The Pacific Northwest Electric Power Planning And Conservation (And Thermal Power Plant Relief) Act

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I. INTRODUCTION

Supporters of the proposed Pacific Northwest Electric Power Planning and Conservation Act¹ have not produced satisfactory answers to two fundamental questions. First, why does the region require significant new incentives for the construction of nuclear and coal-fired power plants? Second, why must Congress link urgently needed encouragement of conservation and renewable energy measures to the creation of such incentives?

On the most crucial issue, from an environmental perspective, there appears to be general agreement among the bill’s sponsors in both chambers of Congress: the Bonneville Power Administration (BPA) should acquire express statutory authority to underwrite the development of thermal power plants by contracting in advance to purchase their capability. The BPA commitments would take the form of a guarantee to plant sponsors that BPA would pay for a facility’s entire rated output of energy throughout its projected life, even if that facility never produced a single kilowatt-hour of electricity.² If the recipient of such a pledge were an investor-owned utility, it could put aside

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² See H.R. 8157, supra note 1, § 3(19)(A). This section would authorize the BPA Administrator to acquire “electric power, including the actual or planned electric power capability of generating facilities.” The Senate Report on S. 885 specifies that “the phrase ‘actual or planned capability’ is meant to include the planned output of a generating facility, whether or not operating or operable in whole or in part . . . .” S. REP. No. 272, 96th Cong., 1st Sess. 23 (1979).
otherwise justified fears that its state regulatory commission might compel the utility’s stockholders to absorb the staggering costs of an unproductive thermal energy gamble. Similarly, if the recipient of the guarantee were a publicly owned utility, it could count on the entire region’s ratepayers to assume the risk of losses that otherwise would fall on its own short-tempered electorate. This “guaranteed purchase authority” is only one of several beneficent gestures to the thermal power industry that emerge from a close reading of Senator Jackson’s “Conservation Act.” No purpose essential to the professed aims of the bill is served by these anomalous provisions.

II. THE DUBIOUS CASE FOR GUARANTEED PURCHASE AUTHORITY

The Congressional findings set out in the bill\(^3\) are unimpeachable. Recent developments have demonstrated the need “to encourage . . . efficiency in the use of electric power, . . . and the development of renewable resources within the Pacific Northwest”\(^4\) through a regional planning process involving extensive public participation. BPA, which dominates a field of relatively small private and consumer-owned utilities, is an obvious candidate for administering conservation programs and spurring development of renewable energy resources. In principle, many of the mechanisms the bill would establish are unobjectionable: a Regional Council—with representatives from Idaho, Montana, Oregon, and Washington—charged with preparing and implementing a regional electric power plan, which gives top priority to conservation and renewable energy resources; public hearings prior to adoption of the plan and at periodic intervals thereafter; rate adjustments reflecting utilities’ conservation records; technical and financial assistance for conservation programs undertaken by BPA’s customers; and demonstration projects to determine the feasibility of various conservation measures and renewable resource applications.\(^5\) The last thing one would expect to see appended to such a list is a scheme for expediting construction of conventional thermal power plants. Yet that is precisely what emerges, in the guise of a “last resort” accompanied by the almost apologetic explanation that its omission would preclude BPA from executing the

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3. See H.R. 8157, supra note 1, § 2.
4. Id. § 2(1).
5. Id. §§ 4-6.
region-wide requirements contracts which figure so largely in the bill's design. That assertion is simply false.

At least four recent studies have concluded that no thermal power plants, other than those already under construction, will be needed to serve the Pacific Northwest through at least 1995, if currently feasible and cost-effective conservation strategies and renewable resource applications are pursued. Thus, there is a threshold doubt that BPA would need to purchase the output of any new plants in order to sign the requirements contracts contemplated in the bill. As a result, the General Accounting Office has counseled strongly against "firm [BPA] commitments in the near future to help finance conventional thermal power plants in the Pacific Northwest."

Even assuming all those studies are wrong, and utility projections showing a need for new thermal capacity are credible, nothing in current law or practice prevents those utilities from putting construction dollars behind their dour forecasts; the region already has sixteen coal and nuclear plants in operation or under development. An argument can be made for authorizing BPA to purchase the output of plants which have been completed and certified operational, if that proves necessary to fulfill the new BPA contractual obligations contemplated in the bill. What defies understanding is that Congress seems bent on going much further, by brushing aside the cautionary influence of existing market and regulatory forces and inviting prospective plant sponsors to ignore the lessons of recent cost overruns, delays, and unplanned shutdowns.


