are managed by the Corps. Georgia, which contains the headwaters of the waterways in question, needs increased water supplies to provide for the growing population of the Atlanta area, as well as for farming and industry. Florida is concerned about the effects of water levels on its barging industries. It is also

¹The eastern and western divisions of Western's Pick-Sloan program market power from the Bureau's and the Corps' hydropower projects (3,102 MW) on the upper-Missouri River and its tributaries.

²According to Bureau officials, the vast majority of planned irrigation projects in the Pick-Sloan Program will likely not be completed because they are infeasible and not cost-effective. See Federal Power: Recovery of Federal Investment in Hydropower Facilities in the Pick-Sloan Program (GAO/T-RCED-96-142, May 2, 1996).

³According to Interior, interstate water compacts, such as the Colorado River Compact, and international water delivery requirements are also important factors related to the management of water that would affect potential divestitures.

concerned about upstream pollution because water from the Chattahoochee and other rivers flows into Apalachicola Bay—a rich source of shellfish and shrimp. Alabama is also concerned about the cumulative impacts of potential water resource actions. In the 1980s, the Corps, responding to requests from several Georgia communities for additional water withdrawals from reservoirs, planned to reallocate water away from generating hydropower to increase the water supply. In June 1990, Alabama sued the Corps, challenging the adequacy of documentation about the environmental impacts of those reallocations and the Corps' procedures for operating its reservoirs. However, in January 1992, after Alabama put aside the lawsuit, the governors of the three states signed an agreement with the Corps to work together through a study to resolve their issues. This study is projected to be completed in December 1997.

**Postdivestiture Role of the
Bureau and the Corps
Would Depend on the
Assets Divested**

The ability of the Bureau and the Corps to continue to balance the purposes of a water project after a divestiture would depend largely on the types of assets that were being sold. If only the PMA and its transmission assets were divested, then the Bureau and the Corps would continue to control how water is allocated, used, and released, because they would continue to own and operate the dams, the powerplants, and the reservoirs. According to Bureau, Corps, and PMA officials, the impact of such a divestiture on the operation of a water project and its multiple purposes would be manageable because the buyer would have to dispatch and market power subject to the Bureau's and the Corps' continued presence and decisions about water releases. However, the Bureau and the Corps would have to deal with a nonfederal entity with different incentives than the former PMA, which was a fellow government agency that understood the need to operate so as to meet multiple public purposes.

If the PMA, its transmission assets, and the Bureau's and the Corps' hydropower plants were sold, then the Bureau and the Corps would retain ownership of the dams and the reservoirs and would continue to plan and manage the water. However, because water is released through both the spillways (which would continue under the Bureau's or the Corps' control) and the powerplant (which would be controlled by the nonfederal buyer), a nonfederal entity would have some measure of operational control over how and when water would be released. Bureau, Corps, and PMA officials explained that the operating agencies would have to be more vigilant than they have been when dealing with the buyer of the PMA and the powerplants.

If the PMA, its transmission assets, the powerplants, the dams, and the reservoirs were sold, the Bureau and the Corps would no longer be responsible for managing how water is used and balancing the projects' multiple purposes. As discussed later in this chapter, in this case a regulatory agency, such as FERC, would have to consider the projects' purposes when licensing and regulating postdivestiture hydropower production and other activities at a divested project.⁴ FERC officials noted that nonfederal water projects licensed by the commission also have multiple purposes that must be accommodated.

Irrigation Is a Unique Public Purpose That Would Significantly Affect Some Divestitures

The irrigation function at federal water projects presents issues for divestitures that differ from the other project purposes.⁵ Specifically, as of September 30, 1995, power revenues were scheduled to pay for about \$1.5 billion to recoup the federal capital investment for completed federal irrigation facilities.⁶ This amount is to be repaid for periods of up to 60 years for individual irrigation projects.⁷ Under current repayment practices, this debt is to be repaid without interest, and repayment of the debt can be deferred until the end of the repayment period.⁸ Moreover, according to the Bureau's officials, because capital expenditures on irrigation facilities are expected to continue to increase for renovating and replacing existing facilities as well as constructing new ones, the total amount of "irrigation assistance" could also increase over time. However, most planned irrigation projects likely will not be completed because they are infeasible and not cost-effective. If Western, the related federal water projects, or irrigation projects within Western's service area were sold to nonfederal entities, the issue of how this federal investment in irrigation would be repaid would have to be addressed.

⁴According to FERC officials, FERC would likely license and regulate any divestiture that involves the sale or transfer of the powerplant.

⁵Among the three PMAs in our study, only Western transmits and markets power from federal water projects that provide for irrigation. Bonneville, too, has such projects.

⁶According to Bureau officials, revenues from the sale of federal hydropower are scheduled to repay about 70 percent of the total federal capital investment in completed irrigation projects. For the Colorado River Storage Project, the Bureau and Western estimate the amount to be about 95 percent.

⁷Under the principle of "aid to irrigation," the Secretary of the Interior determines the amount of federal capital investment in completed irrigation projects that irrigators can afford to repay. Most of the remainder is assigned to be repaid through revenues from the sale of federally marketed electric power. As of September 30, 1995, only \$32 million of the outstanding irrigation debt had been repaid.

⁸Because of the application of these repayment practices, the present value of the \$1.5 billion may be viewed as very small.

Hydropower is used at some federal projects within Western's service area to power the pumps that move water from the reservoirs and the canals to the fields. In recent years, as much as about 30 percent of all electricity generated by the Bureau's hydropower plants in California's Central Valley Project (CVP) has been used for this "project pumping." Moreover, at some federal irrigation projects, the rate that has been charged for "project pumping" electricity has been far below the rate that has been charged for commercial uses. According to Bureau officials, at the Eastern Division of the Pick-Sloan Program, the average rate per kWh sold in fiscal year 1995 was about 1.5 cents per kWh, while the rate for project pumping was only about 0.2 cents per kWh. Any divestiture would need to clarify whether the new owners would be required to provide power for irrigation below the rates paid by other customers. If the dams and the reservoirs were sold, then the government would have to negotiate arrangements to accommodate the use of water for irrigation.

The Government's Contractual Obligations Must Be Recognized

As agencies of the federal government, the PMAs, the Bureau, and the Corps have entered into a wide range of legally binding contracts in conducting the generation, transmission, and marketing of hydropower. Until the specific terms of a divestiture proposal and the accompanying legislation are known, identifying possible complications that could delay or otherwise affect the sale will be difficult. However, even if the legislation establishes the transferability of these contractual obligations, stakeholders might be able to delay or complicate the divestiture process by filing lawsuits. Although we did not review the thousands of contracts and other agreements that could be affected by a divestiture, according to Bureau and PMA officials, some of the government's current contracts do not address the transfer of the government's contractual obligations after a divestiture.

Historical precedence exists in the energy sector for addressing extensive and complex contractual obligations. For example, after FERC ordered the restructuring of the natural gas industry, thousands of new contracts were written. FERC Order 636, which was issued in 1992, required, among other things, that all interstate pipeline companies restructure their tariffs, services, rates, and contracts and separate or "unbundle" their gas transportation and storage arrangements. To conform to this order, gas pipeline companies negotiated about 3,800 new contracts with their customers.

**Selling Power to
Preference Customers Is
an Important Contractual
Obligation**

One of the PMAS' most important contractual obligations is selling power to their "preference customers." The PMAS market hydropower on a wholesale basis at the lowest possible rates, consistent with sound business practices.⁹ The three PMAS in our study have contracts to sell power to over 990 customers at cost-of-service rates ranging from about 1.5 cents to about 2.0 cents per kWh.¹⁰ Although these rates may increase in the future, they are significantly lower than the average national wholesale rates of 3.4 cents per kWh for IOUs and about 4.0 cents for publicly owned generating utilities.

Currently, the PMAS are renewing their power contracts. Western has extended its contracts in the Pick-Sloan Program through 2020 and is proposing 20-year extensions of power contracts at other projects. According to PMA officials, it is unclear whether a buyer of a PMA would have to continue selling power at low rates to preference customers and, if so, for how long. If a PMA were divested, its contractual obligations with its customers could be assigned in whole or in part to the buyer.¹¹

**Various Interconnection
and Transmission
Contracts and Agreements
Tie PMAs Into Regional
Grids**

In addition to power contracts, the PMAS have entered into interconnection, transmission, and right-of-way contracts and agreements that make them a vital part of regional power grids. For example, in addition to power contracts with 83 customers, Western's office in Folsom, California,¹² has numerous contracts and agreements for providing transmission and interconnection services, for buying power from utilities in the Pacific Northwest, for delivering power to irrigation projects via the transmission grid of another utility, and for acquiring rights-of-way and easements along transmission lines. Western has a key contract with the Pacific Gas and Electric Company (PG&E), first signed in 1967, that integrates the operations of the PMA and the company. Under this complex contract, Western provides peaking capability to PG&E in

⁹Rates are set under the Flood Control Act of 1944, the Reclamation Project Act of 1939, and 58 Fed. Reg. 59716.

¹⁰These rates are average PMA-wide rates that do not apply to all projects from which the PMAs market power. For example, although Western's average revenue rate per kWh in fiscal year 1994 was about 1.8 cents per kWh, the composite firm rate for the Central Valley Project (CVP) in California, from which Western markets power, was about 3.0 cents per kWh. Pursuant to Western's rate process in 1995, Western reduced the CVP's composite firm rate to about 2.3 cents per kWh for fiscal year 1996.

¹¹Any divestiture proposal would need to consider the need to amend the various laws requiring preference in the sale of federal power for public bodies and cooperatives.

¹²Western's Folsom office markets power from the Bureau's CVP, which has a generating capacity of about 2,000 MW.

exchange for firm power services;¹³ PG&E also delivers 880 MW to Western's preference customers. Moreover, to bring more power to its system, Western also owns part of the Pacific Northwest-Southwest Intertie and an interest in the California-Oregon Transmission Project, which allows Western to transmit power from the Bonneville Power Administration, Pacific Corp, and other utilities in the Pacific Northwest.

Although Southeastern has no transmission assets, it has 17 contracts with regional utilities (including regional IOUs, state public power agencies, and electric cooperatives) to transmit power that is generated by hydropower plants the Corps operates. These contracts differ in the services provided, cancellation provisions, and customers served. Seven of the utilities, including the Tennessee Valley Authority (TVA), provide both transmission and ancillary services. These contracts are described in appendix IV.

The Bureau and the Corps Also Have Many Contracts and Agreements

Because of the number and complexity of their contracts and agreements, the Bureau and the Corps were unable to provide us with information related to every contract and agreement they have implemented at the offices we visited. However, Bureau and Corps officials provided us with information to illustrate the number and types of contracts and other agreements that would have to be assigned or terminated if a project's dam and/or reservoir were divested. For instance, in Southeastern's service area, the Corps has over 5,100 agreements for such things as easements for roads and utilities; leases for public parks, agriculture, and concessions; and licenses for fish and wildlife management. See appendix IV for a description of these contracts and agreements. Likewise, the Bureau's Great Plains Region in Billings, Montana, has over 2,200 contracts and agreements, which include the Bureau's 580 right-of-use permits for such things as agricultural leases and permits concerning buffers, buildings, crops, drainage, and weed control. See appendix V for a description of these contracts and agreements.

¹³Firm power refers to the power or the capacity that is intended to be available at all times during a period covered by a commitment, even under adverse conditions.

Environmental Issues Would Impact the Government's Ability to Divest Hydropower Assets

According to FERC officials, concerns about environmental impacts have begun to affect the generation of hydropower. The uncertainties about the federal government's future responsibilities in funding and implementing actions to mitigate environmental impacts would greatly affect the divestiture of any hydropower assets. Other types of generating capacity, including coal-fired and nuclear powerplants, have also faced environmental and related constraints that have required costly mitigations.¹⁴

Mitigating Environmental Damages Has Resulted in Forgone Power Revenues

The desire to mitigate any potential negative effects of water projects on the environment, especially on the habitat of endangered and threatened species, is increasingly constraining the ability of the Bureau and the Corps, as well as nonfederal entities, to generate hydropower, especially during hours of peak demand. Because of these restrictions, the PMAs have forgone power revenues of millions of dollars since the late 1980s.

In an example affecting Southeastern, the South Carolina Department of Wildlife and Marine Resources sued the Corps in 1988, alleging violations of the National Environmental Policy Act of 1969 at the Richard B. Russell Dam. The Russell project has eight hydropower units with a combined capacity of 600 MW—four conventional hydropower units (the last of which came into commercial operation in 1986) and four pumpback units (which have never been in commercial operation).¹⁵ The U.S. District Court for the District of South Carolina found that the Corps had violated the National Environmental Policy Act by failing to complete an environmental impact statement (EIS) and issued an injunction against the installation and operation of the pumpback units. However, the Court of Appeals for the Fourth Circuit partially reversed the district court and allowed the Corps to install the pumpback units but not operate them until another EIS had been completed. This supplemental EIS was completed and a settlement agreement was negotiated that allowed environmental

¹⁴Since the 1970s, the generation of electricity by using nuclear fuel or burning coal has been affected by concerns about the associated environmental impacts. In the aftermath of the accident at the nuclear powerplant on Three Mile Island in 1979, the Nuclear Regulatory Commission and state regulators have increased their oversight of nuclear power plants, thereby increasing the financial risk to utilities and billions of additional dollars to comply with their new requirements. In addition, the enactment of legislation, such as the Clean Air Act, has resulted in costly retrofits to coal-fired powerplants or the burning of cleaner coal.

