Policy Analysis

Cato Institute Policy Analysis No. 66: The Bonneville Power Administration: The Worst Mess by a Dam Site

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Executive Summary

The need to reduce the federal deficit has been apparent for some time, but political pressures have prevented Congress and the administration from agreeing on the necessary spending cuts. Now the Gramm-Rudman-Hollings Act and the new, higher deficit estimates have made the problem more pressing. With tax increases ruled out because of economic logic and--of more practical significance--the president's firmness, Congress must find spending reductions to meet its New Year's resolution to bring down the deficit. One promising approach is to privatize functions that can best be carried out by the private sector. In many cases this will result in both lower costs and better service. One good candidate for privatization is the Bonneville Power Administration, which provides hydroelectric power to the Pacific Northwest.

History

The Bonneville Power Administration

Grand Coulee Dam, near the midpoint of the Columbia River, is a big dam. It is 550 feet high (approximately 50 stories) and almost 4,200 feet long, with a reservoir, Franklin D. Roosevelt Lake, that stretches over 150 miles upstream. The dam's three powerhouses provide 6,200 megawatts of generating capacity, surpassing that of five large nuclear plants. It took six years to pour the concrete for the dam, and even that was not enough: tons of concrete have to be added periodically to fill cavities caused by erosion.

Grand Coulee and its sister project near Portland, Bonneville Dam, undertaken in the spirit of the New Deal and rural electrification, were the first in a series of hydroelectric facilities constructed on the Columbia River, one of the largest rivers in North America. These and later hydroelectric projects have provided the Northwest with inexpensive and abundant energy for industrial, commercial, and residential use.

In 1937, after three years of sometimes bitter debate, President Roosevelt signed the Bonneville Project Act, which created the Bonneville Power Administration (BPA) to transmit and sell the energy generated at Bonneville and Grand Coulee.[1] Revenue generated from these energy sales was to enable the region to repay the Treasury loans used to finance the projects. The power was plentiful and cheap, and economic growth and prosperity followed for the industries and communities that could readily utilize this reliable, low-cost energy. For most of its history, BPA sold the energy to its customers in Washington, Oregon, Idaho, and Montana for less than five mills (one-half cent) per kilowatt hour; only within the past decade have rates begun to rise.

Since its founding, BPA has constructed over 14,000 circuit-miles of transmission lines, and these lines form the

backbone of the region's energy-transmission system. The system's workings are now largely computerized, and relatively few people are required to maintain it to ensure that power is available at the socket.

Although hydro facilities are capable of consistently generating large amounts of electricity and rarely have to be shut down, they operate at some environmental cost. Prior to the construction of Bonneville and Grand Coulee, there were at times more than four dozen fish canneries on the Columbia River system that benefited from the river's enormous, renewable fisheries resource. Although heavy fishing had reduced the river's yield of Chinook salmon to such an extent that other salmon were being harvested, the main-stem hydro facilities on the Columbia River and its chief tributary, the Snake River, substantially reduced this once-thriving industry as well.[2] Prior to the completion of the dam system, more than 20 million pounds of salmon were harvested each year from the river. Since 1960, the yearly average has been closer to 8 million pounds, and it is still declining.[3] The last remaining Columbia River fish cannery closed in the mid-1970s.

Viewed in terms of environmental cost, therefore, Northwest power is not so inexpensive. Furthermore, although new industries have come to the Northwest to take advantage of the cheap power, they are likely to be there only temporarily and are thus a poor economic replacement for what the river yielded naturally. They have created new jobs primarily in the aluminum industry, but that industry is now in a state of decline and may soon leave the region.

Throughout its history, BPA has taken on many special-interest projects and programs in addition to its original purpose of transmitting electricity generated at federal facilities. As BPA has assumed more responsibility and decisionmaking authority for these projects and programs, its efforts have become steered more by special-interest politics than by economics. These shifts have significantly increased the cost of power in the region, with little or nothing to offer rate- payers in return.

BPA is obligated by the Bonneville Project Act (as well as by several subsequent congressional acts) to sell its electricity first and foremost to public bodies. These are the so-called preference customers, which consist of public utility districts (PUDs), cooperatives, and municipal utilities. The power sold to preference customers is subsidized from beginning to end by the general taxpayer in a variety of ways, including grants from the Treasury for plant and equipment projects and a lax repayment policy that permits delinquent annual payments--known as "deferrals"--on BPA borrowings that fund the generating projects.[4] The PUDs that buy the bulk of the subsidized power are also subsidized by the general taxpayer, mainly through the sale of tax-free municipal bonds for construction of PUD projects, priority access to publicly owned hydro sites, no tax burden, and a favorable legal structure that enables PUDs to sometimes repudiate financial obligations when a failed project's debt becomes inconvenient.

In the 1930s, congressional debate over BPA's preference concept coincided with a growing public-power movement in the Northwest. The movement was most successful in Washington State, where 15 districts voted in 1936 to form PUDs, mostly on a countywide basis. By 1940 there were 29 PUDs in the state. The public-power movement's successes reinforced pro-preference forces in Congress, where the preference clause was passed as part of the Bonneville Project Act in 1937.

Thereafter, the public-power movement was carried forward by the federal government's hydroelectric projects and BPA's willingness to build expensive transmission lines from distant hydro facilities to newly formed preference customers. In addition, the movement was helped by BPA's uniform rate policy, which required that rates be identical regionwide regardless of how far the energy was transmitted. The public-power movement's federal support greatly disturbed the private power companies, which perceived that they could not compete with the federal government. BPA's preference provision for PUDs and municipal utilities has been a bone of contention from 1936 to the present day.[5]

The preference clause's initial purpose was to ration power in the event of a shortage, in which case BPA would "prefer' to serve some customers at the expense of others. This provision has rarely been enforced because the region has never suffered a long-term power shortage, undergoing only a few brief shortages in the early 1950s. Consequently, the concept of a preference clause for rationing purposes in the Northwest has been largely meaningless.

