

Washington Law Review

Volume 58 | Number 2

4-1-1983

Darkness to Dawn? Generating and Conserving Electricity in the Pacific Northwest: A Primer on the Northwest Power Act

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DARKNESS TO DAWN? GENERATING AND CONSERVING ELECTRICITY IN THE PACIFIC NORTHWEST: A PRIMER ON THE NORTHWEST POWER ACT

Roger D. Mellem*

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The author greatly appreciates the indispensable assistance rendered by Ralph Cavanagh, Jim Curtis, Larry Dean, Hector Durocher, Nick Dodge, Robert Greening, Roy Hemmingway, Larry Hittle, Larry Kitchen, Janet McLennan, Ben Merrill, Eric Redman, Hugh Smith, Terry Thatcher, and Brett Wilcox, all of whom took considerable time from their professional involvement with the Northwest Power Act to criticize earlier drafts of this article. The author accepts full responsibility for the errors which remain despite the reviewers' best efforts. The author is very grateful for the criticism, advice, and support given by Derrick Bell, John Bonine, Chapin Clark, Dick Hildreth, Susan Howard, Glenn Klein, Cory Streisinger, and Dominick Vetri. Special thanks to Joanne Brady. Re-

*Green Douglas fir where the waters cut through,
Down her wild mountains and canyons she flew,
Canadian Northwest to the ocean so blue,
It's roll on, Columbia, roll on!
Roll on, Columbia, roll on.
Roll on, Columbia, roll on!
Your power is turning our darkness to dawn,
So roll on, Columbia, roll on!*

—*Woody Guthrie*¹

I. INTRODUCTION

The Pacific Northwest's energy future is being shaped today by two institutions. The first is the Pacific Northwest Electric Power and Conservation Planning Council ("Planning Council")² which was created by the Pacific Northwest Electric Power Planning and Conservation Act ("Northwest Power Act").³ The other institution is the Bonneville Power Administration, ("BPA"),⁴ created forty-six years ago by Congress. Together the Planning Council and BPA are making crucial electrical energy decisions affecting the region's economy and environment.

This article is intended to familiarize the reader with the structure of the region's electrical energy supply and demand as that structure has been altered by the Northwest Power Act. Part II of the article will discuss BPA's power sales obligations, which are imposed by statute and contract. Part III will consider what basic power resources BPA already has to meet its obligations. Part IV will examine BPA's options for meeting or reducing its contractual obligations.

Three sections of the Northwest Power Act are particularly relevant: sections 4, 5, and 6. Section 5 of the Act⁵ increases BPA's power sales obligations and restricts the agency's ability to reduce those obligations; these obligations are governed by contracts entered into under section 5's specifications. Section 6 of the Act⁶ grants BPA new authority to acquire resources, including conservation, to meet its section 5 obligations, and

search for this article was supported in part by a 1981-82 National Wildlife Federation Environmental Conservation Fellowship. The author gratefully acknowledges the Federation's financial assistance.

1. Guthrie, *Roll on Columbia*, in A. LOMAX, *THE FOLK SONGS OF NORTH AMERICA* 443 (1960).

2. See 16 U.S.C. § 839b(a) (Supp. V 1981).

3. Pub. L. No. 96-501, 94 Stat. 2697 (1980) (codified at 16 U.S.C. § 839 (Supp. V 1981)) [hereinafter cited as Northwest Power Act].

4. See Bonneville Project Act, Pub. L. No. 75-329, 50 Stat. 731 (1937) (codified as amended at 16 U.S.C. § 832 (1974)).

5. Northwest Power Act, *supra* note 3, § 5, 16 U.S.C. § 839c (Supp. V 1981).

6. *Id.* § 6, 16 U.S.C. § 839d (Supp. V 1981).

requires BPA to use its new authorities to meet those increased obligations.⁷ Section 4 of the Act⁸ constrains BPA's exercise of its new resource acquisition authorities. Specific provisions of these sections will be addressed where appropriate.