¹⁵The pumpback units are designed to allow water, after it has passed through hydropower generating units, to be pumped back into the reservoir during periods of low demand for electricity. Then, the water can be used to produce power during periods of high demand for electricity. These units pose an environmental concern because the turbines may kill fish while operating in the pumping mode.

testing. According to Southeastern, the PMA has lost power revenues of about \$36.1 million per year since 1994 because of the shutdown.

In another example that affects Western, the obligation to protect endangered species has had a significant impact on the CVP's operations. Bureau officials said that, in response to the Endangered Species Act, the U.S. Fish and Wildlife Service listed the winter run of the Chinook salmon as endangered. According to these officials, to protect the needs of the salmon, the Bureau has restricted the use of the five hydropower units at the CVP's Shasta powerplant. They added that since 1987 these restrictions have resulted in additional costs of about \$50 million to purchase power to meet Western's contractual obligations.

According to officials from the Bureau, FERC, and the PMAs, as well as from environmentalist groups and trade associations, environmental restrictions on water usage to generate power will likely continue in the future. The effects will continue to include lost power revenues or, conversely, increased costs to procure alternative power supplies. For example, waterflow restrictions that are included under the preferred alternative of the final EIS of the Glen Canyon Dam could result in lost generating capacity of 442 MW in the winter and 470 MW in the summer. According to the Bureau, the cost to replace the lost capacity is about \$44.2 million per year. The preferred alternative, also known as the "modified low fluctuating flow" alternative, features river flows that are substantially reduced from historic levels, including flows that vary for purposes of maintaining the habitat.¹⁶ The benefit of these modifications in managing water use include enhanced fish habitat and protection of endangered or listed species.

**Current and Future
Environmental Issues
Would Affect the Ability of
the Government to Divest
Hydropower Assets**

Defining who would be responsible for mitigating the environmental impacts associated with federal water projects after a divestiture is a crucial issue that would have to be addressed when policymakers define the terms and conditions of the transaction. If only the PMA (including the transmission assets) and/or the federal powerplants were divested, then the government's responsibilities would generally remain the same, unless

¹⁶Bureau of Reclamation: An Assessment of the Environmental Impact Statement on the Operations of the Glen Canyon Dam (GAO/RCED-97-12, Oct. 2, 1996).

specified otherwise in the divestiture legislation.¹⁷ If the government were to sell the dams and reservoirs, however, the responsibilities and costs of actions to mitigate environmental impacts would need to be allocated or reassigned.

Moreover, with new and more comprehensive actions to mitigate environmental impacts, the uncertainty surrounding the availability of power would also need to be addressed. These actions frequently entail restrictions on releases of water to generate electricity or potentially significant, but unknown, future costs to mitigate environmental impacts. If the PMA and/or powerplants were divested, then uncertainty about the amount of power available for marketing could lower the price that buyers would be willing to pay or discourage some potential buyers from submitting bids. Likewise, if the dams and the reservoirs were divested, uncertainty about the amount of power that could be generated as well as uncertainty over the costs of future environmental mitigations could likewise lower the bids or discourage some prospective buyers from bidding. In addition, the existence of more competitive electric markets would also affect the attractiveness of purchasing the federal hydropower assets.

Alternatively, if the government assumes some of the future liability for the costs of actions to mitigate environmental impacts, taxpayers may be forced to bear a significant, but currently unknown, future liability. Moreover, according to officials of DOE's PMA liaison office, because environmental laws could require an EIS, testing, and cleanup when federal property is sold, additional costs to sell the federal hydropower assets could be incurred. In addition, PMA and Bureau officials stated that, in some cases, actions to mitigate environmental impacts are ongoing and would have to be considered in a divestiture of certain federal hydropower facilities.¹⁸

¹⁷FERC notes that if the powerplant were divested, but the dam and reservoir remained in the hands of the Bureau or the Corps, it could still be appropriate to impose constraints on the powerplant's operations beyond those already imposed by the Bureau or the Corps. For instance, FERC's operating license could require the powerplant operator to cease its operations during hot periods to maintain the appropriate water temperature and dissolved oxygen levels.

¹⁸For example, according to PMA officials, Western has committed to ongoing environmental mitigations related to transmission lines, communications sites, and other facilities.

The Rights and Concerns of Native Americans Would Affect a Divestiture

Various rights and concerns of Native Americans would have to be addressed in a proposal to divest federal hydropower assets. These issues include (1) their water rights, (2) their claims to surplus federal property, (3) the need to address rights-of-way for PMA transmission lines across their lands, and (4) the government's responsibilities under the Native American Graves Protection and Repatriation Act to safeguard their cultural artifacts. In addition, according to Western officials, the PMA is reserving some of its capacity for Native American tribal entities that are expected to become new preference customers.

The rights of Native Americans to water must be considered in a divestiture. Several Native American tribal entities hold reserved water rights with senior priority dates (for example, from time immemorial or the 1850s or 1860s) on river systems with federal water projects. Many of these entities have reserved water rights that have yet to be quantified and have water uses that have yet to be determined. The amounts of water associated with these rights and the manner in which the rights are exercised would likely affect hydropower operations and the distribution of power revenues. For example, according to Bureau officials, one legal settlement with tribes of the Fort Peck Reservation, Montana, included rights to about 1 million acre-feet of water from the Missouri River.

Other potential claims of Native Americans would affect a divestiture of PMAs and related hydropower assets. For example, under federal legislation, excess federal real property in Oklahoma is subject to transfer to the Secretary of the Interior in trust for Oklahoma Native American tribal entities. According to Southwestern officials, this legislation would complicate a divestiture, although the extent of potential claims by Native Americans under this legislation is difficult to determine because of the lack of information about the prior ownership of lands on which the federal assets are located. According to PMA officials, the PMAs have 880 miles of transmission lines located on rights-of-way that traverse the lands of Native American tribal entities. In the event of a divestiture of a PMA's transmission assets, if the Native Americans agreed to a transfer of these rights-of-way to a buyer, they could expect compensation. Finally, under the Native American Graves Protection and Repatriation Act, certain Native American cultural artifacts found on federal locations must be returned to the relevant Native American tribal entity. Corps officials responsible for managing federal water projects from which Southwestern markets power explained that they have been involved in numerous cases in the past several years involving this law.

Providing federal hydropower to Native Americans would also affect a divestiture. According to Bureau and Western officials, in part because the federal government has a trust responsibility with Native American tribal entities and because those entities are expected to become new preference customers, Western is entering into a process to reallocate the power it will sell to its current and future customers. For example, it is setting aside at least 4 percent of its existing hydropower capacity at the Pick-Sloan Program for Native Americans and other new customers. Western is also changing its rules concerning power reallocations to make it easier for Native American tribal entities to buy federal power. These obligations would complicate a divestiture because they would involve selling power to new preference customers and extending existing contracts—for example, for 20 years (until the year 2020) at the Pick-Sloan Program.

Licensing and Regulating Divested Hydropower Assets Would Introduce Uncertainty Into the Divestiture Process

Before a sale could be completed, the regulatory treatment of the divested hydropower assets would need to be addressed. While many options for regulating the operations of divested hydropower assets exist, including regulatory regimes that could be established by federal, state, or regional authorities, FERC currently licenses the operation of nonfederal hydropower assets. With the proper resources, FERC officials believe they could license and regulate divested hydropower assets. They stated that the Bureau and the Corps have been able to accommodate emerging issues at federal water projects, such as environmental restrictions on water uses, with more flexibility than FERC's quasi-judicial licensing process. They also stated that the Commission's limited flexibility and the timing of its actions on licensing stem from the authority of other federal and state agencies to attach conditions to the license. Currently, FERC primarily regulates the reasonableness of wholesale rates charged by the PMAs and does not provide more detailed oversight of them and the Bureau's and the Corps' assets and operations.

According to FERC officials, the extent of its regulation after a divestiture would depend upon the specific assets divested. A FERC operating license would not be needed if only the PMA's assets (its right to market hydropower and, in the case of Southwestern and Western, also the transmission facilities) were divested because the operating agencies would continue to own and operate the powerplants. The operating agencies would continue to manage the water as in the past and the existing restrictions would likely remain in effect. The buyer would market

the power subject to the same conditions as the former PMA—subject to the existing purposes of the water project.

If a divestiture included the powerplants, the new owner would then be required to obtain a FERC operating license, unless the requirement for FERC's licensing and regulatory activities were specifically exempted by legislation. Licensing a divested hydropower plant could take a long time; FERC's licensing process averages 2.5 years but it has taken as long as 10 to 15 years. In granting an operating license for a hydropower plant, FERC is required to weigh the plant's impact on such "nondevelopmental values" as the environment and recreation. The licensing action involves such numerous studies as the powerplant's impact on fish, plant, and wildlife species; water use and quality; and any nearby cultural and archeological resources. Moreover, the government of each affected state would perform a water quality certification. In addition, to accommodate any "nondevelopmental values," FERC could restrict the use of water for generating electricity, resulting in hydropower generating units that have been "derated"—that is, their generating capacity has been reduced. For example, according to studies by the Electric Power Research Institute,¹⁹ from 1984 to 1989, 16 hydropower plants that had been relicensed were actually derated while 8 powerplants increased their capacity. FERC officials cautioned that if the powerplant, dam, and reservoir were sold, then FERC's licensing process could revisit the management and uses of the water and possibly change the available electric-generating capacity. The uncertainty regarding the length of time to complete FERC's licensing process as well as the amount of generating capacity after licensing is completed could reduce the number and amounts of bids for the resources. However, if the new owners of a hydropower plant were allowed to operate the plant without a FERC license, they would have a competitive advantage against other operators who are subject to FERC's licensing requirements.

A congressional bill introduced on July 23, 1996, contained provisions that would have provided an operating license with a 10-year term for divested hydropower assets. The owners would then have been subject to a FERC license. In congressional testimony in 1995 regarding divestiture of the PMAs, the Chair of the FERC suggested that divestiture legislation specify an automatic grant of the 10-year operating license and require that the divested powerplants continue to operate according to the preexisting

¹⁹The Electric Power Research Institute is the research entity of the electric utility industry.

operating agreements.²⁰ Following a divestiture, FERC would then subject the facility to the normal FERC licensing procedure.

According to FERC officials, FERC would be able to regulate divested multipurpose federal hydropower assets because the Commission already has this responsibility for 1,000 nonfederal hydropower facilities. They said that most nonfederal hydropower plants have widespread impacts and multiple uses because their associated dams and reservoirs store water, thereby affecting water upstream, downstream, and across state lines. However, to handle numerous divestitures or complicated divestitures of federal hydropower assets, FERC would need to request congressional authority to add new personnel and resources.

Effects of Divestiture on Wholesale Power Rates Would Vary Among PMAs' Customers

Precisely determining how the sale of the PMAs would affect the rates charged to customers is difficult. Some of the PMAs' customers have expressed concerns that a divestiture of the PMAs could lead to significant rate increases, while some industry analysts have contended that rate increases would be small for most customers. However, some analysts believe that certain customers would be more likely to see larger rate increases than others. These customers are those who currently (1) buy a higher percentage of their total power from a PMA than others do, (2) pay rates for a PMA's power that are significantly lower than the market rates in the region in which the PMA sells power, and (3) have few or no alternatives for buying power elsewhere at relatively low rates. According to PMA and industry officials, many of these customers are smaller ones located in geographically remote areas. Other factors, such as increasing competition in the wholesale market or mandated limits on rate increases could mitigate the rate increases for these customers. The change in retail rates to end-users (i.e., residential, industrial, and commercial customers) would depend on how much rates increase for the preference customers that serve them. However, the extent to which preference customers pass these increases on to end-users could be affected or mitigated by such things as their ability to increase operating efficiency.

²⁰Testimony of Elizabeth Moler, Chair, FERC, before the Subcommittee on Energy and Power, Committee on Commerce, U.S. House of Representatives. Privatization of the Federal Power Marketing Administrations (House Report 104-46, July 19, 1995).

Reliance on PMAs for Power Would Affect Which Preference Customers Experience the Greater Rate Increases

According to some industry analysts, preference customers who buy a higher percentage of their power from the PMAs would be more likely to experience greater postdivestiture rate increases than those who buy a lower percentage. (Most PMA preference customers buy power from the PMA as well as from other sources, as shown in ch. 2.) For example, if a customer buys 90 percent of its power from the PMA and the buyer of that PMA increases the former PMA's rates by 50 percent, the preference customer would see its overall rate for power from all sources increase by about 41 percent, if all other factors were held constant.²¹ In contrast, if a preference customer buys only 10 percent of its power from the PMA, it would see its overall rate for wholesale power from all sources increase by about 3 percent.