8. U.S. General Accounting Office, supra note 7, at viii. A subsequent GAO report concluded that "at this time, Bonneville is not adequately prepared to construct or oversee the construction of large generating facilities." U.S. General Accounting Office, Impacts and Implications of the Pacific Northwest Power Bill iii (Sept. 4, 1979).

9. A review of Northwest energy supply options did not convince the General Accounting Office that regional utilities needed federal assistance to obtain the capital needed for new generating plants. U.S. General Accounting Office, supra note 7, at 7.2.
III. HOW A LAST RESORT CAN TAKE TOP PRIORITY

The low priority expressly assigned to thermal power plants\(^\text{10}\) appears to circumscribe the likelihood that the bill would stimulate unnecessary construction. If a combination of cost-effective conservation measures and renewable resources could meet the region’s needs, BPA would not promote thermal development;\(^\text{11}\) if not, surely new power plants are preferable to blackouts and chaos. However plausible that statement might seem as an abstract proposition, it does not justify the bill’s treatment of purchase authority. Decisions about power plant construction must be made on the basis of projections, not contemporaneous facts. The extraordinarily long leadtimes associated with any nuclear or coal-fired facility necessarily mean that BPA purchase authority could not eliminate an imminent supply shortfall, or even one anticipated a decade hence.\(^\text{12}\) The decision whether to acquire plant capability would hinge on necessarily speculative projections of demand levels toward the end of the twenty-year period covered in the proposed regional power plan.

Under such circumstances, it is important to consider the institutional predispositions of the agency designated to make the projections. Senator Jackson has tellingly observed that “[t]he more I’ve looked at forecasting, whether it’s weather, energy, or economics forecasting, the more I’ve become convinced that more often than not it’s Russian roulette.”\(^\text{13}\) BPA may soon have an unparalleled opportunity to validate Senator Jackson’s metaphor; the bill invites the Regional Council to delegate its planning and forecasting responsibilities to BPA personnel.\(^\text{14}\)

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10. “The plan shall . . . give priority to resources which the Council determines to be cost-effective. Priority shall be given: first, to conservation; second, to renewable resources; third, to generating resources utilizing waste heat or generating resources of high fuel conversion efficiency; and fourth, to all other resources.” H.R. 8157, supra note 1, § 4(e)(1).

11. See id. §§ 4(e), 6.

12. The Bonneville Power Administration concedes as much. Administrator Sterling Munro admitted in recent testimony that “[i]t is too late now to start a new coal-fired or nuclear power project—if that’s what people decide they want—to help during the ‘80’s . . . .” Testimony of Sterling Munro, before a joint meeting of the House and Senate Energy Committees of the Washington State Legislature 4 (Jan. 17, 1980) (memo on file with the Senate Energy and Utilities Committee, Olympia, Wash.).


14. The Council is instructed, when determining its staff needs, to take “into account such information and analyses as are, or are likely to be, available from other
Citizens need not look far for evidence of the kind of planning that is likely to emerge from a Council induced to rely primarily on BPA expertise. In 1976, BPA and its client utilities prepared a long-range forecast of area loads and resources that covered the time period contemplated in the bill. The forecast estimated that 1995-1996 demand would be more than two and one-half times the 1975 level, and called for construction of some twenty-six new large-scale nuclear or coal-fired power plants.15 To put that figure in perspective, the sponsors of five Washington nuclear plants currently foresee a final construction bill of $17.3 billion, pending the next round of unforeseen cost overruns.16 By 1980, utility projections of demand growth had dropped somewhat, but they still showed a deficit of almost 5,500 average megawatts for the region (the output of eight to nine large thermal plants) during the 1995-1996 operating year, even if all eleven nuclear and coal-fired units now planned or under construction were then in operation.17 Moreover, BPA Administrator Sterling Munro recently stated that the projections at issue "may be too low."18 At least four independent studies vigorously contest these forecasts, concluding that the utilities’ calculations pervasively fail to take the potential contribution of conservation and renewable resources into account.19

However, it is the Bonneville Power Administration, not the authors of those independent studies, which is most likely to

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sources pursuant to provisions of this Act." H.R. 8157, supra note 1, § 4(a)(3). In addition, “[u]pon request of the Council . . . the head of any Federal agency is authorized to detail or assign to the Council . . . any of the personnel of such agency to assist the Council in the performance of its functions under this Act.” Id. § 4(c)(5). The Senate report is still more candid: “[I]t is intended that the [BPA] Administrator fully utilize his expertise and staff to assist the Council in [formulating the plan] and in any subsequent effort to amend the plan.” S. Rep. No. 272, supra note 2, at 23-24.


