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# POWER MARKETING ADMINISTRATIONS

# Cost Recovery, Financing, and Comparison to Nonfederal Utilities

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Mr. Chairman and Members of the Subcommittee:

Today, we are presenting testimony on a report[1] we prepared in response to a request from you and the Ranking Minority Member of the full committee. We were asked to answer specific questions about three power marketing administrations (PMA)—Southeastern, Southwestern, and Western. You asked us to determine (1) whether all power-related costs incurred through September 30, 1995, had been recovered through the PMAs' electricity rates, (2) if the financing for power-related capital projects is subsidized by the federal government and, if so, to what extent, and (3) how PMAs differ from nonfederal utilities and the impact of these differences on power production costs. We were not asked to and did not address whether any changes in PMA cost recovery practices or financing should be made.

As members of this Subcommittee know, most of the hydropower facilities involved were originally designed for other purposes in addition to producing electricity. I would like to begin my testimony by providing a brief background on the history and purpose of the power marketing administrations as well as information about their operations. I will then discuss our findings on each of the questions.

## Background on the Three PMAs

The three PMAs we studied (Southeastern, Southwestern, and Western) market primarily wholesale power in 30 states[2] produced at large, multiple-purpose water projects. Collectively, in fiscal year 1995, they had revenues of almost $1 billion. Most of the power they sell is produced at 102 hydroelectric dams built and run primarily by the U.S. Army Corps of Engineers or the Department of the Interior's Bureau of Reclamation, commonly referred to as "operating agencies." The operating agencies constructed these facilities as part of a larger effort in developing multipurpose water projects that have functions other than power generation, including flood control, irrigation, navigation, and recreation. To transmit this power, Southwestern and Western have their own transmission facilities. Southeastern relies on the transmission services of other utilities.

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

[2]The wholesale power market for all five of the PMAs, including Bonneville and Alaska, encompasses 34 states.

The three PMAs receive annual appropriations to cover operating and maintenance (O&M) expenses and, if applicable, the capital investment in transmission assets. Federal law calls for PMAs to set power rates at levels that will repay these appropriations as well as the power-related O&M and capital appropriations expended by the operating agencies generating the power. The Department of Energy's (DOE) implementing order specifies that unless otherwise prescribed by law, appropriations used for O&M expenses be recovered in the same year the expenses are incurred, but that appropriations used for capital investments (which we refer to as appropriated debt[3]) be recovered, with interest, over periods that can last up to 50 years.

At the end of fiscal year 1995, the three PMAs had about $5.4 billion of appropriated debt outstanding. In addition, Western is required to recover about $1.5 billion of capital costs related to assistance on completed irrigation facilities (which we refer to as irrigation debt), without interest, with repayment periods of up to 60 years.

Because PMAs and operating agencies generally receive financing from appropriations, Department of the Treasury checks are issued for their disbursements. Operating agencies allocate power-related costs to the PMAs for recovery. PMAs set rates to recover power-related costs, bill customers, and the resultant revenue is returned to Treasury. The chart in attachment I demonstrates the flow of appropriated funds, costs to be recovered, and how repayment is made to Treasury from the revenues collected from power customers. It also outlines the costs that have not been recovered through this process, as well as the financing subsidy, that are discussed in detail in this testimony.

## Rates Do Not Recover All Power-Related Costs

The Reclamation Project Act of 1939 and the Flood Control Act of 1944 generally require that the PMAs recover through power rates the costs of producing and marketing federal hydropower. However, these acts do not define which costs are required to be recovered. In addition, DOE's implementing Order RA 6120.2, which was issued in 1979 and last revised in 1983, excludes certain costs associated with nonoperational facilities and is not specific about recovery of others. Where the order is not specific, PMAs have interpreted it to exclude certain costs from rates. To define the full cost of power production and marketing, we referred to Office of Management and Budget (OMB) Circular A-25, "User Charges,"

[3]We call this appropriated debt because PMAs are required to repay appropriations used for capital investments, with interest. However, these reimbursable appropriations are not technically considered lending by Treasury.

industry practice, and federal accounting standards. These criteria indicate that the full cost of producing and marketing federal hydropower would include all direct and indirect costs incurred by the PMAs, operating agencies, and other agencies involved in power-related activities. We identified five main power-related costs that meet these criteria that have not yet been fully recovered through electricity rates.[4]

First, the three PMAs do not recover the full cost of power-related postretirement health benefits and Civil Service Retirement System (CSRS) pensions for current PMA and operating agency employees.[5] For fiscal year 1995, we estimate that these unrecovered costs were about $16 million for these three PMAs. The annual funding shortfall associated with CSRS pension benefits will be eliminated over time as CSRS employees leave the government and are replaced by employees covered by the Federal Employees Retirement System (FERS), for which pension benefits are fully funded. The annual funding shortfall associated with postretirement health benefits, however, will not be eliminated as a result of this transition, since it is an entirely separate benefit program. As of September 30, 1995, we estimate that the cumulative unrecovered costs associated with postretirement health benefits and CSRS pension benefits were about $436 million for these three PMAs.