Because preference customers differ in how much they use the PMAs for their power, they will not be affected equally by a divestiture. As we mentioned in chapter 2, almost all (99 percent) of Southeastern's customers purchase less than one-quarter of their total power from that PMA. In contrast, Western provides over 40 percent of its preference customers with more than half of their power. Therefore, if other factors would remain constant, we expect that Western's customers would generally experience larger average rate increases than customers served by Southeastern.

The Difference Between Prevailing Market Rates and Each PMA's Rates Would Affect Rate Increases

Some industry analysts believe that, after a divestiture, the buyer of a PMA would charge rates that conform to the prevailing market rate for wholesale power in the geographic region in which the PMA sells power.²² As discussed in chapter 2, these prevailing market rates are now significantly more than the rates the PMAs charge their customers. Thus, the difference between what a PMA currently charges its customers and the regional market rate could determine how much a buyer would increase its rates after its sale. The lower the PMA's current rate (relative to the existing market rate), the greater the rate increase would be.

However, the differences between a PMA's rates and market rates for wholesale power vary across a PMA's service area. For example, according to our previously cited September 1996 report, the difference between the average wholesale market rates of IOUS and Southwestern's rates vary

²¹The overall rate means the blended, weighted average rate for power that the preference customer pays for power purchased from the PMA and all of its other wholesale suppliers.

²²FERC officials noted that if a buyer were subject to FERC's jurisdiction, the buyer would have to obtain its approval before changing to market-based rates.

across its service area. In one part of Southwestern's service area, its rates were 1.18 cents per kWh less than the average wholesale rates of IOUs, while in another part of Southwestern's service area, its rates were 3 cents per kWh less than the average wholesale rates of IOUs. As a result, preference customers in different regions would experience different rate increases in the event of a divestiture.

**Access to Alternate Power
Suppliers Would Affect
Rate Increases**

Those geographically remote preference customers that would not have access to many alternate suppliers of electricity after a divestiture would be the most susceptible to rate increases that would exceed competitive market rates. Conversely, if a preference customer could purchase power at competitive rates from other sources, the buyer of a PMA would be less likely to raise its rates.²³

Representatives of the Edison Electric Institute maintain that because the wholesale market is competitive, very few preference customers will lack access to alternate suppliers following a divestiture. They believe that, after a PMA is divested, preference customers who relied heavily on that PMA will be able to buy power from independent power producers, energy brokers, or energy marketers at a relatively low cost. In addition, they contend that many municipal and cooperative utilities already are competitive participants in the wholesale market. However, representatives of PMAs and their preference customers believe that having access to alternate supplies of electricity is not enough. They note that even in cases where preference customers may buy most of their electricity from alternate sources, these customers often rely on the PMA for power during hours of peak demand, particularly in regions in which Southeastern and Southwestern sell power. Having access to inexpensive power during times of peak demand is important to these customers because typically power sold to meet this demand is more expensive than power sold at other times.

Finally, the ongoing deregulation and restructuring of the electric utility industry contributes to the difficulty of assessing the potential impacts of a divestiture. Wholesale electric markets are becoming increasingly competitive, offering preference customers and other utilities the opportunity to buy from more than one supplier of wholesale power. This

²³In a competitive market, a buyer of a PMA could charge an isolated preference customer rates that equal the market rate in the nearest geographic region in which power is available, plus transmission charges. If the buyer tried to charge more than that, the customer could obtain the power from another source; however, some customers have access to wholesale power markets only through transmission lines operated by the PMAs.

trend creates additional uncertainty about any potential rate impacts from a divestiture.

**Changes in Wholesale
Rates Would Primarily
Determine the Retail Rates**

Following a divestiture, the retail rates paid by residential, commercial, and industrial consumers would reflect the changes in rates experienced by the preference customers who serve them. For example, retail customers served by preference customers who buy most of their power from the PMA may see significantly higher rate increases than retail customers who buy their power from preference customers that buy a smaller percentage of their total power from the divested PMA.

However, in many cases, determining how preference customers would change the retail rates after a sale of federal hydropower assets would be difficult. For example, in competitive markets, some preference customers may be able to avoid passing on increased costs to their retail customers by increasing their operational efficiency. Alternatively, preference customers may choose to reallocate these rate increases from one customer class to another—for example, from industrial end-users to residential end-users—to keep operating costs low at industrial facilities.

**Changes in Wholesale
Power Rates and Water
Allocations Would
Determine the Regional
Economic Impact**

The degree to which a regional economy would be affected by the divestiture of a PMA would depend mostly on several factors—the regional economy’s reliance on that PMA’s power, the amount of change in overall retail electric rates, the importance of electricity in the regional economy, and the extent to which water allocations from the former federal water projects would be changed. Limited available studies have shown the economic impacts of a rate change by the PMAs to be minor on industrial and residential customers because preference customers have relied on power from PMAs for only a small portion of their total power and electricity has been a relatively small portion of the cost of doing business for most commercial enterprises and industries as well as a small portion of household expenditures.²⁴ But regional economies that rely on such electricity-intensive industries as primary metals and chemicals would see the greatest amount of economic harm from any rate increases after a divestiture. According to officials of the Electricity Consumers Resource

²⁴Allison, T., P. Griffes, and B.K. Edwards. Regional Economic Impacts of Changes in Electricity Rates Resulting From Western Area Power Administration’s Power Marketing Alternatives. Chicago, Illinois: Argonne National Laboratory, Mar. 1995.

Council (ELCON),²⁵ the cost of electricity for such industries as aluminum smelters, glass, and chemicals can reach from 30 percent to 40 percent of production costs. For example, in response to TVA's double-digit rate increases of the 1970s, industries in its service area ceased their operations and in some cases relocated to where electrical rates were lower. TVA's annual sales to industrial customers declined from about 25 billion kWh in 1979 to 16 billion kWh in 1993.²⁶

Regional economies that rely heavily on water and water-dependent industries (e.g., in which farming relies extensively on irrigation) would also be affected by changes in water allocations after a divestiture. Depending on the terms of the preexisting contracts and the divestiture legislation, if the dam and reservoir were divested, then the purposes served by the federal water projects and associated water allocations could change. For example, FERC's operating license could include, subject to existing laws, a condition that more water be used for environmental purposes and less for hydropower.

²⁵ELCON is the national association of large industrial electric consumers. Its members buy about 4 percent of the nation's electricity.

²⁶Tennessee Valley Authority: Financial Problems Raise Questions About Long-term Viability (GAO/AIMD/RCED-95-134, Aug. 17, 1995).

Objectives, Scope, and Methodology

In response to divestiture proposals, on January 18, 1996, 39 Members of Congress requested that we examine the issues related to the divestiture of the power marketing administrations (PMA) and related federal hydropower assets. On March 1, 1996, we received a separate request letter from another Member of Congress. We agreed to report on the issues related to divesting the federal hydropower assets, including the PMAs; however, we did not evaluate whether or not the PMAs and federal hydropower assets should be divested. We agreed to provide information on (1) the Southeastern, Southwestern, and Western Area Power Administrations, including their similarities and differences, and their interactions with the agencies that operate federal water projects (mostly, the Bureau of Reclamation, referred to as “the Bureau” and the U.S. Army Corps of Engineers, referred to as “the Corps”); (2) the main objectives and general decisions involved in divesting federal assets, along with how these objectives and decisions apply to federal hydropower assets; and (3) the specific issues related to hydropower that should be addressed before a divestiture of the PMAs. As requested, we included in our study only Southeastern, Southwestern, and Western, which jointly sold about 1.6 percent of the nation’s total electricity in fiscal year 1995. We did not include the Bonneville Power Administration because it has a unique financial situation¹ or the Alaska Power Administration because it is being divested.

Providing Information on the PMAs, Including Similarities, Differences, and Interactions With Agencies That Operate Federal Water Projects

To provide information on the similarities and the differences between the PMAs, we obtained information for fiscal year 1994 regarding the Bureau’s and the Corps’ capacity to generate hydropower as well as the PMAs’ (1) sales of electricity in kilowatt hours (kWh), (2) revenues from the sale of power in fiscal year 1994, and (3) revenues per kWh sold. We also obtained data on how much power each customer purchased from the PMA and from other sources. We obtained data on the Bureau’s and the Corps’ capacity to generate electricity and the PMAs’ electricity sales and revenues that came from the PMAs’ fiscal year 1994 annual reports. The data on the customers’ sales and revenues came from the Energy Information Administration (EIA) for calendar year 1994—the most recent EIA data that were available at the time of our review. Although the PMAs had published their fiscal year 1995 annual reports, we used data from the previous fiscal

¹As we reported in *Bonneville Power Administration: Borrowing Practices and Financial Condition* (GAO/AIMD-94-67BR, Apr. 19, 1994), Bonneville faces significant operating and financial risks because of its heavy reliance on borrowing, recent operating losses, and various uncertainties. The efforts to improve Bonneville’s financial condition could cause increases in its electric rates, thus narrowing the gap between Bonneville’s rates and the costs of alternative sources of power and encouraging some Bonneville customers to buy power from other sources.

year because this information was more comparable to the EIA data. We also relied on data that had been collected and analyzed for two recent GAO reports: Power Marketing Administrations: Cost Recovery, Financing, and Comparison to Nonfederal Utilities (GAO/AIMD-96-145, Sept. 19, 1996) and Federal Electric Power: Operating and Financial Status of DOE's Power Marketing Administrations (GAO/RCED/AIMD-96-9FS, Oct. 13, 1995).

To obtain information on the working interactions between the PMAS and the Bureau and the Corps, we interviewed agency officials at various field offices of the Bureau, the Corps, Western, Southeastern, and Southwestern. These officials described in detail how the PMAS interact with the Bureau and/or the Corps to write the operating plans and manuals for their river systems and water projects, to update annual and monthly operating plans, and to dispatch and schedule power generation on a continuous basis. We also discussed the documents that guide the planning and operational interactions between the PMAS and the Bureau or the Corps—for example, the Bureau's annual operating plan for the Colorado River Storage Project and the Corps' master manual for the Missouri River.

Examining the Main Objectives and General Decisions Involved in Divesting Federal Assets

To examine the objectives and general decisions of a potential divestiture of federal assets, such as federal hydropower assets, we consulted officials from the Congressional Budget Office, the Office of Management and Budget, the Edison Electric Institute, and the EOP Group, Inc. We also contacted national representatives of the PMAS' preference customers—the American Public Power Association and the National Rural Electric Cooperatives Association—to discuss potential policy tradeoffs that any divestiture of federal hydropower assets would have to weigh. To the extent possible, we relied on work we had previously performed, such as our study related to the divestiture of the United States Enrichment Corporation.² We also monitored the federal government's efforts to sell the Alaska Power Administration and efforts by other countries to “privatize” state-owned industries.

²Uranium Enrichment: Process to Privatize the U.S. Enrichment Corporation Needs to Be Strengthened (GAO/RCED-95-245, Sept. 14, 1995).

Examining the Specific Factors That Would Have to Be Addressed in a Divestiture of Federal Hydropower Assets

To examine the specific factors that would have to be addressed if Southeastern, Southwestern, and Western were divested as well as any related hydropower assets, we interviewed officials from various organizations, including the following in the Washington, D.C., area: the American Public Power Association, the Edison Electric Institute, EOP Group, Inc., the National Hydropower Association, and the National Rural Electric Cooperatives Association. We also contacted the following federal agencies in the Washington, D.C., area: the Bureau, the Corps, the Congressional Budget Office, the PMA Liaison Office in the Department of Energy, the Federal Energy Regulatory Commission, and the Office of Management and Budget.

We performed detailed work at field locations of the PMAs, the Bureau, and the Corps, which manage the marketing and generation of federal hydropower. We interviewed agency officials and obtained and analyzed documentation, such as authorizing, environmental, and related legislation; regulations pertaining to power commitments and water allocations; repayment schedules; contracts and agreements (both power and nonpower); and environmental impact and related studies. The specific offices and locations we visited were as follows:

- the Southeastern Power Administration, in Elberton, Georgia. Because the Corps generates power that Southeastern markets, we also performed work at the Corps' district offices in Nashville, Tennessee; Mobile, Alabama; and Savannah, Georgia.
- the Southwestern Power Administration, in Tulsa, Oklahoma. Because the Corps generates the power that Southwestern markets, we also contacted the Corps' district office in Tulsa .
- the Western Area Power Administration's headquarters in Golden, Colorado and its regional office in Folsom, California. We also visited the Bureau's offices in Billings, Montana, Salt Lake City, Utah, and Sacramento, California. These three offices administer the generation of power from the Pick-Sloan (Upper Missouri River Basin) Program, Colorado River Storage Project, and Central Valley Project, respectively. Bureau officials agreed that we selected the appropriate offices. Collectively, these offices accounted for over 70 percent of both Western's electricity sales and the revenues from those sales in fiscal year 1995.