Under BPA's authority, only power that is surplus to the needs of preference customers can be sold to investor-owned

utilities (IOUs). Power still available after that can be sold to direct-service industries (DSIs, primarily aluminum companies). No power can be sold outside the region unless it is surplus to the needs of the region.

For most of its history, the Northwest had no central authority to plan and regulate the various power interests in the region. If another dam was thought to be beneficial, money was appropriated by Congress and a dam was built. There has always been enough power on or about to come on line to meet BPA customer needs.

Regional planning efforts have been largely voluntary. The Northwest Power Pool (NPP) was created in 1942 to increase efficiency and cooperation among utilities in the Northwest. A BPA-sponsored conference in Tacoma after World War II led to the formation of the Pacific Northwest Utilities Conference Committee (PNUCC). Composed of representatives from public and private utilities, the DSIs, and BPA, the PNUCC has generally acted as a sounding board for BPA policies and as a forum for the views of BPA customers. Interaction among the PNUCC, the NPP, BPA, and other organizations has resulted in successful voluntary planning aimed at avoiding power shortages and the construction of superfluous facilities.[6]

During World War II, the federal government encouraged expansion of the aluminum industry in the Northwest to take advantage of the region's low electricity rates. After the war, more aluminum companies came to the Northwest and, largely as a result, electricity demand rose at an annual rate of 7 percent. There are now 10 aluminum plants in the Northwest, and they employ, directly or indirectly, an estimated 50,000 people.[7]

As demand rose under the pressure of aluminum-industry expansion and general economic growth, more dams were built to tap the power potential of the Columbia River and its tributaries. Despite the heavy construction program, it became clear by the early sixties that assuming continued 7 percent growth, the era of abundant power would eventually come to an end. All of the good hydro sites had been exploited, and if more resources were not found, it was reasoned, there would be a shortage of power at current rates. The public looked to BPA, which until then had been an endless source of cheap electricity, to solve the expected shortage.

BPA turned to thermal power. In 1966, BPA joined 108 utilities to form the Joint Power Planning Council. The result was the Hydro Thermal Power Program, BPA's blueprint to meet future demand. The program envisioned the construction of seven large nonfederal thermal plants, which would be connected to the BPA transmission grid for regional service, and which would add peaking capacity at existing federal hydro facilities. The program formalized thermal power as the solution to the expected shortage, with the understanding that it would eventually be nuclear-generated. At the heart of the program was the concept of "net billing," which in effect enabled BPA, through its decision whether or not to net-bill a facility, to determine the region's future energy projects.[8]

Although BPA was prevented by law from undertaking any kind of power-plant construction, it was able to use net-billing to evade that restraint. Under net-billing, BPA customers who purchased shares in the planned capability of a net-billed facility would assign those shares to BPA.[9] The agency would pay for the shares by crediting customer accounts for the cost of the net-billed power. In effect, a participant, such as a PUD, would buy a share of a generating facility and then assign it to BPA in exchange for future power. Because there was no set price for the future power, costs could rise for some time before anyone noticed--if BPA's net-billed liability increased, it would simply raise the price of the future power.

The major effect of net-billing was to combine the higher costs of thermal power with the traditionally low costs of BPA's hydro resources. As a result, all BPA ratepayers were the ultimate purchasers of net-billed power. Had that power not been net-billed, individual utilities would have had to pay for the thermal project, and only their rates would have risen to cover the construction costs. Through net-billing, the costs and risks of net-billed power were hidden from ratepayers for some time, as they were hidden through their association with the cheap hydro power. Because the planned power capability of the project was already sold to a federal agency--to BPA, through net-billing--the tax-exempt bonds through which the project was financed were perceived to have the federal government's blessing, thus precluding any financial problems the project may have deserved.

In the late sixties and early seventies, soon after the development of the net-billing arrangement, four thermal plants were added to the system by net-billing agreements: 30 percent of the Trojan nuclear plant, 100 percent of the Washington Public Power Supply System's (WPPSS) nuclear project 1 (WNP-1) and nuclear project 2 (WNP-2), and

70 percent of WPPSS's nuclear project 3 (WNP-3).

The Washington Public Power Supply System

In 1949, the Washington State legislature created the Washington State Power Commission and granted it the authority to generate and transmit power. In 1953, and again in 1955, the legislature amended the law to allow groups of two or more cities or PUDs to form joint operating agencies with the authority to sell bonds to finance their projects. In January 1957, the legislature abolished the commission while still allowing cities and PUDs to form joint operating agencies. Also in January 1957, the state conservation department approved formation of WPPSS by 16 PUDs.[10]

WPPSS floated along for a few years as nothing more than a paper organization, not taking on any projects. Then, in 1960, the Lewis County PUD asked WPPSS to build the Packwood Lake hydro project, and the WPPSS board (made up of representatives from the PUDs) took the opportunity to test its bonding authority. The bonds were sold and the hydro project, in the Cascades in central Washington, was completed.

In 1961, WPPSS outlined a plan to construct a generating facility using waste steam at the federal government's Hanford New Production Reactor, which produced weapons-grade plutonium. In a compromise with Congress (which historically was opposed to power production at Hanford), WPPSS, in conjunction with some private power companies, was allowed to construct the facility. WPPSS did not construct a new nuclear reactor; rather, it built only a co-generation facility to make use of waste steam generated by a fission reactor that was already operating. The facility, with an average output of about 400 megawatts, began operation in 1966.

After these successes, WPPSS developed a plan to build three new nuclear plants that would fall within the scope of BPA's Hydro Thermal Power Program and its net-billing provision. This provision helped solve any problems WPPSS might otherwise have had in selling bonds to finance the plants, and the bonds became nationwide best-sellers. Indeed, net-billing allowed the project's many problems and cost overruns to be effectively transferred to all BPA ratepayers. Of the three plants, which together cost more than $6 billion, only WNP-2 ever became operational.