Second, all three PMAs had incurred costs and/or had costs allocated to them for projects that were completed or under construction for which full costs were not being recovered. In some cases, this was because the power-generating projects had never operated as designed. In accordance with DOE guidance, PMAs set rates that exclude the costs of nonoperational parts of power projects, including capitalized interest. For example, at the Russell Project, partially on line since 1985, litigation over excessive fish kills has kept four of the eight turbines from becoming operational. As a result, about one-half of the project's construction costs have been excluded from Southeastern's rates. It is unclear whether these costs, totalling $488 million as of September 30, 1995, will be recovered if the project never operates to the capacity designed. In other cases, the tenuous financial condition of completed projects also raises questions about whether power-related costs will be recovered. For example, Western is currently selling electricity from the Washoe Project for less than 20 percent of what it costs to produce. According to Western, this

[4]We did not assess the reasonableness of the methodologies used by the operating agencies to allocate costs to power users and therefore could not determine whether these allocations result in recovery of all applicable operating agency power costs.

[5]We did not examine unrecovered costs for retired employees because relevant actuarial information was not available from the Office of Personnel Management (OPM).

situation is the result of relatively high construction costs and drought conditions. According to Western's 1995 annual report: "Based on current conditions, it is unlikely the project will be able to generate sufficient revenues to repay the Federal investment." For the same reasons, we believe that the Washoe Project is unlikely to generate sufficient revenue to repay all O&M and interest expenses.

Third, as we reported in May 1996,[6] at the Pick-Sloan Missouri Basin Program (Pick-Sloan), about $454 million of capital costs for hydropower facilities and water storage reservoirs has been allocated to authorized irrigation facilities that are infeasible and, therefore, not expected to be completed. Western is currently selling electricity to its power customers that would have been used by the irrigators had the irrigation facilities been completed. As long as the $454 million is allocated to incomplete irrigation facilities, recovery by Western will not be required. If the facilities were completed but the capital costs were determined to be beyond the irrigators' ability to repay, then Western would be required to recover most of these irrigation costs without interest. If these costs had been allocated based on the actual use of the hydropower facilities and water storage reservoirs, they would have been allocated primarily to power production and recovered, with interest, through electricity rate charges within 50 years of completion. Under the current repayment criteria, it is unlikely that Western will be required to recover the principal or any interest on these capital costs. In addition, since 1987, $13.7 million ($15.3 million in constant 1995 dollars) of power-related O&M expenses incurred by the Army Corps of Engineers at Pick-Sloan have been allocated to incomplete irrigation facilities and thus are not being recovered through power rates.

The methodology that resulted in allocating power-related capital and O&M costs to the incomplete irrigation facilities was developed decades ago in anticipation of the completion of all planned irrigation facilities. This methodology is still being used and will continue to increase these unrecovered power costs. However, as we also reported in May 1996, changing the terms of repayment to cover any of the $454 million investment would require congressional action. In addition, any changes between the program's power and irrigation purposes may also necessitate reviewing other aspects of the agreements—specifically, the agreements involving areas that accepted permanent flooding from dams in

[6]Federal Power: Recovery of Federal Investment in Hydropower Facilities in the Pick-Sloan Program (GAO/T-RCED-96-142, May 2, 1996).

anticipation of the construction of irrigation facilities that are now not likely to be constructed.

Fourth, the Central Valley Project's Shasta Dam and the Colorado River Storage Project's Glen Canyon Dam have incurred power-related environmental mitigation costs that are legislatively excluded from Western's rates. For the Shasta Dam, these costs totaled $9.7 million in 1995 and $5.4 million in 1994. For the Glen Canyon Dam, they totaled $13.9 million and $12.5 million for the same 2 years. The total cumulative legislatively excluded environmental costs for the two projects were $134.3 million ($152.5 million in constant 1995 dollars) as of September 30, 1995.