To examine the concerns of the PMAs' preference customers about the potential impacts of divestitures, we contacted such groups as the Southeastern Federal Power Customers, Inc. (for Southeastern); the Southwestern Power Resources Association (for Southwestern); the

Midwest Electric Consumers Association (for Western's power generated from the Pick-Sloan Program); and the Colorado River Energy Distributors Association (for Western's power generated from the Colorado River Storage Project).

We also discussed possible rate increases and regional economic impacts that could occur after a divestiture. To examine this issue, we contacted officials from the American Public Power Association, the Edison Electric Institute, the National Rural Cooperatives Association, and the PMAS.

We conducted our review from May 1996 through February 1997 in accordance with generally accepted government auditing principles. We provided a draft of this report to DOE (including the PMAS' liaison office), the Department of the Interior (including the Bureau), FERC, and the Department of Defense (including the Corps). DOE, Interior, and FERC provided written comments which are included in appendixes VI, VII, and VIII, respectively, along with our responses. We met with officials of the Department of Defense, including the Corps' Director of Hydropower Operations and the Director of Operations, Construction, and Readiness. Defense also provided clarifying comments that we incorporated into our report as appropriate.

Selected Federal Statutes Affecting the Management of Federal Water Projects and Their Hydropower Assets

The management of federal water projects by the Bureau and the Corps is guided by many federal statutes, including federal reclamation and water management statutes that are generally applicable to all water projects, specific authorization and appropriation statutes for individual projects, and environmental statutes. The effects of these laws on the management of a water project and its hydropower assets after a divestiture, as well as on legal liabilities retained by the government or assigned to the buyer, depend on the specific terms and conditions of the divestiture legislation, the provisions of the related statutes in question, the types of assets divested by the government (for instance, only the PMA or, alternatively, the PMA and the generating assets and/or the dam and the reservoir), and other issues. The three tables in this appendix describe some of the statutes that agency officials stated could affect a divestiture proposal, including legislation that applies to the Bureau and the Corps related to the generation of hydropower (table II.1), environmental legislation that affects hydropower generation (table II.2), and legislation that would affect the issuance of a FERC operating license that could be required if the powerhouse and/or dam and reservoir were sold (table II.3). All of the tables exclude project-specific legislation.

Table II.1: Key Hydropower-Related Legislation

Legislation	Key components
Reclamation Act of 1902	Establishes irrigation in the West as a national policy and authorizes the Secretary of the Interior to locate, construct, operate, and maintain works for the storage, diversion, and development of water for the reclamation of arid and semi-arid lands in the western states.
Town Sites and Power Development Act of 1906	Authorizes the Secretary of the Interior to lease surplus power or power privileges, provided that the lease does not impair the efficiency of the irrigation project.
River and Harbor Act of 1909	Authorizes the Secretary of War to acquire land owned and developed by power companies at the St. Marys River Falls in Michigan and to revoke their water power "licenses." Authorizes the Secretary of War to lease water power rights at St. Marys River Falls for a "just and reasonable" compensation.
River and Harbor Act of 1912	Authorizes the Secretary of the Army, upon recommendation of the Chief of Engineers, to provide in any authorized dam for navigation such foundations, sluices, and other works as may be considered desirable for future water power development.
Flood Control Act of 1917	Requires that the Corps' surveys of projects for flood control and mitigation at rivers and harbors include comprehensive studies of watershed development, including water power.

(continued)

Appendix II
Selected Federal Statutes Affecting the
Management of Federal Water Projects and
Their Hydropower Assets

Legislation	Key components
Federal Power Act of 1920	Created the Federal Power Commission (now the Federal Energy Regulatory Commission or FERC) and authorizes it to issue licenses to nonfederal entities to construct and operate hydropower facilities. Requires the Corps to participate with FERC in the review and approval of nonfederal hydropower projects to assess their impact on navigation of nonfederal hydropower development.
River and Harbor Act of 1927	Authorizes new surveys on the development of flood control, water power, and navigation.
Boulder Canyon Project Act of 1928	Authorizes Arizona, California, and Nevada to enter into a compact to apportion the lower Colorado River.
Bonneville Project Act of 1937	Creates the Bonneville Power Administration to market federal power in the Pacific Northwest. Requires that preference be given to public bodies and cooperatives in the sale of electric energy generated at the project.
Flood Control Act of 1938	Authorizes the Corps to install generating facilities for future power use at federal dams when approved by the Secretary of the Army on the recommendation of the Chief of Engineers and the Federal Power Commission (now FERC).
Reclamation Project Act of 1939	Limits sales of power to 40 years. Sets forth general principles for setting rates. Describes preference in the sale of power. Prohibits marketing of electricity that would impair the efficiency of the project for irrigation purposes.

(continued)

Appendix II
Selected Federal Statutes Affecting the
Management of Federal Water Projects and
Their Hydropower Assets

Legislation	Key components
Flood Control Act of 1944	Formalizes the relationship between the Corps and the power marketing agencies (PMA), and establishes the relationship between the PMAs and their preference customers. Requires that the management of surplus electric power generated at the Corps' facilities be delivered to the Secretary of the Interior (now the Secretary of Energy) who shall transmit and dispose of such power so as to encourage the most widespread use at the lowest possible rates to consumers consistent with sound business principles. Designates public bodies and cooperatives as "preference customers" in the distribution of federal power marketed by the PMAs. Declares that the policy of the Congress is to recognize the rights and the interests of the states in water resource development and requires consultation and coordination with affected states. Authorizes the Corps to build and maintain facilities for recreational activities in reservoir areas. Authorizes the Corps to supply reservoir water for municipal and industrial purposes. The Corps can do so only when water in a reservoir is considered surplus to amounts needed for authorized purposes, provided that no contracts for municipal and industrial water shall adversely affect existing lawful uses of such water. Provides that the Corps' reservoirs may include irrigation as a purpose in 17 western states. Authorizes construction of dams on the Missouri River.
Water Supply Act of 1958	Authorizes the Bureau or the Corps to include storage capacity for municipal and industrial water supply purposes when building or enlarging reservoirs under their jurisdiction.
Fish and Wildlife Coordination Act of 1958	Provides that fish and wildlife conservation receive equal consideration and be coordinated with other project purposes.
Flood Control Act of 1965	Permits the Secretary of the Army, with the approval of the Congressional Public Works Committee, to authorize water resource development projects costing \$15 million or less.
River and Harbor and Flood Control Act of 1968	Authorizes the Corps to reimburse nonfederal public bodies for work performed on previously authorized water resource projects. In addition to cash payments, the act authorizes the Corps to reimburse nonfederal bodies through federal credits against local water resource cooperation requirements. To qualify for reimbursement, nonfederal bodies must enter into agreements with the Corps prior to reimbursement. The agreements must specify the terms of reimbursement, which is subject to a federal cap for each project.

(continued)

Appendix II
Selected Federal Statutes Affecting the
Management of Federal Water Projects and
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Legislation	Key components
River and Harbor and Flood Control Act of 1970	Provides for the publication of guidelines to ensure that federal agencies evaluate the possible adverse economic, social, and environmental effects of a water resource project so that their final decisions are made in "the best overall public interest." Expresses congressional intent that the objectives of a water resource project include enhancing national and regional economic development as well as environmental protection and improvement. Requires that each nonfederal interest enter into a written agreement with the Secretary of the Army to furnish its required cooperation for any water resources project before the Corps begins constructing it.
Federal Columbia River Transmission System Act	Authorizes Bonneville Power Administration to issue revenue bonds.
Water Resources Development Act of 1976	Requires the Corps to study efficient methods of using hydropower at the Corps' water resource development projects. Establishes the Alaska Hydroelectric Power Development Fund to study and develop the Corps' hydropower facilities in Alaska.
Department of Energy Organization Act of 1977	Created the Department of Energy (DOE), transferred federal responsibility for the four existing PMAs from the Department of the Interior to the DOE, and created an additional PMA—the Western Area Power Administration.
Public Utility Regulatory Policies Act of 1978	Encourages cogeneration and small power production by requiring electric utilities to offer to purchase electric energy from cogeneration and small power production facilities at reasonable rates which do not discriminate against these facilities. Provides for simplified and expeditious licensing procedures under the Federal Power Act for small hydropower projects in connection with existing dams.
Pacific Northwest Electric Power Planning and Conservation Act	Authorizes Bonneville Power Administration to plan for and acquire additional power resources. Requires federal agencies responsible for managing, operating, or regulating hydropower facilities on the Columbia River to provide "equitable treatment" for fish and wildlife with the other purposes for which these facilities are managed and operated.
Crude Oil Windfall Profit Tax of 1980	Provides tax incentives to small-scale hydropower producers.
Water Resources Development Act of 1986	Requires nonfederal interests to bear all costs associated with new development of hydropower at the Corps' facilities. Requires nonfederal interests to contribute 50 percent of the cost of preauthorization feasibility studies for new hydropower at federal facilities.
Electric Consumers Protection Act of 1986	Amends the Federal Power Act to remove preference for applications by states and municipalities in relicensing actions and gives equal consideration to nonpower purposes (e.g., energy conservation, fish, recreation, and wildlife) in comparison to power purposes when making licensing decisions.

(continued)

Appendix II
Selected Federal Statutes Affecting the
Management of Federal Water Projects and
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Legislation	Key components
Water Resources Development Act of 1990	Defines operation and maintenance activities in connection with hydropower facilities at the Corps' projects to be inherently governmental functions.
Energy Policy Act of 1992	Encourages open transmission of electricity by allowing wholesale electricity customers, such as municipal distributors, to purchase electricity from any supplier, even if that power must be transmitted over lines owned by another utility—referred to as “wheeling of power.” FERC can compel a utility to transmit electricity generated by another utility into its service area for resale.
Water Resources Development Act of 1996	Authorizes the Secretary of the Army to increase the efficiency of energy production or the capacity of a hydropower generating facility at a Corps' water resources project if the Secretary determines that the increase is economically justified and financially feasible; will not result in any significant adverse environmental impacts; will not involve major structural or operational changes in the project; and will not adversely affect the use, management or protection of existing federal, state, or tribal water rights. Requires the Secretary of the Army to provide affected state, tribal, and federal agencies a copy of the proposed determinations before proceeding with a proposed uprating and to respond to any comments that these agencies submit.

Table II.2: Key Environmental Legislation Affecting Hydropower Generation

Title of Legislation	Key components
National Historic Preservation Act of 1966	Requires federal agencies to consider the effect on any property listed or eligible for listing on the National Register of Historic Places before authorizing or funding any project.
Wild and Scenic Rivers Act of 1968	Establishes a national wild and scenic rivers system. Prohibits federal agencies from assisting any water resources project that would have “a direct and adverse effect on the values for which such river was established.” Prohibits licensing under the Federal Power Act of hydropower projects on or directly affecting any river included in the national wild and scenic rivers system.
National Environmental Policy Act of 1969	Establishes a broad federal policy on environmental quality. Requires federal agencies to prepare “environmental impact statements” for proposed major federal actions significantly affecting the quality of the human environment.
Endangered Species Act of 1973	Requires all federal agencies (in consultation with the Secretary of the Interior or Secretary of Commerce) to carry out programs to conserve endangered and threatened species, and to ensure that their actions do not jeopardize the continued existence of listed species or destroy or adversely affect critical habitats of listed species.

(continued)

Appendix II
Selected Federal Statutes Affecting the
Management of Federal Water Projects and
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Title of Legislation	Key components
Resource Conservation and Recovery Act of 1976	Provides for management of hazardous waste. Requires facilities that treat, store, or dispose of hazardous waste to obtain a permit and take corrective action to clean up hazardous waste contamination. Provides for regulation of underground petroleum storage tanks.
Toxic Substances Control Act	Provides for regulation of hazardous chemicals. Requires the Environmental Protection Agency to issue regulations prescribing methods for the disposal of polychlorinated biphenyls.
Comprehensive Environmental Response, Compensation, and Liability Act of 1980	Provides for the cleanup of hazardous substances. Requires federal agencies that intend to terminate operations on real property to identify those portions of the property that are not contaminated by hazardous waste or petroleum products.
Clean Water Act of 1977	Establishes a national goal of eliminating pollutant discharges into navigable U.S. waters and provides policy goals to make federal waters safe for fish, shellfish, wildlife, and recreation. Requires the Environmental Protection Agency to enter into interagency agreements with the Secretaries of Agriculture, the Army, and the Interior to provide maximum utilization of federal laws to maintain water quality through appropriate implementation of area-wide waste treatment management plans. Provides for federal facility compliance with all federal, state, interstate, and local requirements respecting the control and abatement of water pollution in the same manner and extent as any nongovernmental entity. Requires nonfederal projects to have a section 401 state water quality certification or waiver before FERC can issue a license. Under section 404, projects that discharge dredged or fill material into "the waters of the U.S." must have a permit from the Corps.
Fish and Wildlife Conservation Act of 1980	Encourages federal agencies to use their statutory and administrative authority to conserve and promote wildlife conservation of nongame fish and wildlife and their habitats.