18. S. Munro, Our Cloudy Crystal Ball 4 (Jan. 18, 1980) (remarks before the Seattle Federal Executive Board) (copy on file at Bonneville Power Administration, Portland, Or.).

19. See note 7 supra and accompanying text.
emerge as the Regional Council's primary technical assistant. If the agency persists in its traditional skepticism about the total contribution such measures can make, while simultaneously retaining an inflated view of the Northwest's future energy needs, the result will be a regional plan relying primarily on the bill's "least favored" alternative: thermal power plants. The problem lies not so much in the speculative nature of the projections involved, but in the demonstrable likelihood that BPA has already predetermined the key issues adversely to the goals enumerated by the bill's draftsmen. In the world as BPA sees it, even if cost-effective conservation and renewable resources are given highest priority, the region ends up with little of either.

BPA Administrator Sterling Munro has repeatedly stated that the least expensive electric power generation options currently available to the Northwest, "except for some forms of conservation and some existing opportunities for cogeneration," are large-scale nuclear facilities. That attitude is incompatible with the bill's goal of promoting renewable resources. Munro's views on conservation are also a matter of record: he sees maximum possible BPA effort under the bill producing potential savings of 500 to 1,000 megawatts ("one-half to one big thermal power plant"). If the Council accepts both that conclusion and the high demand growth projections of the region's utilities, the unavoidable prospect is a surge of unnecessary new thermal power plant construction.

IV. THE ANATOMY OF GUARANTEED PURCHASE AUTHORITY: FURTHER GROUNDS FOR CONCERN

Even if the Regional Council produced a plan that did not expressly license BPA to acquire the capability of thermal resources not already in existence, a BPA Administrator bent on such a course might be difficult to restrain. The Senate version of the bill offered the loophole of a regional plan intentionally vague in its mandate and prohibitions; the House sensibly

20. See, e.g., Munro, Twenty Questions 4 (Jan. 24, 1980) (remarks before the Electric Club of Oregon, Portland, Oregon) (copy on file at Bonneville Power Administration, Portland, Or.).

21. Testimony of Sterling Munro, supra note 12, at 7.

22. "It is intended that the plan will not be a highly detailed operational document but instead will be a broad policy document which addresses major issues involved in planning and development of resources including conservation." S. Rep. No. 272, supra note 2, at 24.
inserted a requirement that the plan specify "the approximate amounts of power the Council recommends should be acquired by the Administrator on a long-term basis and . . . the types of resources from which such power should be acquired."\(^\text{23}\) However, the Administrator can disregard the Council's recommendation if he finds that a different course "is needed to meet [his] obligations under this Act."\(^\text{24}\) Put another way, if BPA forecasts clash with those of the Council, BPA will prevail—provided, to be sure, that Congress expressly concurs in a federal statute "enacted after the date of the enactment of this Act."\(^\text{25}\) Little comfort can be gleaned from the insertion of that procedural prerequisite, when what it accompanies is a vehicle for nullifying the very regional planning mechanism that supposedly constitutes the bill's primary justification.

The foregoing discussion hardly exhausts the bill's generosity in matters thermal. For example, on no basis more substantial than a preliminary finding of probable justification,\(^\text{26}\) the BPA Administrator could sign a truly remarkable contract with the prospective sponsor of a conventional power plant. That contract would guarantee the sponsor full reimbursement, from the pockets of all Pacific Northwest ratepayers, for his "investigation and preconstruction expenses," excluding procurement of capital equipment or construction materials, should a state or federal authority subsequently refuse to grant necessary permits, thereby aborting the project.\(^\text{27}\) Once the regional plan is promulgated, its provisions may limit or preclude the use of this prerogative; in the interim, however, the Administrator will be relying on his own assessments of the need for, and cost-effectiveness of, proposed coal-fired and nuclear plants.\(^\text{28}\)