Fifth, as of September 30, 1995, Western had unrecovered O&M and interest expense payments relating to nine of its 15 projects. These "deferred payments" are to be repaid to Treasury, with interest. According to Western, these deferred payments are primarily due to drought conditions which reduced streamflow and hence the ability to generate electricity in the late 1980s and early 1990s. The balance of Western's deferred payments decreased from about $250 million as of September 30, 1994, to about $196 million as of September 30, 1995. Western officials have told us they expect to recover the majority of these costs over time.

In the aggregate, we estimate that the annual unrecovered costs for the three PMAs was about $83 million for fiscal year 1995 for the five main power-related activities identified above. As of September 30, 1995, the cumulative unrecovered power costs could be as much as $1.8 billion. Table 1 provides a summary of our estimates of these unrecovered costs.

**Table 1: Estimated Total Unrecovered Annual and Cumulative Power-Related Costs as of and for the Year Ending September 30, 1995**

Dollars in millions

| Description | Annual - 1995 | Cumulative |
|---|---|---|
| Pension and postretirement health benefits | $16.4 | $436.0 |
| Russell Project (pumping units) | | |
| Capitalized interest for fiscal year 1995 | 25.6 | |
| Construction-work-in-progress balance[a] | | 488.0 |
| Truman Project | 0.9 | 31.0 |
| Washoe Project[b] | • | 8.9 |
| Abandoned Transmission Line | | |
| Capital construction costs | | 14.5 |
| Unrecovered interest | 0.4 | 6.4 |
| Irrigation-related capital costs at Pick-Sloan | 13.6[c] | 454.0[d] |
| Deferred payments at Western | 0.8 | 195.7 |
| Irrigation-related O&M at Pick-Sloan | 2.1 | 15.3[e] |
| Environmental costs | 23.6 | 152.5[e] |
| **Total** | **$83.4** | **$1,802.3[f]** |

[a]Includes cumulative unrecovered principal and capitalized interest.

[b]Reflects the cumulative appropriated debt that might not be recovered. Annual deferred payments for O&M and interest expenses are included in the "Deferred payments at Western" line item.

[c]This amount represents unrecovered interest and was calculated based on the $454 million.

[d]The $454 million is as of September 30, 1994, because fiscal year 1995 data were not available.

[e]These amounts are converted to constant 1995 dollars to be comparable to the other cumulative dollars that are already reported in fiscal year 1995 dollars.

[f]Amounts for the Mead-Phoenix Transmission Line are not included in this estimate because it did not become operational until fiscal year 1996. However, the project's ability to fully recover costs in the future is questionable.

Source: GAO estimates based on information provided by the PMAs, operating agencies, and OPM.

## Favorable Terms Result in Subsidized Financing

Power-related capital projects are financed primarily with appropriated funds. Federal legislation and DOE policy enable PMAs to implement flexible financing terms that allow the accumulation of large amounts of appropriated debt at low interest rates. PMAs have low interest rates on appropriated debt for two primary reasons. First, DOE's policy generally requires PMAs to pay off outstanding debt with the highest interest rate first, regardless of maturity dates. (This does not apply to any appropriated debt due in a given fiscal year. Such debt must be paid first,

regardless of interest rate.) Second, prior to 1983,[7] capital projects were generally financed at interest rates lower than the then prevailing comparable Treasury interest rates. Because repayment terms on below market interest rate appropriated debt are up to 50 years, some of this debt could remain outstanding for several more decades. As shown in figure 1, for fiscal year 1995, the average interest rates on appropriated debt were 2.9 percent for Southwestern, 4.4 percent for Southeastern, and 5.5 percent for Western compared to 9.1 percent for Treasury's outstanding bond portfolio as of September 30, 1995.

[7]In 1983, DOE increased the interest rates at which new projects or replacements to old projects would be financed by modifying its Order RA 6120.2 This modification required that, in the absence of specific legislation to the contrary, new projects and additions and equipment replacements made after September 30, 1983, be financed at interest rates equal to the average yield during the preceding fiscal year on interest-bearing marketable securities of the United States, which, at the time the computation is made, have terms of 15 years or more remaining to maturity.

**Figure 1: Average Interest Rates Paid by the PMAs on Appropriated Debt Compared to Rates Paid by Treasury on Its Outstanding Bond Portfolio—Fiscal Years 1952 to 1995**

Note 1: Western was created in 1977. Pre-1977 interest rates are for appropriated debt transferred from the Bureau of Reclamation to Western in 1977. Sufficient data were not available to identify the weighted average interest rates in fiscal years 1952 to 1985 for projects in Western's service area. Western officials indicated that on a consolidated basis for all projects, 3 percent represents a reasonable weighted average interest rate on Western's appropriated debt for those years.