Appendix II
Selected Federal Statutes Affecting the
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Table II.3: Legislation With Which FERC Licensing Actions Must Comply

Title of Legislation	Key components
Federal Power Act	Pursuant to Part I of this Act, as amended, FERC issues licenses to nonfederal hydropower projects. Before licensing any project, FERC must find the project to be best adapted to a comprehensive plan for improving or developing a waterway or waterways for beneficial public purposes and be satisfied that the project meets the various other requirements of Part I.
Electric Consumers Protection Act	Requires FERC to include in any license issued under the Federal Power Act appropriate conditions to protect, mitigate damages to, and enhance fish and wildlife based on recommendations from federal and state fish and wildlife agencies.
Fish and Wildlife Coordination Act	Requires FERC to consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service before acting on a license application.
National Historic Preservation Act	Requires FERC, before licensing a project, to consider the project's effects on any site, structure, or object included in, or eligible to be included in, the National Register of Historic Places and to afford the Advisory Council on Historic Preservation an opportunity to comment.
Wild and Scenic Rivers Act	Bars FERC from licensing hydropower projects on or directly affecting river segments designated as, or selected for study for possible inclusion in, the National Wild and Scenic Rivers System.
National Environmental Policy Act	Requires FERC to analyze the potential environmental effects of a proposed action and of reasonable alternatives.
Coastal Zone Management Act	Bars the licensing of a project within or affecting a state's coastal zone, unless the state concurs with the applicant's certification of consistency with the state's approved coastal zone management program.
Endangered Species Act of 1973	Requires FERC to ensure that licensing actions do not jeopardize the continued existence of listed species or destroy or adversely affect their critical habitats.
Clean Water Act	Section 401 requires a project to have a state water quality certification, or waiver, before FERC can issue a license. Section 404 requires a project, that necessitates construction of a dam or placement of fill in U.S. waters, have a permit from the Corps.
American Indian Religious Freedom Act	Requires FERC to avoid unnecessary interference with traditional religious practices of Native Americans.
Energy Policy Act of 1992	Sections 1701(b), 2401, 2402, and 2403 define fishways, require future FERC licensees on public lands to obtain rights-of-way permits from the Bureau of Land Management or the Forest Service, limit hydropower projects in the National Park System, and authorize FERC to permit the preparation of environmental analysis documents by FERC-approved contractors paid by the applicant.
Pacific Northwest Electric Power Planning and Conservation Act	Requires FERC to provide "equitable treatment" to fish and wildlife; take into account "to the fullest extent practicable" the Northwest Power and Conservation Planning Council's fish and wildlife program; and consult and coordinate, to the "greatest extent practicable," actions with other relevant agencies.
Wilderness Act	Bars the licensing of projects within designated wilderness areas.

Hydropower Projects From Which the PMAs Market Power

Operating Agency	Hydropower project	Generating units	Nameplate capacity ^a (megawatts)	Fiscal year of initial operation
Southeastern				
Corps	Allatoona	3	74.0	1950
	Buford	3	86.0	1957
	Carters	4	500.0	1975
	J. Strom Thurmond	7	280.0	1953
	Walter F. George	4	130.0	1963
	Hartwell	5	344.0	1962
	Robert F. Henry	4	68.0	1975
	Millers Ferry	3	75.0	1970
	West Point	3	73.0	1975
	Richard B. Russell ^e	4	300.0	1984
	John H. Kerr	7	204.0	1953
	Philpott	3	14.0	1952
	Stonewall Jackson ^f	1	0.3	1994
	Barkley	4	130.0	1966
	J. Percy Priest	1	28.0	1970
	Cheatham	3	36.0	1959
	Cordell Hull	3	100.0	1973
	Old Hickory	4	100.0	1957
	Center Hill	3	135.0	1950
	Dale Hollow	3	54.0	1948
	Wolf Creek	6	270.0	1951
	Laurel	1	61.0	1976
	Jim Woodruff	3	30.0	1957
Subtotal		82	3,092.3	
Southwestern				
Corps	Beaver	2	112.0	1965
	Blakely Mountain	2	75.0	1956
	Broken Bow	2	100.0	1970

Appendix III
Hydropower Projects From Which the PMAs
Market Power

Authorized purposes										Reservoir	
Hydropower	Fish and wildlife	Flood control	Navigation	Recreation	Irrigation	Water quality	Water supply	Other ^b		Storage ^c (acre-feet)	Surface ^d (acres)
	X	X	X	X	X	X	X			670,000	19,201
	X	X	X	X	X	X	X			2,554,000	47,182
	X	X		X	X	X				472,800	3,880
	X										
		X	X	X	X	X	X			3,850,000	71,100
	X			X	X	X				1,028,100	45,181
	X	X	X	X	X	X	X			3,439,000	55,950
	X										
		X	X	X						234,200	13,300
	X		X	X	X					331,800	17,201
	X	X	X	X	X	X				711,000	25,864
	X										
		X	X		X	X	X			1,488,200	26,653
	X	X	X		X	X	X			3,293,600	83,200
	X	X	X		X	X	X			318,300	4,060
		X	X		X	X	X	X		74,650	3,470
	X	X	X	X	X	X				2,082,000	93,430
	X										
		X	X		X	X				652,000	22,720
	X	X		X	X	X				104,000	7,450
	X	X		X	X	X				310,900	12,200
	X	X		X	X	X				545,000	22,500
	X	X	X		X	X				2,092,000	23,060
	X	X	X		X	X	X			1,706,000	30,990
	X	X	X		X	X				6,089,000	63,530
	X	X	X		X	X				435,600	6,060
	X	X		X	X	X				367,320	38,850
	X	X	X		X		X			1,952,000	31,700
	X										
		X		X						3,761,500	48,300
	X	X	X		X	X	X			1,602,000	18,000

(continued)

Appendix III
Hydropower Projects From Which the PMAs
Market Power

Operating Agency	Hydropower project	Generating units	Nameplate capacity^a(megawatts)	Fiscal year of initial operation
	Bull Shoals	8	340.0	1953
	Clarence Cannon	2	58.0	1985
	Dardanelle	4	124.0	1965
	DeGray	2	68.0	1972
	Denison	2	70.0	1945
	Eufaula	3	90.0	1965
	Ft. Gibson	4	45.0	1953
	Greers Ferry	2	96.0	1964
	Harry S. Truman ^g	2	53.3	1982
	Keystone	2	70.0	1968
	Narrows	3	25.5	1950
	Norfolk	2	80.6	1944
	Ozark	5	100.0	1973
	Robert D. Willis	2	7.4	1989
	Robert S. Kerr	4	110.0	1971
	Sam Rayburn	2	52.0	1966
	Stockton	1	45.2	1973
	Table Rock	4	200.0	1959
	Tenkiller Ferry	2	39.1	1954
	Webbers Falls	3	60.0	1974
	Whitney	2	30.0	1955
Subtotal		67	2,051.0	
Western				
Corps	Fort Peck	5	218.0	1943
	Garrison	5	546.0	1956
	Big Bend	8	538.0	1965
	Fort Randall	8	387.0	1954
	Gavins Point	3	122.0	1956
	Oahe	7	786.0	1962
Bureau	Hoover	19	2,079.0	1936
	Judge Francis Carr	2	154.0	1963

**Appendix III
Hydropower Projects From Which the PMAs
Market Power**

Hydropower	Fish and wildlife	Authorized purposes							Reservoir	
		Flood control	Navigation	Recreation	Irrigation	Water quality	Water supply	Other ^b	Storage ^c (acre-feet)	Surface ^d (acres)
X		X		X					5,408,000	71,240
X										
	X	X	X	X		X	X		1,428,000	38,400
X			X	X					486,200	34,700
X		X	X	X			X		1,377,000	23,800
X		X		X			X		9,300,000	144,000
X	X	X	X	X			X		5,000,000	147,960
X		X		X					1,284,400	51,000
X	X	X		X			X		2,844,000	40,480
X										
	X	X		X					8,120,000	209,300
X	X	X	X	X			X		2,593,000	54,300
X		X		X					407,900	9,820
X	X	X		X					1,983,000	30,700
X	X	X		X					148,400	11,100
X										
	X	X		X					306,400	13,700
X										
	X	X	X	X			X		1,735,000	43,800
X	X	X	X	X			X		5,610,000	142,700
X	X	X	X	X		X	X		1,674,000	38,288
X	X	X		X					3,462,000	52,250
X										
		X		X			X		1,342,660	20,800
X										
	X		X	X					760,000	10,900
X	X	X		X			X		2,100,400	49,820
X	X	X	X	X	X	X	X	X	18,700,000	249,000
X	X	X	X	X	X	X	X	X	23,900,000	382,000
X	X	X	X	X	X	X	X	X	1,900,000	61,000
X	X	X	X	X	X	X	X	X	5,600,000	102,000
X	X	X	X	X	X	X	X	X	492,000	32,000
X	X	X	X	X	X	X	X	X	23,300,000	373,000
X		X	X			X		X	29,775,000	162,700
X										
						X			14,700	750

(continued)

Appendix III
Hydropower Projects From Which the PMAs
Market Power

Operating Agency	Hydropower project	Generating units	Nameplate capacity^a(megawatts)	Fiscal year of initial operation
	Folsom	3	199.0	1955
	Keswick	3	117.0	1949
	New Melones	2	300.0	1979
	Nimbus	2	14.0	1955
	O'Neill	6	25.0	1967
	W. R. Gianelli	8	202.0	1968
	Shasta	7	539.0	1944
	Spring Creek ^h	2	180.0	1964
	Trinity	3	140.0	1964
	Mount Elbert	2	200.0	1981
	Big Thompson	1	5.0	1959
	Estes	3	45.0	1950
	Flatiron	3	95.0	1954
	Green Mountain	2	26.0	1943
	Marys Lake	1	8.0	1951
	Pole Hill	1	38.0	1954
	Yellowtail	4	250.0	1966
	Alcova	2	36.0	1955
	Boysen	2	15.0	1952
	Buffalo Bill	3	18.0	1995
	Fremont Canyon	2	67.0	1960
	Glendo	2	38.0	1958
	Guernsey	2	6.0	1927
	Heart Mountain	1	5.0	1948
	Kortes	3	36.0	1950
	Pilot Butte	2	2.0	1925
	Seminole	3	51.0	1939
	Shoshone	1	3.0	1995
	Canyon Ferry	3	50.0	1953
	Davis	5	240.0	1951
	Parker	4	120.0	1942
	Glen Canyon	8	1,288.0	1964
	Blue Mesa	2	86.0	1967

**Appendix III
Hydropower Projects From Which the PMAs
Market Power**

Authorized purposes									Reservoir	
Hydropower	Fish and wildlife	Flood control	Navigation	Recreation	Irrigation	Water quality	Water supply	Other ^b	Storage ^c (acre-feet)	Surface ^d (acres)
X	X	X		X	X		X		1,010,000	11,400
X	X							X	23,772	640
X					X				2,420,000	12,500
X								X	8,800	540
X					X				56,430	2,250
X					X				2,040,000	13,000
X		X	X	X	X		X		4,552,090	29,743
X	X			X				X	241,000	3,220
X				X	X				2,447,650	16,535
X									11,143	279
X						X			Canal	Canal
X					X			X	927	42
X					X				Tunnel	Tunnel
X					X				153,639	2,130
X					X				Tunnel	Tunnel
X					X				3,068	185
X	X	X			X				1,328,360	17,300
X					X				184,405	2,471
X		X			X				952,432	22,166
X					X		X		646,565	8,324
X		X			X		X		1,016,507	22,064
X		X			X				789,402	12,400
X					X				45,612	2,375
X					X		X		i	i
X									4,739	83
X					X				Canal	Canal
X					X				1,017,279	20,291
X					X		X		i	i
X	X	X			X		X		2,051,519	35,181
X					X			X	1,818,300	28,200
X		X					X		646,200	20,400
X	X	X	X	X	X	X	X	X	27,000,000	160,784
X	X	X	X	X	X	X	X	X	940,800	9,180

(continued)

Appendix III
Hydropower Projects From Which the PMAs
Market Power

Operating Agency	Hydropower project	Generating units	Nameplate capacity^a(megawatts)	Fiscal year of initial operation
	Crystal	1	28.0	1978
	Flaming Gorge	3	152.0	1963
	McPhee	1	1.0	1993
	Morrow Point	2	173.0	1970
	Towaoc	1	11.0	1993
	Upper Molina	1	9.0	1962
	Lower Molina	1	5.0	1962
	Elephant Butte	3	28.0	1940
	Fontenelle	1	10.0	1968
	Stampede	2	4.0	1987
	Spirit Mountain	1	5.0	1995
	Lewiston ^j	1	0.3	1964
IBWC ^k	Amistad	2	66 ^l	1983
IBWC ^k	Falcon	3	32 ^l	1954
PRWUA ^m	Deer Creek	2	5.0	1958
Subtotal		180	9,803.4	
Total		329	14,946.7	

Appendix III
Hydropower Projects From Which the PMAs
Market Power

Authorized purposes										Reservoir	
Hydropower	Fish and wildlife	Flood control	Navigation	Recreation	Irrigation	Water quality	Water supply	Other ^b	Storage ^c (acre-feet)	Surface ^d (acres)	
X	X	X	X		X	X	X	X	26,000	301	
X											
	X	X	X	X	X	X	X	X	3,788,700	42,040	
X	X	X	X	X	X	X	X	X	381,100	4,469	
X	X	X	X	X	X	X	X	X	117,165	817	
X						X			Tunnel	Tunnel	
X	X					X		X	Pipeline	Pipeline	
X	X					X		X	Pipeline	Pipeline	
X											
		X			X	X		X	2,110,304	36,897	
X	X	X	X	X	X	X	X	X	345,400	8,058	
X	X	X						X	227,000	3,450	
X											
						X		X			
X	X								14,660	750	
X		X			X				5,535,000	89,000	
X		X							3,978,000	115,400	
X					X	X		X	152,570	2,683	

Appendix III
Hydropower Projects From Which the PMAs
Market Power

^aAccording to DOE, hydropower facilities routinely operate at levels that exceed nameplate capacity. Nameplate capacity is the rating of a generator under specified conditions as designated by the manufacturer.