BPA and the Projected Power Shortage

While the WPPSS plants were being constructed, BPA's borrowing authority to fund transmission projects was being expanded. In 1974, Congress passed the Federal Columbia River Transmission System Act, which set up a $3.75 billion fund for BPA projects, such as substations and transmission lines.[11] Under the terms of the act, any money BPA borrowed from the fund was to be paid back from BPA rates, which usually meant long-term and low-interest borrowings, a type of borrowing arrangement characteristic of any system project, from dams to substations. Construction funds were a loan from the Treasury, to be paid back from BPA's revenues over the long term.

In 1976, BPA notified its customers that an imminent power shortage would prevent BPA from serving everyone's firm power requirements past June 30, 1983. Preference customers--PUDs, cooperatives, and municipal utilities--would continue to receive subsidized hydro power, but the investor-owned utilities would be able to buy power only on a non-firm or as-available basis. This was the first time that the preference clause was to mean anything, as BPA was preparing to deny IOU ratepayers access to federal hydro power in order to provide service to the preferred-customer class. To prevent power shortages, the IOUs began building thermal plants of their own, such as Portland General Electric's Boardman coal plant. However, because power from these plants was more expensive than BPA's subsidized hydro power, the IOUs' rates began to rise significantly faster than rates in neighboring PUDs.

At the same time, the PUDs expanded their construction programs as well. WPPSS decided to add two more nuclear plants, WNP-4 and WNP-5, which did not fall under BPA's net-billing mechanism. These two plants have since been canceled and their bonds are now in default. BPA is not responsible for any portion of the bonds for these two plants.

Under BPA's notice of insufficiency, the direct-service industries, primarily the aluminum companies, would retain their power until their contracts expired in the early 1980s. The IOUs would lose "firm" power before the DSIs did because their contracts would expire sooner. Unlike Washington, Oregon was served largely by private utilities, and many Oregon residents would therefore lose their access to BPA power. This threat led the city of Portland to file lawsuits against BPA, and a movement began in the Oregan state legislature to turn vast sections of IOU territories

into PUD districts (for legal purposes only) so as to qualify them for preference power.[12] Faced with these challenges, BPA sought to reorganize its statutory purposes to bring some fairness into the picture. The result was the Pacific Northwest Electric Power Planning and Conservation Act, passed by Congress in 1980.[13]

The Pacific Northwest Electric Power Planning and Conservation Act

The act had a little something for every special interest in the region, including the fish, which were made BPA's responsibility. It promised the PUDs that their subsidy (their preference rights) would remain intact and that their rates would be no higher than if the act had not become law. It promised the IOUs to narrow the disparity between their rates and those of the PUDs and to grant them greater access to federal power. It promised the DSIs reasonably firm power supplies, which the impending shortage would otherwise take away. It promised the conservation and renewable-energy interests substantial sums of money to be provided by BPA. Most of all, it mandated that BPA, in conjunction with the act's power-planning council, would be the central authority for planning and coordinating electrical energy in the Northwest.

Prior to the act, BPA had covertly planned the energy market through its selective use of net-billing agreements and other, lesser means. Afterward, BPA could overtly steer the market by means of its newly granted acquisition authority. The act required BPA to offer energy-supply contracts to requesting utilities both public and private.[14] If BPA sold more energy through these contracts than it had on line, then it would buy energy on the market to meet its contractual obligations.

The acquisition authority ceded to BPA was one of the act's central points, for it meant that a utility had only to sign on at BPA to receive power, shortage or otherwise, preference or not. Utilities were guaranteed power by authorizing them to construct generating facilities--"resources'--to meet needed demand. BPA, however, is prevented by law from constructing generating resources itself. Its acquisition policy was designed to enable BPA to "acquire" resources from independent producers to meet its customer requests.[15] In reality, the acquisition policy was merely a convenient screen, for in many cases BPA provides capital funding for resource construction under its acquisition authority.

BPA's acquisition authority was aimed at solving the expected power shortage. The act's guidelines for making resource acquisitions required that all BPA resources meet certain criteria, one of which involved following a definite order of priority, other things being equal, in choosing which resources to acquire. According to the act, the first-priority resource was conservation, for example, home weatherization and process improvements. Second in priority were renewable resources, such as windmills and solar energy. In third place were resources based on such alternative fuels as garbage and wood chips. Fourth came all other resources, including nuclear energy, coal, and natural gas.[16]

Of course, the stipulation that the priority schedule be invoked only in the absence of determinative considerations amounted to little more than legal background noise. Congress had decided that conservation and renewables were going to be acquired regardless of any "otherwise equal" competitive position they might or might not enjoy. To this end, Congress provided BPA with an additional $1.25 billion in borrowing author- ity to construct--or, in BPA's phrase, "acquire"--those resources.[17] This borrowing authority, written into the act long before BPA had developed its methodology for evaluating resources, was aimed primarily at quieting the conservation interests, which had been complaining for some time about BPA's ambitious nuclear program and related support.

The conservation interests sought not so much to end BPA's nuclear welfare--a worthy goal that would have put the two resources on a more equal footing--but to create a regulatory structure that would put themselves on BPA's dole in much the same manner. The act's language laid the legal groundwork for a federally funded conservation program supported by the general taxpayer. Soon after the act's passage, a "conservation" line item appeared in BPA's annual budget; over time, it would amount to billions of dollars in principal and interest.

To provide regional input into BPA policies, the act created another government agency, the Northwest Power Planning Council.[18] The primary function of the council was to develop a 20-year plan to be used by BPA as a guideline when designing policy. The council looks after everyone's interests and attempts to balance competing interests when necessary. Headquartered in Portland, the council is composed of two representatives from each of the four states served by BPA, as well as a staff of economists, analysts, and others. The council's effectiveness has yet to be determined.

The act also tried to appease the IOUs, which were concerned about the growing rate disparity between private and public utilities. The IOUs had been compelled to build higher-cost thermal plants. Their rates reflected this investment, as they had been unable to finance construction by gaining access to the Treasury's low-interest funds or by selling tax-free bonds.