The bill's treatment of preconstruction expenses affords an obvious means for undermining the planning priorities enumerated elsewhere in the legislation. The same observation applies to another provision that commendably allows the Administrator to award billing credits for utility-instigated conservation measures or renewable resource applications,\(^\text{29}\) only to vitiate the

\(^{23}\) H.R. 8157, supra note 1, § 4(e)(3)(D).
\(^{24}\) Id. § 6(c)(1)(D)(i).
\(^{25}\) Id. § 6(c)(3)(B).
\(^{26}\) See id. §§ 6(c)(1)(D), 6(f)(1).
\(^{27}\) Id. § 6(f).
\(^{28}\) See id. § 6(f)(1).
\(^{29}\) See id. § 6(h).
gesture by rendering thermal power plants eligible for the same treatment.30 Indeed, the Administrator apparently must grant rate relief for construction of conventional facilities "[i]f a customer so requests" and the resource is "not inconsistent with the plan."31 The distinction—if any—between "not inconsistent" and "consistent" will probably have to be resolved by the judicial branch.

Given their lack of experience with alternatives, utilities have an understandable, albeit unfortunate, tendency to look to new conventional plants first when confronting the possibility of increased demand. The prospect of billing credits affords them an additional incentive to go on indulging this preference. Moreover, by rendering plants under construction prior to the bill’s effective date eligible for such benefits,32 this provision may give investors a windfall that they had no reason or right to expect when they launched their enterprises. Of course, BPA would only be authorized to grant credits in an amount equivalent to the savings realized by the region,33 but that calculation will be made in the murky realm of BPA-dominated planning and prediction. As noted earlier, the incumbent BPA Administrator takes a uniquely sanguine view of the "cost-effectiveness" of nuclear facilities now under construction in the Northwest.

V. TAMING THE REGIONAL POWER BILL

While the warnings of the preceding sections are amply grounded, enactment of regional power legislation need not lead inexorably to a rash of ground-breakings for new coal and nuclear power plants. The bill does not preclude the emergence of an adequately staffed, independent Regional Council, which will decline to serve as a proxy for the Bonneville Power Administration. Should that occur, the prospects for regional planning and BPA investment are not wholly negative from an environmental perspective.

30. See id. § 6(h)(1)(B).


32. Id. § 6(h)(1)(A).

33. "The rate impact to the Administrator’s other customers of granting the credit shall be no greater than the rate impact such customers would have experienced had the Administrator been obligated to acquire resources in an amount equal to that actually produced by the resource for which the credit is granted." Id. § 6(h)(4). See S. Rep. No. 272, supra note 2, at 30-31.
In September, 1980, the Natural Resources Defense Council (NRDC) released a comprehensive analysis of the Northwest’s energy options that is functionally indistinguishable from the regional plan contemplated in the bill. That study produced specific projections of the regional potential for cost-effective conservation, renewable resource applications, and generating resources utilizing waste heat. The NRDC scenario identified readily achievable increases in the efficiency with which electricity is used in the residential, commercial, agricultural, and industrial sectors. In addition, the study anticipated modest contributions, by 1995, from several new energy supply sources.

34. R. Cavanagh, L. Mott, R. Beers & T. Lash, Choosing an Electrical Energy Future for the Pacific Northwest: An Alternative Scenario (1980) [hereinafter cited as Alternative Scenario]. The study, which expands and updates an earlier NRDC assessment of the region’s conservation potential, was prepared under contract to the U.S. Department of Energy.

35. See id.

36. Some of the study’s key assumptions include:

A. Manufacturing Sector: By 1995, industries throughout the region will install cogeneration facilities at sites identified in a recent BPA survey. The aluminum industry, which consumes more than one-fifth of the Northwest’s electricity, will cut 1975 energy requirements per pound of output 20% by 1985 and 40% by 1995 (four major Northwest plants have already met the 1985 target). Other industries will reduce 1975 requirements per unit of output 10-17% by 1985 and 18-19% by 1995, in line with recent projections by the Lawrence Berkeley Laboratory. Id. at 76-100.