^bOther authorized purposes include reregulation, water conservation, and low-flow augmentation.

^cTotal reservoir storage at highest controlled water surface.

^dWater surface at total storage.

^eFour additional units at the Richard B. Russell project are being tested.

^fThe Stonewell Jackson project has a single 300-kilowatt station service unit; excess power is marketed by Southeastern.

^gThe Harry S. Truman project has six units installed, and four are commercially operable. The remaining units are scheduled to return to service by July 1997 and December 1998, respectively.

^hSpring Creek uses the Whiskeytown Reservoir as a forebay. Spring Creek Debris Dam has no powerplant. A forebay is a reservoir from which water is taken to run equipment, such as a turbine.

ⁱHeart Mountain, Shoshone, and Spirit Mountain are supplied from the Buffalo Bill Reservoir.

^jPrimarily used as station service for Lewiston Fish Hatchery.

^kThe International Boundary and Water Commission (IBWC) operates the Falcon and Amistad projects, which are international storage projects located on the Rio Grande River between Texas and Mexico. The power output is divided evenly between the United States and Mexico.

^lU.S. share (50 percent) of plant capacity.

^mOperated by the Provo River Water Users' Association (PRWUA) for the Bureau.

Source: U. S. Army Corps of Engineers, Bureau of Reclamation, and Western Area Power Administration.

Contracts of the Southeastern Power Administration and the Corps of Engineers in Southeastern's Service Area

Contract	Number	Term	Notes
Sale of power to preference customers	269	127 contracts with customers served through Southern Company, Municipal Electric Authority of Georgia, Oglethorpe Power Corporation, South Carolina Electric and Gas, and South Carolina Public Service Authority transmission lines are 20-year contracts that become evergreen (self-renewing) with 2-year cancellation notices. 85 customers served through Virginia Power Company, Appalachian Power Company, Carolina Power and Light Company, and Florida Power Corporation transmission lines have evergreen contracts with cancellation notices ranging from 60 days to 3 years. 45 contracts with customers served through Duke Power Company transmission lines are being renegotiated. 12 preference customers served by Kentucky Utilities Company have 20-year contracts that become evergreen with 3-year cancellation notices.	Southeastern has allocated power to 303 preference customers or to entities directly serving preference customers. 269 customers have individual contracts with Southeastern and rely on Southeastern to arrange transmission. Other customers provide their own transmission or receive their allocations through cooperatives or associations that act as agents for the customers.
Sale of power to preference customers that provide transmission services	8	Contract with South Carolina Public Service Authority is an evergreen contract with a cancellation notice of 60 days for Southeastern and 90 days for the authority. The Tennessee Valley Authority (TVA) has an evergreen contract with a 3-year cancellation notice. Contracts with Alabama Electric Cooperative, South Mississippi Electric Power Association, East Kentucky Power Cooperative, Southern Illinois Power Cooperative, Dalton (Georgia), and Henderson (Kentucky) are 20-year contracts that become evergreen with 2- or 3-year cancellation notices.	Customers buy Southeastern power for their own use or for distribution to their retail customers and transmit power over their own lines or arrange transmission over another utility's lines. TVA provides both transmission and ancillary services; the others provide only transmission.

(continued)

Appendix IV
Contracts of the Southeastern Power
Administration and the Corps of Engineers
in Southeastern's Service Area

Contract	Number	Term	Notes
Sale of power to entities that act as agents for preference customers	5	Contracts with Big Rivers Electric Corporation, South Mississippi Power Association, Municipal Energy Agency of Mississippi, and Central Electric Power Cooperative (2 contracts) are 20-year contracts that become evergreen with 2- or 3-year cancellation notices.	Southeastern does not have individual contracts with the 36 preference customers represented by these agents.
Sale of power to nonpreference customers	2	Florida Power Corporation has an evergreen contract with a 2-year cancellation notice. Monongahela Power Company has a 10-year (minimum) contract that becomes evergreen in 2004 with a 2-year cancellation notice.	These contracts are for the sale of excess power from the Woodruff and Stonewall Jackson projects.
Transmission and ancillary services	7	Contract with the Southern Company, renegotiated in 1996, is a 10-year contract that becomes evergreen with a 2-year cancellation notice. Contracts with Virginia Power Company, Appalachian Power Company, South Carolina Electric and Gas, and Carolina Power and Light Company are evergreen with cancellation notices ranging from 1 to 3 years. Contract with Duke Power Company is being renegotiated.	This contract contains an assignability clause that requires FERC's approval of any sale, assignment, or transfer of the contract. Carolina Power and Light Company has two contracts.
Transmission services only	2	Contracts with Oglethorpe Power Corporation and Municipal Electric Authority of Georgia are 20-year contracts that become evergreen with 2-year cancellation notices.	These contracts do not include ancillary services.
Rehabilitation of power plants	17	Terms vary from 1996 to 2003, depending on the power plant.	These are current and planned contracts between the Corps of Engineers and contractors to rehabilitate six power plants at an estimated cost of about \$201 million.
Water supply contracts	26	Terms vary	These entities have contracts with the Corps of Engineers to purchase water from federal reservoirs.
Total	336		

Source: Southeastern Power Administration and U.S. Army Corps of Engineers.

In addition, Southeastern and the Corps have the following arrangements:

- On December 31, 1996, Southeastern and Kentucky Utilities Company executed a new contract for power sold to 12 municipal customers in the Kentucky Utilities system. This is a 10-year contract that turns evergreen after June 30, 2007, with a 3-year cancellation notice requirement.
- Southeastern buys power to operate various pumpback units at the Corps' hydropower plants.
- Southeastern has net billing arrangements with Florida Power Corporation, Alabama Electric Cooperative, South Carolina Public Service Authority, and TVA, whereby Southeastern "nets" the costs of purchase power from power sales.
- Southeastern's contract with TVA includes a capacity interruption credit arrangement. If Southeastern cannot meet its capacity requirements, it gives TVA a credit for the capacity not available.
- Southeastern has Memorandums of Understanding (MOU) which serve as operating agreements with the Corps and TVA.
- The Corps has 5,194 outgrants including easements for roads and utilities, public park leases, agricultural leases, commercial concession leases, fish and wildlife management licenses, and various personnel privileges.
- The Corps has issued thousands of land-use permits as part of its Shoreline Management Program, including private and community dock permits as well as land activity permits.

Illustrative Contractual Obligations and Agreements: Bureau of Reclamation, Great Plains Region, Billings, Montana

Area office	Type of contract	Number	Term	Notes
Eastern Colorado	Power contracts	25	Variable	With water users (including reclamation projects and Native Americans) for project pumping
		580	Variable	Agricultural leases and permits for buildings, buffers, crops, drainage, weed control, etc.
		57	Variable	With other federal and state agencies for such things as recreation and reservoir operations
	Water service and repayment contracts	65	Water service - 40 years Distribution - in perpetuity	Provide water supplies and distribution services, and repayment of the federal investment
	Temporary water service contracts	32	1 to 5 years	Short-term water supplies for such purposes as dust abatement, emergencies, and road construction
	Subtotal	759		
Montana	Cabin permits	265	5 years and more	With nonfederal parties for in-holdings on Bureau lands
	Concession contracts	3	10 years and more	
	Garbage contracts	2	Annual	
	Law enforcement agreements	2	5 years, renewable subject to budget availability	
	Road maintenance contract	1	Indefinite	
	Memorandum of Understanding (MOU) with the Bureau of Land Management for management assistance	1	Indefinite	
	MOU with the Montana Department of Fish, Wildlife, and Parks for management of wildlife area	1	Indefinite	
	Cooperative management agreement with National Park Service for joint government camping area	1	Indefinite	

(continued)

Appendix V
Illustrative Contractual Obligations and
Agreements: Bureau of Reclamation, Great
Plains Region, Billings, Montana

Area office	Type of contract	Number	Term	Notes
	Water service and repayment contracts	13	Water service - 40 years Distribution - in perpetuity	
	Temporary water service contracts	61	1 year	
	Subtotal	350		
Wyoming	Permits and agreements	1,013	Variable	Includes leases; interagency agreements for recreation, game, and fish; and permits for cabins
	Temporary water service contracts	20	1 year	
	Water service and repayment contracts	68	Water service - 40 years Distribution - in perpetuity	
	Subtotal	1,101		
Total		2,210		

Source: The Bureau of Reclamation's Great Plains Region, Billings, Montana.

Comments From the Department of Energy

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



Department of Energy
Power Marketing Liaison Office
Washington, DC 20585

February 18, 1997

Victor S. Rezendes
Director, Energy, Resources, and
Science Issues
Resources, Community, and
Economic Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Rezendes:

This letter serves as the United States Department of Energy's comments on your draft report Federal Power: Issues Related to the Divestiture of Federal Hydropower Resources (GAO/RCED-97-48, Code 307341). We appreciate the opportunity to review and comment on this draft report before it is released in final form.

The comments in this letter reflect the views of the Southeastern Power Administration, Southwestern Power Administration, and the Western Area Power Administration. We have limited our comments in this letter to the most important policy issues raised by the draft report. In the enclosure, we are also providing you with comments and suggestions of a more technical or editorial nature.

We recognize that your staff has expended considerable effort to become knowledgeable about Federal hydropower and related divestiture impacts. We thank them for their efforts to present this complex issue in an understandable manner.

Our comments below cover certain key issues that we believe deserve additional treatment, or at least a mention, in the final report. We hope the final report emphasizes that it is only a "primer" on the topic of Federal hydropower divestiture, not an exhaustive analysis, and that many additional details were, of necessity, omitted.

In general, we recognize that the draft report attempts to strike a reasonable balance between the two opposing viewpoints on Federal hydropower asset divestiture. In several sections of the draft, we believe a fair balance was achieved. In other sections, we feel it did not achieve balance, and have commented accordingly.

The following are our policy comments:

Balance is Needed in the Presentation of Divestiture Positions. On pages 42-46 of the draft report there are four pages describing the arguments of the proponents of divesting Federal hydropower assets. These pages are followed by only two-thirds of one page (on page 47) describing the position of the opponents of PMA privatization. Yet, opponents of PMA privatization could easily present four pages on why they believe PMA divestiture is bad public policy.

The report cites other countries' privatization activities, but fails to report that the privatization experience overseas has received some unfavorable reviews. For example, privatization of the electric grid in Great Britain has resulted in consumer complaints about rate increases, monopoly cartels, blackouts, and large salaries for executives.

On pages 45-46 in the draft report, representatives of the Edison Electric Institute (EEI) are cited without presenting the views of the American Public Power Association and/or the National Rural Electric Cooperative Association on the same topic. On page 74, EEI is again referenced by name, while the opposite point of view comes from "representatives of the PMAs and their preference customers." To the extent EEI is cited as an authority, the same courtesy should be extended to the trade associations on the other side of the issue.

The draft report includes footnote references to another GAO report POWER MARKETING ADMINISTRATIONS: Cost Recovery, Financing, and Comparison to Nonfederal Utilities (GAO/AIMD-96-145). However, the draft report fails to mention that the PMAs had serious concerns about various findings in that earlier report. These concerns are presented in the agency comments section on pages 91-98 of that report. Referencing the report's findings without noting the PMAs' objections seems one-sided.

These imbalances need to be corrected if the final report is to be viewed as even-handed and unbiased.

Existence of "Winners" and "Losers" Should be Pointed Out. Until a specific divestiture plan is presented for evaluation, it will be impossible to quantify how much various groups will be helped and hurt by the privatization of Federal hydropower assets. Nevertheless, as the report addresses some of the issues involved in privatization, we believe it would be possible and desirable for some discussion of who the beneficiaries of a given privatization approach would be, and who would likely be harmed. It is highly unlikely that a "win-win" situation exists that would make all taxpayers and all power customers better off. Congressional representatives will want to know who are the "winners" and "losers", if they choose to address this complex issue.