By a clever, though bureaucratically cumbersome, mechanism called the "exchange," the IOUs gained a subsidy from BPA.[19] The exchange is based on what is called the "average system cost" (ASC), the generation cost of one kilowatt-hour of a utility's power; it is comparable to totaling the utility's generation costs and dividing the sum by the amount of energy delivered. The exchange uses the difference between the IOU's ASC and BPA's ASC (the rate BPA charges its preference customers) as a measure to determine the amount of subsidy the IOUs will receive.

Under the exchange, a participating utility sells a set amount of power, determined by the size of its residential load, to BPA at the utility's ASC. In return, BPA sells an equivalent kilowatt-hour amount of power to the utility at BPA's ASC, in addition to making a payment equal to the difference between the two ASCs for every kilowatt-hour exchanged. By extending this subsidy to the IOUs, the rate disparity between public and private utilities narrowed.

The difference between a utility's ASC and BPA's ASC can total millions of dollars in subsidies, so the participating utilities tend to push for the largest possible difference, while BPA and the parties paying the bills for the exchange tend to push for the smallest possible difference. The exchange has generated a great deal of political maneuvering by the parties involved over the definition of "generation cost," since BPA can disallow some of the costs figured into the exchanging utility's ASC.[20] In this sense, the deck is stacked against an exchanging utility.

Under the act, the parties earmarked to pay the bills for the exchange subsidy were the DSIs, principally the aluminum companies. The DSIs agreed to carry the bulk of the costs for the first five years of the subsidy in exchange for long-term power-supply contracts. During those years, the exchange load (the amount of energy to be exchanged), was to be ramped in to cushion the rate shock. No one doubted that the exchange agreements would significantly increase DSI rates, but it was a price the DSIs were, at the time, willing to pay for a guaranteed power supply. The actual price of that guaranteed power, however, remained undefined under the 1980 act. After 1985, the exchange cost was scheduled to be spread among all of BPA's customers, and the DSI rate was to be based on the rate that preference customers charged their industrial and commercial customers.[21] The DSIs would thus finally acquire some rate stability--their rates had risen some 700 percent between 1979 and 1985.

The PUDs' interests survived the 1980 act virtually intact. One of the act's primary purposes, from the PUD perspective, was to protect preference from an IOU assault. The PUDs did not like giving up any of "their" federally subsidized, low-cost power to the IOUs. However, as long as it was to be given to the IOUs under the guise of high-cost power subsidized by some other entity--the DSIs, through the exchange mechanism-- the PUDs went along with it, especially since BPA's acquisition authority assured a power supply. The PUDs also obtained a guarantee called the "rate test," under which the rate BPA charged the PUDs could not rise any higher than it would have if the act had not been passed.[22] So the act not only had zero impact on the preference rate, but the preference customers maintained their access to federally subsidized hydro power.

With the 1980 act, Congress had managed to do the impossible by pleasing every special interest in the Northwest. The conservation interests got their money, the DSIs got their power, the IOUs got their rate parity with the PUDs, the PUDs confirmed their preference rights, the pending power shortage was averted, and BPA took over the fish problem. What more could anybody want?

The Present Mess

It has been more than five years and we have witnessed a severe recession since the 1980 act was signed into law. BPA has done its utmost to carry out the letter and spirit of the act, but harsh realities are interfering with the act's smooth application. For example, the impact of BPA's net-billing for WPPSS plants WNP-1, WNP-2, and WNP-3 is now being felt--to the tune of nearly $800 million per year in rate-payer revenues.[23] See Table 1 for a cost breakdown.

Table 1 Supply System Costs for WPPSS Power Plants ($ Billions)				
Category	WNP-l	WNP-2	WNP-2	Total
Total bonds	2.155	2.370	1.600	6.125
Bonds outstanding	2.125	2.281	1.590	5.996
Total interest	6.000	5.500	5.000	16.500
Interest outstanding	4.976	4.168	4.178	13.322

Source: Bonneville Power Administration.

*The WNP-3 figures represent only the 70 percent for which BPA is responsible, not the project's totals.

In FY 1980, the DSI rate was 4.51 mills per kilowatt-hour and the preference rate was 6.49 mills. The DSI rate for FY 1985 was 26 mills and the preference rate was 22 mills. (Currently, BPA's "incentive rate" to the DSIs is 19 mills to promote consumption.) It is evident that these price increases will have some impact on consumption, and that is what the authors of the 1980 act failed to anticipate. Prior to the act, it was assumed that power consumption, which had been growing at an annual rate of 7 percent since 1945, would continue to grow indefinitely, despite any and all rate hikes. However, these rate increases, as well as the battered state of the Northwest economy, have kept demand little more than static, and in some cases it has actually fallen.[24] The bulk of these rate increases are attributable to two specific types of costs: (1) BPA's net-billed and other responsibilities for WNP-l, WNP-2, and 70 percent of WNP-3, and (2) the exchange agreements.

The DSIs were the first to fall under the rate hikes, the watershed being the 1981-82 recession. Whereas before the recession many of the aluminum plants were merely "aging," afterward they were "old." With every new rate increase, they grew even older. The aluminum industry could not survive under the pressure of high rates; unless rates declined, the plants would go out of business. If the industry left the Northwest, BPA would suffer financially, since the DSIs provide one-third of BPA's total revenues.[25] BPA's incentive rates have mitigated the situation in the short term, but the industry desires long-term, low-cost contracts that would lend it stability.