B. Commercial Sector: As mercury vapor street lights wear out, they will be replaced with more efficient high pressure sodium units. Existing buildings (circa 1976) still in use in 1995 will adopt highly cost-effective energy efficiency improvements identified in a 1976 study commissioned by the Bonneville Power Administration. These include lowering lighting levels outside work areas, reducing water heating temperatures, and reducing energy waste in ventilation systems. New buildings will comply with construction standards already in force throughout most of the Northwest. Id. at 61-75.

C. Residential Sector: Over the next fifteen years, insulation will be installed in the ceilings, walls and floors of 90% of existing (circa 1976) single-family dwellings, and in 85% of multiple-family units. Comparable percentages of existing homes will install storm windows and weather-stripping, and will set thermostats at an average of 62 degrees Fahrenheit at night. Financing mechanisms for spreading the costs of the installation measures are described in detail. New homes will be constructed to meet efficiency standards that are actually somewhat less stringent than those established in draft nationwide Building Energy Performance Standards (BEPS) recently released by the U.S. Department of Energy. By 1995, 20% of single-family homes will incorporate passive solar design features (e.g., south-facing windows, installation of stone, brick or water heat-storage masses); heat pumps will provide space heating in 25% of single-family homes and seven per cent of multiple-family units; 20% of single-family homes will have heat pump water heaters, and 8% will have solar water heaters. Id. at 34-60.

D. Agricultural Sector: Efficiency improvements in irrigation pumps, plus modest contributions from small wind machines and photovoltaic cells, will displace 10% of the conventionally generated electric energy that would otherwise be needed for irrigation in 1995. Id. at 101-10.
including waste heat from industrial sources (cogeneration) and wind.\textsuperscript{37}

The NRDC analysis incorporates a number of conservatisms, to preclude overstatement of opportunities for demand reductions.\textsuperscript{38} The scenario emphatically does not describe a “no growth” society; NRDC’s calculations are based on BPA’s bullish economic and population growth projections for the region.\textsuperscript{39}

In a preliminary review of the scenario’s recommendations, a BPA task force conceded: “[T]he [NRDC] scenario does include an array of conservation and renewable resources that are cost effective when compared against the costs of new electricity generation. As such, full implementation of those measures would result in lower costs to the Northwest.”\textsuperscript{40} “Full implementation of those measures” would also bring the Northwest through 1995 at least with a comfortable electricity supply surplus, even if only three of the seven coal and nuclear units now under construction were completed.\textsuperscript{41} The scenario outlines

\textsuperscript{37.} Id. at 83-84, 96-99 (cogeneration); 112-17 (wind energy).

\textsuperscript{38.} For example, the scenario does not impose major demands on renewable energy technologies. Total wind-generated electricity by 1995 is assumed to equal less than 75\% of the potential identified in Oregon alone by the Governor’s Wind Task Force. Id. at 114. No wood-fired power plants or other biomass converters (e.g., wood stoves) are assumed. Photovoltaics are restricted to limited agricultural applications. Id. at 102-04. Hydropower availability under the scenario reflects only the “worst-case” drought year estimates used by the Bonneville Power Administration for planning purposes.

In addition, the scenario anticipates continued heavy reliance on electric energy to meet space heating needs of residential and commercial buildings. For example, the scenario assumes that 95\% of the homes built between 1975 and 1995 will be electrically heated. Id. at 39. The NRDC calculations also accommodate the possible, but unlikely, construction of a new energy-intensive aluminum plant at Umatilla, Oregon. Id. at 82.

\textsuperscript{39.} Id. at 19-20. BPA’s population projections significantly exceed those of the U.S. Census Bureau. Id.


\textsuperscript{41.} See ALTERNATIVE SCENARIO, supra note 34, at 26-27. Phased adoption of the scenario’s recommendations would result in electrical energy surpluses for the region in 1985 and 1995, even if the following coal and nuclear units were deferred:

\textbf{Under construction}: Washington Public Power Supply System Units 4 & 5 (nuclear/Washington); Coalstrip Units 3 & 4 (coal/Montana).