In particular, there will be a trade-off between rate impacts to existing PMA customers and the revenue gains to the U.S. Treasury from divestiture. The final report should cover this as part of

its discussion. This discussion should also include the impacts to Federal facilities (and their budgets) that currently receive power directly from the PMAs. For example, the Western Area Power Administration's revenues from Federal facilities totaled \$55 million in FY 1994. If PMA rates are about one-half the rates offered by other utilities, as the draft report states, then these purchasing agencies will need to double their appropriations for power expenses if their rates go to market levels after divestiture. These additional costs should be an offset against net sale proceeds. The report should also include the impacts of divestiture on transmission-dependent PMA customers.

See comment 3.

PMA Roles Beyond Power Sales Need Greater Emphasis. The draft report focuses on the PMAs' roles as marketers of Federal power. While this is the primary mission of all three PMAs, Southwestern and Western Area Power Administrations provide additional transmission services to the electric power industry in their regions. It has even been suggested that the Federal transmission system -- not the Federal power that is sold over it -- is the more valuable asset in this era of utility deregulation. We believe the final report would benefit from greater attention to how these PMA functions would be addressed by divestiture.

See comment 4.

PMA Divestiture is Part of a Larger, On-going Debate About Public versus Private Ownership of the Electric Utility Industry. The issue of PMA divestiture is part of a long-term policy debate about ownership of the electric utility industry. Since the industry first evolved in the late nineteenth century, there has been an issue of whether electric service is best provided by investor-owned companies or not-for-profit public bodies. Federal hydropower, which by law is offered first to publicly-owned utilities, is an important support to the public power side of this debate. Therefore, whether and how the PMAs are privatized will affect the outcome of this on-going public policy issue. The final report should not fail to discuss the impact of PMA divestiture on this question.

See comment 5.

Asset Maintenance Problem is Overstated. On page 43, the draft report states that GAO recently testified that Federal agencies cannot fulfill operation, maintenance, and repair functions adequately, with a footnote to GAO testimony given in July, 1996. We are unaware of any evidence that transmission system assets have not been adequately maintained. In fact, Southwestern Power Administration and Western Area Power Administration regularly exceed the North American Electric Reliability Council's area control error criteria for transmission system reliability. Moreover, the GAO testimony addressed only Army Corps of Engineer projects in the Southeast, not all generating agency assets. Hence, we object to the statement in the draft report that implies GAO has found maintenance problems in all regions and among all features of Federal hydropower resources.

See comment 6.

Additional Lessons Can Be Learned from the Divestiture of the Alaska Power Administration. To its credit, the draft report's Executive Summary begins with a reference to the difficulties the

Federal government has experienced -- and is continuing to experience -- in attempting to privatize the Alaska Power Administration (APA). We believe that the report can draw more lessons from this experience. For example, the APA experience suggests that the condition of Federal assets will be a contentious issue that requires careful negotiations if the Federal government is to avoid open-ended Federal obligations on the facilities, with associated costs. APA's experience with lands issues and transmission line rights-of-way should also be studied.

APA -- with its two power plants and 89 miles of transmission line, all within one state, and operated by the agency for the sole purpose of generating hydropower, would seem comparatively straightforward to divest. Yet it has been ten years since APA divestiture was first formally proposed, and it is still not completed. This experience should be considered in the final report for what it suggests about the complexity and associated time requirements for divesting one of the larger PMAs.

FERC's Experience With Multipurpose Dams May Not Be Comparable. On page 59, the draft report cites FERC officials pointing out that they have experience regulating multipurpose dams. While this is true, we believe that dams requiring FERC licenses generally have hydropower as their primary function, whereas Federal multipurpose-project dams generally do not have hydropower as their main function. Indeed, Federal hydropower is often an explicitly lower-priority purpose by law. This may make FERC's regulatory experience less applicable than it first appears.

Transmission Line Easements, Rights-of-Way, and Land Issues in General Deserve Greater Emphasis. The sufficiency and transferability of land and land rights can be an extremely difficult issue to resolve in divesting Federal assets. This is particularly true for PMA rights-of-way across land owned by other agencies of the Federal government, such as the Bureau of Land Management, Forest Service, and Fish and Wildlife Service. Many of these rights are in perpetuity and are nontransferable. Nearly one-third of Western Area Power Administration's 17,000 miles of transmission line fall into this category.

In addition, most of Western Area Power Administration's rights-of-way were acquired with contract language stating that the rights return to the original landowner upon non-use by the Federal government. Many transmission lines have no perfected access outside the transmission line easement. Resolution of these issues will be complicated, time consuming, and expensive. These issues need attention in the final report.

Indian Issues Section Needs to be Expanded to Address Rights-of-Way Issues and Trust Responsibilities. The impact of divestiture on Indian lands needs to be added to the draft report's discussion of Native American issues. The PMAs believe Indian land issues, in particular, are major obstacles to divestiture and need much greater attention in the draft report. As sovereign entities, Indian tribes have great control over their tribal lands. In the case of Western Area

Power Administration, 880 miles of transmission line are on rights-of-way granted by the Tribes. At a minimum, the Tribes will expect additional compensation to transfer rights-of-way across their lands, if they agree to it at all.

Moreover, Western Area Power Administration also has Indian tribes and tribal authorities as power customers. If new owners of the PMA assets raise rates to Indian customers, or sell power to other customers instead of the Tribes, the financial impacts to the Tribes and their members could be severe. Whether this would require some sort of mitigating assistance -- and who would pay for it -- is another topic requiring examination.

Low Rates for PMA Power Are Not Contractually Guaranteed. In Fact, Rates Aren't Low for Certain Projects or in All Years. There are certain places in the draft report (pages 11, 61-62) that state that the PMAs are contractually obligated to sell power at low rates. This is incorrect. The PMAs are obligated by law to sell power at "... at the lowest possible rates to consumers consistent with sound business principles,..." (Flood Control Act of 1944). This has been interpreted to mean the lowest possible, ~~cost-based~~ rates. For many PMA rate setting systems, cost-based rates currently result in lower rates than those of other utilities. However, lower rates are not guaranteed and, in fact, historical and present-day examples can be cited of PMA rates that are not low. For example, Southwestern Power Administration's unit rates can vary between 1.2 and 2.8 cents per kilowatt-hour in any given year, depending on the amount of water available for generation. It is important that the final report make clear that there is no legal or contractual mandate requiring PMA power rates to be lower than any other utilities' rates.

Divestiture May Require Environmental (NEPA) Compliance. In the absence of a new law granting waivers, divestiture of PMA assets may require completion of Environmental Impact Statements (EISs). Such EISs could add significantly to the time and cost required to implement an asset divestiture action. The final report should place greater emphasis on the Federal government's environmental compliance requirements associated with asset divestiture.

"Stranded" Federal Hydropower Investments Should be Addressed. The draft report should note that there are certain Federal hydropower investments that may not be able to produce power at or below the market price for wholesale electricity once retail competition comes to the electric utility industry. In the debate over utility deregulation, such assets are called "stranded investments". Depending on how Federal assets are grouped for divestiture purposes, it is possible that certain newer investments, such as the Richard B. Russell Project's pump-generators, may become "stranded" as buyers "cherry pick" the most valuable assets. The report should note that any divestiture legislation must address how these assets will be treated.

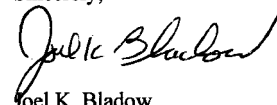
Treatment of Federal Employees Affected by Divestiture Should Be Covered. The draft report is silent on the treatment of Federal employees if hydropower assets are divested. Will the

Congress include any provisions to assist displaced Federal employees, or expect the purchasers to do so, in divestiture legislation? In our opinion, this topic deserves more treatment in the final report. To the extent the Federal government incurs costs associated with layoffs, these costs should also be counted against the proceeds of a sale.

Divestiture Issues will Evolve as the Electric Utility Industry Restructures. It is important to note that the electric utility industry is entering a period of great change as it responds to deregulation and competitive market forces. The PMAs are a part of this industry and will be affected by these sweeping changes. Hence, the findings of this report may no longer be relevant as the PMAs adapt to changes in the utility environment in which they operate.

Thank you for the opportunity to provide these comments.

Sincerely,



Joel K. Bladow
Assistant Administrator
for Power Marketing Liaison

Enclosure

See comment 14.

The following are GAO's comments on DOE's letter dated February 18, 1997.

1. We believe that our presentation of positions regarding divestitures is balanced. In forming this discussion, we contacted organizations that favored (for example, the Edison Electric Institute) and that opposed (for example, the American Public Power Association) the divestiture of federal hydropower assets. In our study, we used statements and publications from both proponents and opponents of divestiture of these assets. Our purpose in including international experiences with divestitures was to focus on some important, common factors that have motivated divestitures, instead of examining the outcomes of divestitures in specific nations or of specific enterprises.
2. We agree with DOE that an evaluation of divestiture impacts on various groups as well as on the U.S. Treasury should be an integral part of any debate of the pros and cons of divesting federal hydropower assets. However, we did not revise the report based on this comment. As agreed with the congressional requestors and as noted in chapter 1, the purpose of this report was to discuss issues that need to be addressed, if and when a decision is made to divest the federal hydropower assets. The evaluation of whether or not these assets should be privatized and the discussion of the specific benefits and costs of such a divestiture were outside the scope of our review.
3. We agree that the federal transmission system is a valuable asset now and would be in the event of a divestiture. However, the report already contains information regarding the PMAS' transmission assets and services to regional utilities. In addition, as suggested by DOE, we expanded chapter 4 to address, among other things, Western's investment in the California-Oregon Transmission Project and the Pacific Northwest-Southwest Intertie as well as Western's important contract with the Pacific Gas and Electric Company for transmission services and peaking and firming power.
4. DOE states that proposed divestitures of federal hydropower assets are part of a larger, ongoing debate about the role of public power in a changing electric utility industry. DOE believes that our report should address the impact of a divestiture on this ongoing debate. We did not revise the report because such an evaluation was beyond the scope of our review.

5. We revised chapter 3 to reflect DOE's statement that problems in maintaining and repairing federal hydropower assets were experienced in the Southeast, but perhaps not elsewhere. The report was also revised to state that the availability of the Corps of Engineers' hydropower plants in the Southeast has improved.

6. Although DOE agrees with the report that the delays the government has experienced in divesting the Alaska Power Administration illustrate the problems that could be encountered in divesting the other, larger, PMAS, DOE suggests that we should "draw more lessons from this experience." However, in our view, the executive summary and chapter 1 of this report draw sufficient lessons from the Alaska experience. In addition, large sections of this report, particularly in chapter 4, illustrate many problems that could affect the divestiture of the remaining PMAS.

7. According to DOE, nonfederal water projects regulated by FERC may not be comparable to federal ones, because federal multipurpose water projects generally do not have hydropower generation as their main purpose whereas nonfederal projects do. However, we did not revise the report because FERC officials noted that (1) nonfederal water projects, like federal ones, have widespread impacts upstream and downstream and serve a variety of purposes and (2) the FERC license accommodates purposes that include hydropower as well as such others as fish and wildlife habitat enhancement, recreation, and water quality improvement. According to FERC officials, because federal water projects are sufficiently comparable to nonfederal ones, FERC's licensing process could successfully accommodate the purposes of federal projects.

8. DOE suggests that resolution of transmission line easements, rights-of-way, and land issues deserves greater emphasis, particularly in cases where PMA transmission lines cross the lands owned by other federal agencies (many of these rights are in perpetuity and nontransferable) and private owners (many of these rights will revert to the original landowner). However, we believe that our report, in chapter 4 and in appendix IV adequately addressed the issue highlighted by DOE. In addition, chapter 4 has been revised in response to comments from DOE to reflect the importance of addressing the transferability of transmission line rights-of-way across the lands of Native American tribal entities.

9. We agree that the section on Native American rights and concerns should be expanded to address rights-of-way across lands of Native American tribal entities. We have revised chapter 4 accordingly.

10. We agree that the report should be revised to clarify (1) the basis for setting the PMAs' rates and (2) that rates are not low for some projects and can vary during the year. We have made appropriate revisions to the executive summary, chapter 2, and chapter 4.

11. We agree that the report should be revised to note that the divestiture of a PMA's assets could require an environmental impact statement to comply with the National Environmental Policy Act. Therefore, we have revised chapter 4.

12. DOE notes that certain federal hydropower assets could become "stranded" once retail competition arrives because they would be unable to produce power at competitive market rates. In response, buyers could choose to bid on other, more valuable assets ("cherry-picking"), thereby leaving the government with less competitive, less valuable assets. DOE adds that the cherry-picking of valuable assets could be minimized by the way assets could be grouped for sale. We agree that some federal hydropower assets could be "stranded" and difficult to sell. The price that a prospective buyer would be willing to pay might not be determined by the book value of an asset. Rather, the price a buyer would be willing to pay would depend on a variety of factors, such as the price at which the power could be sold under given market conditions. We disagree that by grouping federal hydropower assets for sale in a certain way, the government would likely obtain a higher price. Though the grouping of assets would be important (as discussed in chapter 3), we disagree that the underlying value of these assets could be fundamentally altered and raised to the book value by merely packaging the assets for sale in a certain way.