The DSI incentive rate and the possibility of long-term DSI rate decreases have greatly disturbed the preference customers. If BPA is to balance its books, revenues that the DSIs do not provide must be provided by the preference customers. The PUDs pointed to the 1980 act's "rate test" clause, which legally restricts the PUD rate from increasing any more than if the act had not been passed, and claimed that it would be violated if PUDs were forced to provide rate relief to the DSIs.[26]

The only way the PUDs could invoke the act's rate test in this instance would be to claim that they would not have paid for the WPPSS projects--which they sponsored--if the act had not passed. But if that were the case, then who was going to pay for them? The DSIs were certainly not going to pay; at such rates they would shut down their plants. The IOUs could probably have been force-fed some of the bonds required to finance the projects, but they have many generating facilities of their own, they are not nearly as dependent on BPA power as the PUDs, and they could thus avoid much of the burden. (The IOUs accounted for only $316 million of BPA's $1.8 billion FY 1984 revenues. Of that, $20 million came from IOUs outside of BPA's service area.) Thus, neither the DSIs nor the IOUs would likely pay the WPPSS bill, leaving either the PUDs or a BPA default on its net-billed responsibilities. The BPA-default option would clearly be unacceptable to BPA, which leaves the PUDs alone to pick up the tab. Thus, even without the passage of the act, the PUDs would likely have faced significant rate hikes to pay for their WPPSS projects.

The IOUs are now disenchanted with their fate under the 1980 act because the subsidy they are receiving through the exchange is not nearly as big as they had hoped. The DSIs could not afford the IOUs' exchange bill, and the PUDs did not want to take up the slack. If the DSIs continue to receive discount rates and the PUDs do pay the subsidy, the preference rate will eventually approach or eclipse the exchanging utilities' ASCs. (See Table 2.) If the preference rate rises above an exchanging utility's ASC, the utility will have no incentive to exchange. The IOUs will have received what they wanted under the 1980 act--parity with PUD rates--but by a disadvantageous means: by increases in the

preference rate, rather than decreases in their own rate.

Table 2
Residential Exchange Costs for Fiscal Year 1984

Utility	Energy (mwh)	Gross Exchange Value($)	Payment to Utilities by BPA($)	Average System Cost (mills/kwh)
Benton Rea	154,521	4,242,284	927,757	27.45
Blachly-Lane Coop.	33,761	1,032,910	279,280	30.59
Central Elec. Coop.	76,106	1,286,170	(765,453)	16.90
Clark Co. PUD #1	1,254,994	32,834,043	3,931,802	26.16
Clearwater Power	80,870	2,150,849	311,809	26.60
Consumers Power	149,544	4,216,376	894,191	28.19
Coos-Curry Coop.	100,131	3,107,422	927,390	31.03
CP National	241,469	6,257,042	1,005,554	25.91
Douglas Elec.	34,647	947,244	299,907	27.34
Fall River	75,093	1,817,039	296,951	24.20
Idaho Power	3,839,621	85,548,351	3,064,494	21.76
Lincoln Elec. WA	45,442	1,126,963	331,423	24.80
Lost River	34,314	956,251	297,068	27.87
Lower Valley P&L	144,520	4,347,341	1,120,556	30.08
Montana L&P	8,348	226,734	32,257	27.16
Montana Power	441,933	9,220,056	(189,270)	20.86
Portland Gen. Elec.	5,092,023	196,314,407	84,188,021	38.55
Pacific P&L	5,651,192	191,958,895	70,137,079	33.97
Puget Sound P&L	6,793,628	139,485,303	12,617,400	20.53
Raft River Elec. Coop.	85,435	2,134,359	576,643	24.98
Snohomish Co. PUD	1,968,440	57,377,519	10,668,721	29.15
Umatilla Elec. Coop.	176,695	4,670,831	1,174,673	26.43

Utah Power	686,623	30,533,130	17,467,412	44.47
Wash. Water Power	2,483,235	55,462,795	(64,373)	22.33
Total	29,653,585	835,254,314	184,296,492	28.17

Source: Fiscal Year 1984 Generation and Sales Statistics.

*During the FY 1984 residential exchange program, BPA's average millage rate was 20.99 mills/kwh.

The conservation and renewable-energy interests were reasonably happy with the act. The bulk of the $1.25 billion in additional borrowing authority given to BPA to fund conservation measures has been used to buy storm windows and insulation for Northwest homeowners. A total of $147 million was spent in FY 1985, but, owing to pressure from the federal budget office, it was cut to $76 million for FY 1986. By 1990, it is scheduled to rise to $118 million.[27]

BPA's conservation program is a sham, little more than a government-funded home-remodeling project. Thousands of wood-heated homes have been improved by the addition of storm windows, storm doors, insulation, and other conservation measures paid for largely by BPA and its accompanying Treasury borrowings.[28] How BPA figures it will save electricity by weatherizing wood-heated homes is difficult to comprehend, but it makes as much sense as any kind of subsidized conservation program in a region that has a significant power surplus for the foreseeable future as well as some of the lowest-priced electricity in the nation.

The act has left only one special-interest group in the Northwest undisturbed. That group, of course, is the fish, which are still having a hard time making it through the turbines.

Only a few of the act's goals have been accomplished, and continued enforcement of the act shows every sign of compounding existing problems. The act has allowed--in some cases, forced--BPA to paint itself into an increasingly tight corner. Aluminum-plant slowdowns or shutdowns, due to unstable rate conditions caused primarily by the exchange and the WPPSS liability, produce significant declines in revenue and aggravate a growing power-surplus problem.[29] California is a possible market for the surplus, but it would not be feasible to transport vast amounts of energy--like that resulting from a large-scale aluminum-industry shutdown--to California in the near term. The Pacific Northwest-Pacific Southwest Intertie is being expanded, but its increased capacity will be able to carry only about 400 megawatts, 25 percent more than what one aluminum plant consumes. If several plants shut down, the surplus will stay in the Northwest, unused.

While rates have been rising to pay the bills, BPA has been spending more than $100 million every year to promote conservation. This not only reduces sales and revenues but increases BPA's liabilities, since the money spent on conservation measures is borrowed money. A rate hike to pay the conservation bill would depress demand and revenues even further, duplicating BPA's DSI problem in the residential sector.