\textbf{Planned}: Skagit Units 1 & 2 (nuclear/Washington); Pebble Springs Units 1 & 2 (nuclear/Oregon); plus the equivalent of at least seven nuclear units comparable in size to these planned facilities, which would be needed to eliminate the 1995 deficit that the region’s utilities currently anticipate. Cf. PACIFIC NORTHWEST UTILITIES CONFERENCE COMMITTEE, supra note 17, Table 1, (showing energy deficit of 5438 average megawatts in 1995-96 water year, assuming adverse river flows).
a detailed agenda for all major institutions that play a role in shaping the region's energy future: state and local governments, investor-/ and consumer-owned utilities, and BPA. Recommended measures include revised rate structures, rehabilitation programs for residential and commercial buildings, appliance efficiency standards, conservation-oriented building codes, efficiency-related restrictions on utilities' access to cheap BPA energy, and financing mechanisms designed to minimize the burden of the new programs on individual homeowners and businesses.\textsuperscript{42} None of these proposals can be dismissed as visionary; all have a firm basis in existing precedents.\textsuperscript{43} Equally important, all are clearly within the regional power bill's contemplation as "model conservation standards," which must form an integral part of the regional plan.\textsuperscript{44}

The clear import of the NRDC scenario is that no new thermal power plants would find their way into a regional plan that first exhausted all feasible and cost-effective conservation, renewable energy, and cogeneration measures. Thus, if the NRDC analysis is substantially correct, the Regional Council could not authorize any BPA guarantees of new coal or nuclear capacity without unlawfully disregarding the availability of cost-effective alternatives.

Moreover, the Council could not blind itself to the self-evident irrelevance of multi-billion dollar structures with twelve-/to fourteen-year lead times to the electrical energy needs of the next decade. Pressures to authorize the underwriting of such enterprises will be countered, to some extent, by the necessity of finding responses to increasing threats of curtailment during the

\textsuperscript{42} See Alternative Scenario, supra note 34, at 169-250.

\textsuperscript{43} For example, utilities throughout the region are or soon will be investing in residential conservation measures, id. at 182-86; all four Northwest states have adopted conservation-oriented building codes, id. at 188-91; appliance efficiency requirements will soon be in force nationwide, 42 U.S.C. § 6295(c) (1976); 45 Fed. Reg. 43976, 44033-45 (1980); the President has imposed temperature controls for commercial buildings in the Northwest and elsewhere, pursuant to the Energy Policy and Conservation Act, 42 U.S.C. §§ 6261, 6262 (1976); the Bonneville Power Administration has issued proposed conservation requirements to guide allocation of its electricity supplies, 45 Fed. Reg. 58938-45 (1980).

\textsuperscript{44} "Model conservation standards . . . shall include . . . standards applicable to (A) new and existing structures, (B) utility, customer and governmental conservation programs, and (C) other consumer actions . . . designed to produce all power savings that are cost-effective for the region and economically feasible for consumers, taking into account financial assistance made available to consumers. . . ." H.R. 8157, supra note 2, § 4(f)(1).
1980's. As the preceding sections attest, the impetus for new thermal development under the bill is strong enough to ensure a sharp struggle over the framing and implementation of the regional power plan. Nevertheless, the release of the NRDC scenario buttresses the conclusion that vigilant and informed public participation can help prevent the transformation of a "planning and conservation" statute into a bill for the relief of thermal power plant sponsors.

VI. CONCLUSION

There is every reason to encourage cost-effective conservation and development of renewable energy resources in the Pacific Northwest. There is no reason whatever to undermine that effort by creating additional encouragement for costly and environmentally destructive facilities that will drain funds away from conservation and renewable resources. Supporters of the proposed Pacific Northwest Electric Power Planning and Conservation Act often speak as if removing these new incentives would ban thermal plants from the Northwest altogether. Instead, of course, the result would simply be to leave in place the existing balance of risks and benefits governing investment decisions. The bill's sponsors have thus far succeeded in holding urgently needed programs hostage to speculative ventures that the region would be better off without. However, it may yet prove possible to annul this misbegotten alliance, through constructive advocacy addressed to the Regional Council. That is a challenge environmentalists must be prepared to accept.

45. The latest official forecast by the Pacific Northwest Utilities Conference Committee issued a blunt warning: if the Columbia River's waters drop to levels comparable to those of the 1928-1932 drought years, and demand growth is not checked, the region faces annual supply shortfalls that could exceed 3000 average megawatts—the requirements of three Seattles—in five of the next eleven years. PACIFIC NORTHWEST UTILITIES CONFERENCE COMMITTEE, WEST GROUP FORECAST OF POWER LOADS AND RESOURCES: JUNE 1980 - JUNE 1991 2 (1980).