13. DOE said our report is silent on the treatment of federal employees after a divestiture; however, chapter 3 states that a variety of labor-related issues would need to be considered in the event of a divestiture, including the possibility of severance packages. It also notes that the costs of these issues would need to be considered to assess the impact on the government of a divestiture.

14. Because we agree that the impact of increased deregulation and restructuring on potential divestitures should be recognized, we revised the executive summary and chapter 4.

Comments From the Department of the Interior

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

FEB 20 1997

Mr. Victor S. Rezendes
Director, Energy, Resources,
and Science Issues
General Accounting Office
441 G Street NW.
Washington, D.C. 20548

Dear Mr. Rezendes:

Enclosed are comments on the draft General Accounting Office report entitled "Issues Related to the Divestiture of Federal Hydropower Resources," (GAO/RCED-97-48).

We appreciate the opportunity to review the draft report and to comment on the subject matter. However, with the very short review time dictated by your publication deadline, we are unable to provide the comprehensive review that such a complex and broad subject deserves.

The report has presented a profile of the Power Marketing Administrations (PMAs) under study as a means of assisting in the decision making process relative to PMA divestiture. However, we have provided a number of both general and specific comments that are intended to clarify further a number of important points that are made or that need to be made. They are intended to characterize more clearly the respective roles and relationship between the Bureau of Reclamation and the PMAs, and to help provide the Congress with a clearer understanding of the issues related to PMA divestiture as they impact the Bureau of Reclamation in carrying out its water resources management responsibilities.

We hope you will find the enclosed comments to be of assistance, and we would be pleased to provide further information or clarification on any of the comments provided.

Sincerely,

Patricia J. Beneke
Assistant Secretary
for Water and Science

Enclosures

cc: Mr. J. M. Shafer, Administrator

Bureau of Reclamation
Comments on Draft GAO Report

**Issues Related to the Divestiture
of Federal Hydropower Resources**
GAO/RCED 97-48

General Comments

1. The report identifies some of the issues that will need to be addressed during any consideration of legislation to privatize the Federal Power Marketing Administrations (PMAs). The executive summary needs to better identify which assets are being considered for sale. It does not distinguish between the transmission assets -- owned and operated by the PMAs -- and the power generation assets which are owned and operated by the Bureau of Reclamation (Reclamation) and the Army Corps of Engineers (Corps). It is important for the readers to understand that adding the generation assets in any divestiture adds a layer of complexity. This subject is addressed in the body of the report, but it is a key point that needs to be mentioned in the executive summary. Adding the generation facilities greatly increases the number of difficult issues to address in the transfer, such as coordinating integrated facilities and managing the competing demands on these multipurpose facilities.
2. One of the most misunderstood aspects of the PMAs is the fact that they do not generate electricity, but they provide for the transmission and marketing of power generated at Federal facilities owned and operated by other agencies. Furthermore, the electricity marketed by the PMAs is power that is surplus to the operational needs of Reclamation and the Corps. This point needs to be more clearly conveyed throughout the report.
3. The executive summary needs to mention that both Reclamation and the Corps have preexisting and long-term contractual obligations for water delivery that take precedence over power deliveries. These arrangements will significantly impact the value of the assets. This issue is discussed in the report, and it should also be cited in the executive summary.
4. Depending on the terms of any privatization, there could be competition between power and water users for both the timing and quantities of deliveries. This competition could become a particular concern during times of drought. Also, the report does not address the interstate responsibilities such as the Colorado River compact and international water delivery requirements and the implications of privatization on the ability to comply with interstate and international obligations.
5. The report discusses Native American issues but stops short of explaining what these issues might mean in a divestiture situation. It needs to be clearly indicated that the Secretary of Interior has a Trust responsibility to the Native American Tribes which cannot be transferred as part of a divestiture.
6. The report needs to be clarified regarding the irrigation assistance provided by the power customers for the repayment obligation that is beyond the irrigators' "ability-to-pay." This is a substantial obligation that must be addressed in consideration of any PMA divestiture.

proposal.

7. The report needs to more clearly define the role of revolving funds, such as that associated with the Colorado River Storage Project (CRSP). In these revolving funds, hydropower revenues from certain facilities within the system accrue, and the water management agencies expend them for a variety of operational, capital repayment and resource management purposes as directed by law. Any proposal to divest the PMAs, whether it includes the generation assets or not, must address these funds.

8. Very little attention is paid to current deregulation or restructuring of the electric utility industry and the cumulative effects on customers as it relates to the divestiture of the PMAs. The report needs to provide a more thorough discussion on this topic.

The following are GAO's comments on Interior's letter dated February 20, 1997.

1. We agree with Interior about the importance of identifying the assets that would be considered for sale—for example, the hydropower-generating assets that are owned by the Bureau and the Corps. We also agree that the existence of these assets would make a divestiture more complex by adding such issues as how to coordinate integrated facilities and manage the competing demands on these multipurpose facilities. Therefore, we have added text in the executive summary explaining that the PMAs own the right to market electricity as well as the transmission lines (except for Southeastern), while the Bureau and the Corps own the hydropower generation assets. Our report already explains some of the complexities involved in divesting only the PMA; the PMA and the Bureau's and the Corps' hydropower-generating assets; and the PMA, the hydropower-generating assets, and the remaining assets of the federal water projects (e.g., dams and reservoirs).
2. We agree that the PMAs do not generate electricity but only transmit and market the electricity generated by hydropower plants that are owned and operated by other agencies (i.e., the Bureau and the Corps). As stated in our response for comment 1, we have clarified this point in the executive summary. Regarding the Bureau's point that PMA electricity is "surplus," we have revised both the executive summary and chapter 1 to state that the generation of hydropower by the Bureau and the Corps and the sale of this electricity by the PMAs is affected by the availability and use of water for the other purposes of federal water projects. We addressed the laws describing the agencies' use of electricity for project purposes in a footnote to chapter 1.
3. We did not revise the executive summary as suggested by Interior to mention that both the Bureau and the Corps have preexisting and long-term contractual obligations for water delivery that take precedence over hydropower purposes. Preexisting contractual obligations are already discussed as a separate issue in the executive summary and in chapter 4. In addition, water delivered for municipal and industrial water uses as well as for irrigation—contained in preexisting long-term contracts—are also mentioned in the executive summary and in chapter 4 as issues that would need to be considered in the event of a divestiture of federal hydropower assets.

4. Because we agree with Interior that the role of the Bureau and the Corps in balancing water among federal water project purposes becomes especially significant during a drought, we revised chapter 4. In addition, we agree that a divestiture would need to consider interstate water compacts and international requirements for water deliveries. We added a footnote to chapter 4 to recognize this comment.

5. We revised the executive summary and chapter 4 as suggested by Interior to expand on the rights and concerns of Native Americans as well as the Secretary of the Interior's trust responsibility.

6. We disagree with Interior's comment that the report needs to be clarified regarding irrigation assistance because the report addresses irrigation assistance adequately. For example, the executive summary clearly discusses the issue and states that the \$1.5 billion federal investment in irrigation facilities is scheduled to be recovered through power revenues.

7. Although Interior suggests that our report should more clearly address the issue of revolving funds, we did not make substantive revisions in this regard. The issue of revolving funds is a complex one that merits its own review—in particular, the budgetary treatment of these funds after a divestiture. However, we added a footnote in chapter 3 to recognize the existence of these funds.

8. Similar to DOE's comment number 14, the Bureau states that our report pays insufficient attention to the current deregulation and restructuring of the electric utility industry and its impact on customers as it relates to a potential divestiture. We revised our report in both the executive summary and in chapter 4 to address the Bureau's comment about these changes in the electric utility industry.

Comments From the Federal Energy Regulatory Commission

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426

OFFICE OF THE CHAIR

February 24, 1997

Mr. Victor S. Rezendes
Director
Energy, Resources, and Science Issues
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Rezendes:

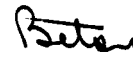
Thank you for your letter of February 3, 1997, requesting the Commission's Comments on your draft report Issues Related to the Divestiture of Federal Hydropower Resources. I am pleased to assist you in this endeavor. The Commission staff's comments are enclosed for your consideration.

I am also enclosing a copy of testimony on this subject that I gave to the House Subcommittee on Energy and Power on July 19, 1995. It addresses two important issues that are not discussed in detail in your report. In my view, any legislation on this issue must ensure that Power Marketing Administration systems are subject to open access transmission requirements and that it is clear who is responsible for regulating their hydroelectric generating facilities.

If I can be of further assistance in this or any other Commission matter, please let me know.

With best wishes,

Sincerely,



Elizabeth A. Moler
Chair

Enclosures

Issues Related
to the Divestiture of Federal Hydropower Resources

Comments of the Federal Energy Regulatory Commission Staff

The draft report provides an excellent overview of the matters that would need to be addressed in a divestiture of federal hydroelectric assets. The discussion of the Commission's regulatory activities with respect to PMA rates and hydroelectric licensing responsibilities and activities is generally correct. There are a few matters, noted below, where clarification may be helpful.

Chapter 1 indicates that the Commission's licensing and regulatory activities are intended to, among other things, help ensure that licensed hydropower projects have positive economic returns. While economic factors are considered in licensing and other contexts, the Commission does not seek to ensure that licensed projects are profitable for the licensee. Rather, the Commission establishes the conditions under which a project must be operated consistent with legal and policy requirements. The licensee must determine whether it wishes to operate the project subject to these conditions, or to take other appropriate action.

The discussion in Chapter 3 appears to indicate that, unless divestiture included the dam and reservoir (and, presumably, the right to control flows), the responsibility for environmental mitigation would remain with the federal government. It is likely there would be instances where divestiture of assets other than the dam and reservoir would result in a licensee incurring mitigation or enhancement requirements related to the environment or other public interest considerations. For instance, to the extent a purchaser controlled operation of the powerhouse, its actions could have an effect on aquatic resources. Thus, it might be appropriate to impose constraints on the operation of the powerhouse beyond those required by the federal agency controlling the dam and reservoir, such as a requirement to cease generation during periods of low flows or hot weather to protect temperature and dissolved oxygen levels. Similarly, a licensee might be required to provide recreational facilities not currently provided by the federal operator of the dam.

Chapter 3's discussion of the objective of reducing or eliminating the federal presence from the electricity markets should be clarified with respect to the provisions of the Energy Policy Act of 1992 and the Commission's recent actions with respect to transmission access. The Energy Policy Act broadened the Commission's authority to require utilities, on a case-by-case

basis, to provide transmission services to utility customers applying to the Commission for an order requiring such service. The transmission access requirements of Commission Order No. 888 are based on other provisions of the Federal Power Act and are more broad. Under the requirements of Order No. 888, eligible wholesale customers are not required to seek access on a case-by-case basis, but can obtain transmission services from utilities, thus enabling them to shop for power from a variety of competing suppliers.

It is stated in Chapter 4 that federal operating agencies have more flexibility to accommodate emerging issues, such as new environmental restrictions, than is the case in the Commission's licensing process, because that process is quasi-judicial and can be lengthy. The Commission's limited flexibility in licensing stems primarily from the presence of mandatory conditioning authority of other federal and state agencies, such as under section 401 of the Clean Water Act, the Coastal Zone Management Act, and sections 4(e) and 18 of the Federal Power Act. The timing of Commission action on licensing can also be constrained by the timing of agencies with such authority.

During the term of the license, there are fewer such constraints. Each year the Commission issues hundreds of license amendments incorporating changes in project facilities and operations. These amendments reflect changing environmental and other requirements over time. They range from minor amendments to recreational or other management plans to major redevelopment proposals.

Also, in both the licensing and post-licensing contexts, the Commission's practice is to foster settlements among the various parties. A recent example is the successful conclusion of settlement discussions among resources agencies, the City of San Francisco, and the Turlock and Modesto Irrigation Districts involving competing uses of water from the New Don Pedro reservoir in California. This resulted in significant changes in project operations to balance competing uses of water for consumptive uses and for instream flows to protect threatened and endangered fish.

Finally, in the portion of Chapter 4 dealing with the effect of divestiture on wholesale power rates among preference customers, it should be noted that purchasers of PMA assets that are subject to Commission regulation would be permitted to charge market-based rates only upon authorization from the Commission, as provided in the Commission's Order No. 888.

The following are GAO's comments on the letter of the Federal Energy Regulatory Commission (FERC), dated February 24, 1997:

In its comments, FERC stated that the report provided an "excellent overview of the matters that would need to be addressed" in divesting the federal hydropower assets. FERC also provided a number of clarifications. We agreed with all of those clarifications and incorporated all of them into our report. For example, in response to FERC's comments, we added a footnote in chapter 3 to explain how the PMAS could be affected by FERC's open transmission access order (Order 888). Furthermore, we clarified in chapter 4 that FERC's limited flexibility in licensing hydropower projects, as described in the report, stems from the authority of other federal and state agencies to attach mandatory conditions to a FERC license.

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