Furthermore, the system's debt with the federal government continues to grow at a phenomenal rate. As mentioned, the 1974 Transmission System Act set up a fund of $3.75 billion for BPA to draw on to build transmission lines and assorted projects, and the 1980 act set up a $1.25 billion fund for BPA to devote to conservation measures. Public Law 98-50 replenished the transmission act's fund with an additional $1.25 billion. Total BPA debt is $3.338 billion, total Corps of Engineers and Bureau of Reclamation Debt for the dams' construction is $5.225 billion, and total conservation debt is $621 million. Total system debt is estimated at $9.174 billion for FY 1986, up from $7.473 billion in FY 1983. This pattern of growing indebtedness shows every sign of continuing.[30] Although a $350-400 million annual increase in BPA's debt is small by federal standards, it is still a substantial addition to the huge government deficits. All of these loans are supposed to be repaid from BPA revenues, but the agency is going up the down escalator, and there are serious doubts that the loans will ever be paid off.

The 1980 act's borrowing authority for conservation reflects another facet of a persistent problem--the absence of any cost discipline at BPA. Irrespective of price, many projects are undertaken simply because funds are so readily available, and this continued borrowing for projects will eventually undermine the system. BPA never anticipated that electricity demand was elastic, given that demand had risen virtually non-stop at an annual rate of 7 percent since the

completion of Bonneville Dam. Of course, the price had remained below 5 mills per kilowatt-hour until FY 1980; as it rose to more than 15, 20, and 25 mills, demand became more elastic, particularly for BPA's big DSI customers. This demand problem is exactly what BPA's net-billing policy has yielded: many projects were started, few were completed, and when the bill came due, no projects were needed.

The Federal "Solution": Further into the Morass

BPA's past unrestrained spending has put the agency and the region in an untenable position. The region is drowning in an ocean of high-priced electricity, fundamentally denying the laws of supply and demand. Something must give, and in the private sector it usually means Chapter 11. The 1980 act contributes to the problem in so many ways that its repeal could well be the first step to a solution.

If the act were repealed, it would have to be replaced with something else to provide BPA with legal authority. The federal taxpayers' interest would be simple enough in any new act--to stop the drain of taxpayer funds. Reagan administration budget officials have recently sought to rewrite the agreed-upon interest rate of past BPA borrowings by increasing it from a weighted average of 5 percent to present Treasury borrowing costs of 11.25 percent. The administration is also aiming to put BPA's past borrowings on a fixed repayment plan. Currently, BPA will pay off high-interest borrowings first, with lower-interest loans being paid off last, some with a lump-sum payment in their year of maturity. Thus, inflation will devalue the lower-interest loans to their fullest extent. On top of that, the administration would like to reduce BPA's borrowing authority in order to put an end to the spend-and-borrow spree that has been going on for nearly five decades.

From a rate-payer perspective, the administration's goals amount to little more than higher rates and the end of the aluminum industry, its jobs, and related support services. In addition, preliminary study by a Northwest utility group suggests that higher rates would have a negative net impact on the Treasury.[31] There would be tax losses, due to the devastating effect of higher rates on the Northwest economy, especially as the aluminum industry shut down. BPA would lose the income it receives from the aluminum companies (which came to $629 million, or 34 percent of BPA's revenues, in FY 1984), and the Treasury's recent efforts to more quickly recover its funds would be hindered.[32] The impact of higher rates would carry well beyond an aluminum-industry shutdown into income-tax losses and increases in unemployment benefits and welfare payments, and so on. If the aluminum industry pulled out, residential and commercial rates would have to rise even higher, depressing demand. Electric heat is the primary load of the residential sector; even at rates as low as they are now, wood stoves would still be cheaper for vast numbers of the rate-paying public in the Northwest. Price hikes may induce consumers to switch from electricity to wood or other alternative fuels and to conserve more energy. Taking all these considerations into account, it is easy to see that raising rates would have little positive impact on any concerned party, including the federal government.

The federal call presents some philosophical problems as well. Although federal budget officials are quick to point to BPA's ghastly misuse of public monies, BPA's loans from the federal government have many characteristics of an investment. All legal wording aside, if the funds used to build the power system were loans, then the ratepayers should own the system when the loans are repaid. Under current law, that will never happen; thus, there is no incentive for the ratepayers to take the loans seriously, especially since raising rates would not be practical. Why pay if you don't have to? The system is really no different from any other pork-barrel project, being 100 percent gratis. In this sense the loans are actually investments, as ownership always resides in the nation's capital. And if the investment doesn't pay impressive dividends, well, that's Washington's problem--Congress just made a dumb mistake.

Federal involvement has been an ongoing problem in the Columbia river system's development. Dams were built at the behest of the special interests that would benefit from them-- aluminum companies, irrigation interests, inland ports, etc.-- and many of the main-stem dams on the Columbia and Snake rivers would not have been built without federal funds. Many of these projects were simply too big to earn a rate of return sufficient for private financing, particularly when there was no market for the energy without BPA's ambitious transmission-line investments. Had it not been for federal intervention, hydroelectric development would have probably continued on its pre-BPA course as exemplified by smaller dams, such as Pacific Power and Light's Merwin Dam on the Lewis River, which do not damage fish runs nearly as much as main-stem facilities.

With the exception of the fishing interests, the Northwest eagerly welcomed federal development of the Columbia River. The projects represented jobs both during and after construction, and BPA's transmission-line program was expected to bring modern conveniences to a large section of the country. Now, however, after almost 50 years of BPA guidance, the bill has come due. In light of WPPSS's problems, the decline of the aluminum industry, and the booming Alaskan salmon industry, many Northwesterners must be asking themselves if trading the fisheries resource for the aluminum industry and the big main-stem dams was smart. That decision must be lived with, but one thing is certain: the federal government is the problem, not the solution, in the Northwest. The solution must begin with the termination of federal influence in Northwest energy matters.