Note 2: Percentages shown at right represent percentages for 1995.

Sources: Data on PMAs developed by GAO from data provided by PMAs; Treasury interest rates determined based on Treasury summary information related to the public debt of the United States.

A financing subsidy exists because the interest expense incurred by Treasury on its debt is higher than the interest income Treasury receives from the PMAs for their appropriated debt. As shown in table 2, we estimate that the PMA financing subsidy for fiscal year 1995 was about $228 million.[8]

**Table 2: Estimated PMA Financing Subsidy, 1995**

| PMA | Outstanding appropriated debt (dollars in millions) | Weighted average interest rate[a] (percent) | Treasury average interest rate[b] (percent) | Financing subsidy (dollars in millions) |
|---|---|---|---|---|
| Southeastern | $1,491 | 4.4 | 9.1 | $70 |
| Southwestern | 686 | 2.9 | 9.1 | 43 |
| Western[c] | 3,184 | 5.5 | 9.1 | 115 |
| **Totals** | **$5,361** | **4.9** | **9.1** | **$228** |

[a]We calculated the weighted average interest rate for the PMAs by dividing interest costs by average appropriated debt outstanding for 1995.

[b]The 9.1 percent interest rate is the average interest rate paid on Treasury's outstanding bond portfolio at the end of fiscal year 1995.

[c]Excludes irrigation assistance to be paid by Western; includes deferred payments.

Sources: PMA audited financial statements and other data, and Treasury summary information related to the public debt of the United States.

Over the next several decades, as the pre-1983 appropriated debt is repaid, the PMAs' financing subsidy should decrease. However, as shown in figure 1, the PMAs' ability to repay high interest debt first has been a factor and likely will continue to contribute to PMA average interest rates being below the effective Treasury average interest rate. In addition, the nature of Treasury's borrowing practices contributes to the magnitude of the financing subsidy. Treasury's inability to refinance or prepay outstanding debt in times of falling or low interest rates is part of the reason for its relatively high 9.1 percent average cost of funds for fiscal year 1995.

[8]See GAO/AIMD-96-145 for a detailed discussion of our methodology for calculating the financing subsidy.

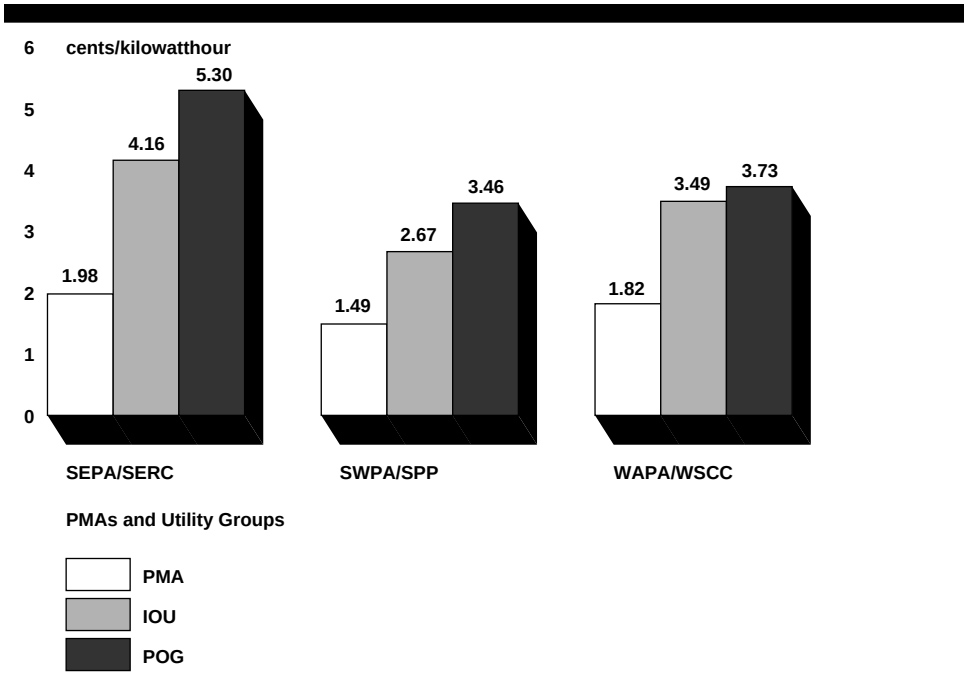
## Federal Subsidies and Inherent Advantages of PMAs Result in Low Cost Power