The Real Solution: Privatization vs. Regionalization

The Grace Commission recommended selling the assets of the system, ridding the federal government of financial responsibility for it and putting an end to BPA's annual dippings into the Treasury for more "loans."[33] The commission recognized the cold fact that BPA has never earned the federal government a dime, that this pattern would likely continue, and that the federal government should not be involved in the utility business.

Selling the system would have many benefits for the taxpayer. If the system's assets were sold, not only would the taxpayer receive the system's cash value but BPA's borrowing authority would be terminated, since the costs of the system would be transferred to the purchasing party. In FY 1985, total Treasury borrowings by BPA reached $433 million, or 4.71 percent of the $9.174 billion total system investment. Such annual borrowing must be seen as burdensome to a nation facing huge deficits that must be eliminated.

Opposition to selling the system would no doubt be strong. particularly from preference customers who would see their longheld subsidy crumble and who, generally speaking, are the least able to finance generating facilities. Others would also object, for as financially troubled as the system is, it imparts a sense of security to those interests who benefit from it. BPA's costs to the taxpayer may be staggering--as are the costs of hundreds of similar programs throughout the country--but the energy interests know that they will always be able to grease a congressional wheel to obtain public assistance to reduce their electricity bill. If the system is sold, there will no longer be a government to complain to about the price of energy. At the most fundamental level, sale of the system's assets would redistribute the Columbia River system's energy to the highest bidder in an open and competitive market. And the free market, stern disciplinarian that it is, is always feared by those who have been receiving government subsidies for 50 years, even though the market is often the best treatment for all concerned.

Under such a sales plan, private parties--aluminum companies, private or public utilities, or even investment groups--would present offers to the federal government for a given facility. Utilities could obtain a BPA facility to meet future energy needs, rather than constructing coal, nuclear, or conservation resources. Such a facility could also breathe new life into an aluminum company. Cheap hydro power would substantially reduce energy costs--a major component of the price of aluminum--and make plant efficiency, which is a problem in Northwest aluminum plants, much less critical. If an aluminum company could purchase half of a hydro facility, its energy problems would be over, for with every passing year the energy would become cheaper, thereby increasing the competitiveness of its reduction plant. Investment consortiums could invest in the system's facilities as well, marketing the power on their own much as an oil company drills for oil and then markets it.

From the Northwest's overall perspective, the obvious fear associated with sale of the system's assets is that large non-regional investment concerns would buy up the facilities and then sell the power to higher-priced markets outside the region, leaving the Northwest without any energy supplies. That is not likely to happen, however, if for no other reason than that the government would not allow a regionwide blackout or brownout to occur. It is also highly unlikely that regional energy interests would not bid high enough to gain control of the energy resources necessary to meet their needs. As for the transmission facilities, regional interests would be in a buyer's position, as many of the facilities are useful only to the utility districts that they serve. Because there is only a limited number of prospective buyers, the price would almost surely drop.

Furthermore, if it were deemed necessary, legislation could be engineered to give existing BPA customers priority in purchasing the generating facilities. For example, if only existing BPA customers were allowed to purchase the

facilities during a period of, say, 10 years, BPA's existing customers would likely have enough time to find or build alternative sources of energy should they not want to purchase a BPA facility, or to accrue the funds necessary to buy such a facility. At the end of the 10-year period, the remaining facilities could be sold to non-BPA customers as well. This is not to say that the government must sell a facility for the best offer it can get; it should be allowed to keep an asset if a fair bid is not tendered.

Over the past four or five years, the shortcomings and failures of the 1980 act have been widely acknowledged, and there have been repeated calls for change in Congress--calls that up to now have gone unheeded but that one day may succeed. The state and local governments in BPA's service area sense that change might come, that federal budget restraints may affect BPA spending, and that the federal government may get more involved in BPA's regional affairs. Local entities seeking more control of the hydro energy know that they must be willing to increase their share of the system's cost burden if they are to gain more control and influence over BPA.

The concept of a regional agency purchasing BPA is now in vogue. Although a far better idea than the status quo, it is a weak alternative to BPA's liquidation. Under regionalization, the four states in BPA's service area would form a joint operating agency to purchase BPA from the federal government, thus localizing the costs and benefits of the system. The price the government would receive would simply be the loans that built the system, with the new agency making good-faith and timely efforts to repay them. The Treasury would be closed to the new regional agency. Consequently, if the agency sought funding for tragically wasteful nuclear, conservation, or transmission programs, it would have to inquire elsewhere.

Regionalization would be a mixed blessing for both the federal government and the region. The federal government would finally see some progress in the restitution of BPA's debt because the agency would lose its borrowing authority while still making payments on existing debt. On the other hand, the federal government would face the risk that should the region's energy situation ever change, Northwesterners would be the beneficiaries, as they would own the system. A change is not expected, however, for some time; surplus energy is forecast for 20 years or more. Therefore, if the federal government maintains control of BPA, it must brace itself for more of BPA's forays into the Treasury, further reducing the chance of any future return on the federal investment.

A regional buyout of BPA has advantages and disadvantages for the Northwest as well. One disadvantage would be the loss of borrowing authority to fund construction, conservation, and dam-maintenance programs, as well as repayment reform on existing loans. One advantage would be regional control of a completely operational energy source that has extremely low production costs.

Regionalization has some general problems, though, that could reduce its chance of long-term success. Most important, the new regional agency would not necessarily be excluded from involvement in central planning, conservation, nuclear, or other programs. Taking in nearly $2 billion in sales annually, the agency could dispense that money, and probably other money as well through loan guarantees, deficit financing, and other devices. Although the agency could be legally precluded from these activities, much as BPA itself once was, the law could later be changed to allow the agency to return to its classical BPA form.

An obvious question about regionalization is whether the Northwest should support yet another government agency to play politics with electricity rates and supplies. Energy is much too important to be left to the government. It would be better to let individuals freely decide to purchase or sell electricity at mutually agreed-upon prices; likewise, it would be better for sales revenues to flow directly to the producers and sellers of electricity, rather than through a government agency. Regionalization of government regulation and interference would not necessarily prevent failure. From a general taxpayer perspective, the best that can be said about regionalization is that it would be better than doing nothing at all, for only the region would be saddled with the price of government energy regulation there--added costs, wasteful programs, and other burdens.

Selling the system's assets would be better than regionalization because it would restore the free market to an economic sector that is drowning in the red ink and failed projects of government regulation. Freedom of contract should replace government coercion, leaving special interests to fend for themselves and leaving consumers and utilities free to decide, without the distorting effects and hidden costs of government subsidies, what facilities and resources will meet

their future energy needs. Only when this freedom is restored will inexpensive and abundant energy return to the Northwest, and, with it, economic prosperity.

FOOTNOTES

[1] Bonneville Project Act, P.L. 329 (H.R. 7642), 75th Cong., 1st sess.

[2] Anthony Netboy, The Columbia River Salmon and Steelhead Trout: Their Fight for Survival (Seattle: University of Washington Press, 1980), pp. 20-23. More specific and largely concurring information is available in Joseph A. Craig and Robert L. Hacker, The History and Development of the Fisheries of the Columbia River, Bulletin of the Bureau of Fisheries, vol. 49, bull. no. 23 (Washington: Government Printing Office, 1940).

[3] See Netboy, pp. 34-55.

[4] BPA is a self-financing agency under which the system is built largely with funds from the Treasury to be paid back from rates. If BPA has a revenue shortfall at the end of the year, the balance can be "deferred" and paid out of the next year's rates. These deferrals are not always small; a $65 million deferral in FY 1983 brought BPA's cumulative deferral to $217 million. These deferrals have since been paid off.

[5] Department of Energy, Columbia River Power for the People: A History of the Policies of the Bonneville Power Administration (Washington: Government Printing Office, 1981), pp. 49-51.

[6] Larry Hittle et al., "Pacific Northwest Power Generation, Multi-Purpose Use of the Columbia River, and Regional Energy Legislation: An Overview," Environmental Law 10 (1980): 262-66.

[7] Department of Commerce, Energy and the Primary Aluminum Industry (Washington, November 1984), p. 5.

[8] Columbia River Power, pp. 273-78.

[9] "Planned capability" is what a facility was planned to produce. "Output" is what a plant actually produces after it is put into operation. Under WPPSS, the participants (i.e., the utilities that belong to WPPSS) purchased shares in the planned capability of the facility, not the output; for many of the WPPSS plants, the output never materialized.

[10] Columbia River Power, pp. 223-26.

[11] Federal Columbia River Transmission System Act, P.L. 93-454 (S. 3362), 93d Cong., 2d. sess., enacted October 18, 1974.

[12] Hittle et al., pp. 272-73. This source cites City of Portland v. Munro, Civ. no. 77-928 (D. Or., November 14, 1977). Also, the Oregon state legislature passed the Domestic and Rural Power Authority Act (1977 Laws, chap. 388), which would legally form a statewide public utility that would seek to purchase power from BPA for Oregon's domestic and rural customers. The state would then contract with local utilities to transmit the power.

[13] Pacific Northwest Electric Power Planning and Conservation Act, P.L. 96-501, 96th Cong., 2d. sess., December 5, 1980.

[14] Ibid., sec. 5(b)(1).

[15] Ibid., sec. 6.

[16] Ibid., sec. 4(e)(1).

[17] Ibid., sec. 8(d)(3).

[18] Ibid., sec. 4(a).

[19] Ibid., sec. 5(c).

[20] Numerous lawsuits have been filed regarding the determination of generation costs, and it is likely that they will drag on for some time. One issue of contention, for example, is whether an IOU's taxes should be considered a generation cost. For a brief explanation of the lawsuits, see Department of Energy, Bonneville Power Administration Budget for Fiscal Year 1986 (Washington: Government Printing Office, 1985), pp. BP-62, BP-63.

[21] Planning and Conservation Act, sec. 7(c)(1)(b).

[22] Ibid., sec. 7(b).

[23] BPA Budget for 1986, p. BP-12.

[24] The recent closing of Martin Marietta's aluminum smelter at The Dalles, Oregon, will cause demand in the DSI sector to fall considerably.

[25] Fiscal Year 1984 Generation and Sales Statistics shows the aluminum industry providing $629 million of BPA's total revenue of $1.849 billion.

[26] The Public Power Council filed suit against BPA over the increasing nature of the preference rate in Public Power Council v. Johnson, no. 84-7564 (9th Cir., August 29, 1984).

[27] BPA Budget for 1986, pp. BP-1, BP-16-BP-23.

[28] BPA will pay up to 85 percent of the cost of residential conservation measures. The author, who was employed for 18 months by Far West Energy Management of Longview, Washington, which performed energy audits under BPA's conservation program, is intimately familiar with that program. The audits are highly inaccurate and often show a home conserving more energy than it previously used, which would result in the meter spinning backward. These audits, or "non-audits," as they should be called, are the measures BPA uses to disburse its conservation funds.

[29] The aluminum industry accounted for a little under one-third (24 billion kilowatt-hours) of BPA's energy deliveries and a little over one-third ($629 million) of its revenues, in 1984. Since only 10 smelters account for these totals, every smelter that shuts down represents a significant decrease in demand and revenue. See Fiscal Year 1984 Statistics.

[30] BPA Budget for 1986, p. BP-8.

[31] Pacific Northwest Utilities Conference Committee, "The OMB Proposal to Restructure BPA's Debt Repayment Method: Analysis of the Economic Impacts," draft report, March 21, 1985.

[32] Fiscal Year 1984 Statistics.

[33] President's Private Sector Survey on Cost Control, Report on the Department of Energy, the Federal Energy Regulatory Commission and the Nuclear Regulatory Commission (Washington: Government Printing Office, 1983), pp. 137-38.