PMAs market low cost wholesale electricity. We believe that average revenue per kilowatthour (kWh) is a strong indicator of the relative power production costs and overall competitive position of the PMAs compared to other utilities.[9] As shown in figure 2, in 1994 the PMAs' average revenue per kWh for wholesale sales was more than 40 percent lower than investor-owned utilities (IOUs) and publicly owned generating utilities (POGs) in the primary North American Electric Reliability Council[10] (NERC) regions in which the PMAs operate.

[9]The average revenue per kilowatthour for wholesale sales (sales for resale) is referred to in this testimony as average revenue per kWh. This average is calculated by dividing total revenue from the sale of wholesale electricity by the total wholesale kilowatthours sold. Because PMAs and publicly owned generating utilities (POGs) generally recover costs through rates with no profit, average revenue per kWh should be reflective of PMAs' and POGs' full power production costs. For investor-owned utilities (IOUs), average revenue per kWh should represent cost plus the regulated rate of return. Given that a large portion of IOU rate of return (net income), 80 percent, is used to pay common stock dividends, which is a financing cost, average revenue per kWh also approximates power production costs for IOUs. The Energy Information Administration cautions that average revenue per unit of energy sold should not be used as a substitute for the price of power. The price that any one utility charges another for wholesale energy comprises 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 facilities. These fees are influenced by factors such as time of delivery, quantity of energy, and reliability of supply.

[10]The North American Electric Reliability Council (NERC) was formed by the electric utility industry to promote the reliability and adequacy of the bulk power supply in the electric utility systems of North America. NERC consists of nine regional reliability councils and encompasses essentially all the power systems of the contiguous United States as well as parts of Canada and Mexico.

**Figure 2: Average Revenue Per Kilowatthour of Wholesale Power Sold, 1994**




Note: SERC - Southeastern Electric Reliability Council; SPP - Southwest Power Pool; WSCC - Western Systems Coordinating Council.

Source: Developed by GAO based on information from the PMAs' 1994 annual reports, Energy Information Administration, and American Public Power Association.

In 1994, the national wholesale average revenue per kWh was 3.5 cents for IOUs and 3.9 cents for POGs. This compares to 1.49 cents for Southwestern; 1.82 cents for Western; and 1.98 cents for Southeastern. To take into account the variability of PMA hydropower, we also compared the PMAs' average revenue per kWh to national averages for IOUs and POGs from 1990 through 1993. During that period, the PMAs' average revenue per kWh was consistently at least 40 percent less than that of IOUs and POGs. A detailed comparison of PMA, POG, and IOU average revenue per kWh for 1990 through 1994 and a comparison of each PMA's average revenue per kWh by rate-setting system[11] to the applicable NERC regions for 1994 is presented in our report issued today. Except for several rate-setting systems at Western, and one at Southeastern, the PMAs' power production costs

[11]Southeastern has 4 systems, Southwestern has 3 systems, and Western has 10 systems.

appear to be stable and well below the costs for nonfederal utilities in their respective areas of the country.

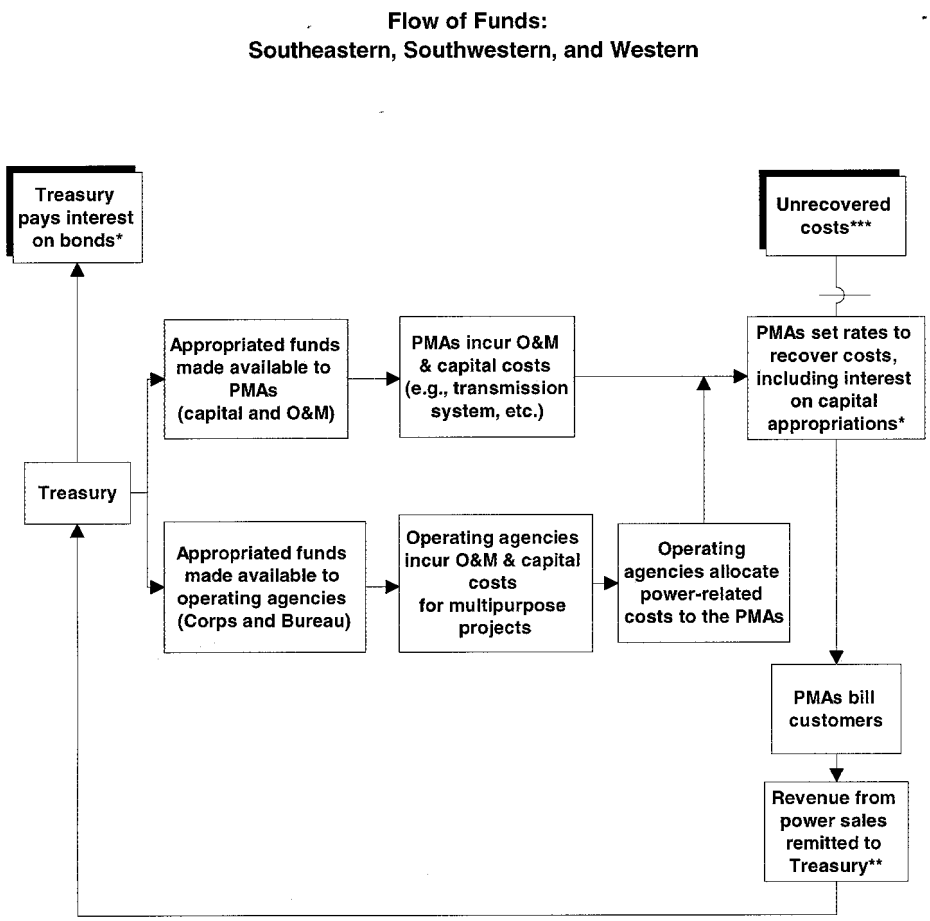
Some of the difference in average revenue per kWh between the three PMAs and nonfederal utilities is attributable to the PMAs' unrecovered power-related costs and federally subsidized debt financing discussed earlier. PMAs also have other inherent advantages that contribute to their low-cost power. First, PMAs rely almost exclusively upon hydropower produced by projects built primarily 30 to 60 years ago, a low cost means of generating electricity. Unlike the PMAs and operating agencies, IOUs build new capacity to meet future customer needs and must rely on more expensive sources of electricity, such as coal and nuclear energy. To illustrate, during 1995, about 55 percent of the electricity generated in the United States by IOUs and POGs was fueled by coal, and another 25 percent by nuclear energy. Second, PMAs, as federal agencies, generally do not pay taxes, whereas other utilities pay federal and state income taxes, property taxes, and other taxes, or payments in lieu of taxes. In 1994, IOUs paid an average of about 14 percent of revenues for taxes, and POGs paid an average of 5.8 percent of revenues to state and local governments in lieu of taxes.

PMAs also have certain disadvantages compared to nonfederal utilities. For example, Western is required to recover through rates the cost of the Hoover Dam Visitor Center totalling an estimated $124 million. Also, Western is required to recover approximately $1.5 billion related to construction costs on completed irrigation facilities. Reclamation law provides for Western to repay certain portions of capital costs allocated to irrigation purposes which are determined to be beyond the ability of the irrigators to repay.

Recent developments are projected to decrease average wholesale electricity rates, which could impact the competitiveness of certain of the PMAs' higher-cost rate-setting systems. Competition in the wholesale electricity market is increasing due to legislation, such as the Energy Policy Act of 1992, which encouraged additional wholesale suppliers to enter the market and provided greater access to other utilities' transmission lines. Another factor that could impact the PMAs is the increasing influence of low cost independent (nonutility) power producers (IPPs). Construction of increasingly efficient natural gas-fired combustion turbines by IPPs is driving the market price of wholesale electricity down.

In aggregate, we estimate that the unrecovered power-related costs and financing subsidy total about $300 million for fiscal year 1995. Over the last 30 years, we estimate that these costs have been in the billions. It is important to emphasize that the PMAs are generally following applicable laws and regulations regarding recovery of these power-related costs and financing of capital projects.

Mr. Chairman, this concludes my testimony. I would be happy to respond to any questions that you or Members of the Subcommittee may have.




*The difference between interest paid by Treasury and interest received by Treasury from the PMAs on capital appropriations represents a financing subsidy.

**Southeastern and Southwestern customers generally remit funds directly to Treasury via lockboxes. For Western, there are various mechanisms for receiving and remitting funds to Treasury.

***Unrecovered costs:

1. pension/postretirement health benefits,
2. completed/in progress construction costs,
3. Pick-Sloan irrigation,
4. environmental costs, and
5. deferred payments (interest on deferred payments is included in rates).

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