The Northwest Power Act is the latest in a long series of regional policies governing the marketing of federally generated power.⁹ Today approximately half of the electric power generated in the Pacific Northwest is federally produced and marketed.¹⁰ The other half is produced at dams and power plants owned by the region's investor-owned and "generating public" utilities.¹¹ The latter are those utilities that are not investor-owned and that have independent sources of power covering all or part of their load.¹² (The "nongenerating publics" are those utilities not investor-owned that are entirely dependent on BPA for their power supply.¹³)

BPA does not sell power directly to consumers.¹⁴ Instead it sells power at wholesale to four classes of customers:¹⁵ Privates (the investor-owned utilities¹⁶), Publics (both generating and nongenerating publicly-owned

7. *Id.* § 6(a)(2), 16 U.S.C. § 839d(a)(2) (Supp. V 1981).

8. *Id.* § 4, 16 U.S.C. § 839b (Supp. V 1981).

9. For a history of BPA and its policies, see BONNEVILLE POWER ADMINISTRATION, COLUMBIA RIVER POWER FOR THE PEOPLE: A HISTORY OF POLICIES OF THE BONNEVILLE POWER ADMINISTRATION (1981) [hereinafter cited as BPA HISTORY].

10. BONNEVILLE POWER ADMINISTRATION, 1981 PROGRAM AND FINANCIAL SUMMARY 43 (Apr. 1982) [hereinafter cited as 1981 SUMMARY]. BPA markets power produced by the Federal Columbia River Power System. See *infra* part IIIA.

11. For a summary of such generation, see 1981 SUMMARY, *supra* note 10, at 43.

12. For a list of such utilities see *id.* For more information about these utilities see PACIFIC NORTHWEST UTILITIES CONFERENCE COMMITTEE, LONG-RANGE PROJECTION OF POWER LOADS AND RESOURCES FOR RESOURCE PLANNING tables U-6 to -16 (Aug. 26, 1982) [hereinafter cited as 1982 BLUE BOOK].

"Load" means "[t]he amount of electric power or energy delivered or required at any specified point or points on a system. Load originates primarily at the energy-consuming equipment" of the consumers. BONNEVILLE POWER ADMINISTRATION, BPA DEFINITIONS 40 (June 1981) [hereinafter cited as BPA DEFINITIONS].

13. This means all of the publicly-owned utilities or municipalities, public utility districts, and cooperatives listed in the 1981 SUMMARY, *supra* note 10, at 46-47, except those referenced in note 12 *supra*.

14. The Act defines "consumer" as "any end user of electric power." Northwest Power Act, *supra* note 3, § 3(5), 16 U.S.C. § 839a(5) (Supp. V 1981). Thus an Industry, see *infra* note 20, technically is a consumer; by common agreement among power planners, however, an Industry is only called a customer. See *infra* note 15.

15. The Act defines "customer" as "anyone who contracts for the purchase of power from the Administrator pursuant to this Act." Northwest Power Act, *supra* note 3, § 3(7), 16 U.S.C. § 839a(7) (Supp. V 1981).

16. For a list of such customers, also known as "IOUs," see 1981 SUMMARY, *supra* note 10, at 47.

utilities or municipalities,¹⁷ public utility districts,¹⁸ and cooperatives¹⁹), Industries (fifteen direct-service industrial concerns²⁰), and Agencies (federal agencies²¹). The Industries, Agencies, and nongenerating Publics purchase almost all of the electric power they use from BPA; Privates and generating Publics have their own sources of generation—the other, nonfederal half of regional electric power production—but these utilities may also purchase power from BPA.²²

The Northwest Power Act enhances BPA's ability to meet the power demands of its four customer classes by giving the agency new authority²³ to acquire "resources." "Resource" is defined to include both "(A) electric power, including the actual or planned electric power capability²⁴ of generating facilities, or (B) actual or planned load reduction resulting from direct application of a renewable energy resource by a consumer, or from a conservation measure."²⁵ However, the Act's constraints²⁶ on

17. For a list of such customers see *id.* at 46.

18. For a list of such customers see *id.*

19. For a list of such customers see *id.* at 46–47.

20. For a list of such customers, also known as "DSIs," see *id.* at 47. While seventeen Industries are listed, Cominco American purchased no power from BPA, and Stewart Elsner is an irrigator rather than an Industry.

21. For a list of such customers see *id.*

22. See generally 1982 BLUE BOOK, *supra* note 12, at tables U-1 to -17, A-1, A-22 (setting out Northwest power usage and resources). The 1982–1983 estimated firm load for Agencies is 218 average megawatts; Industries, 2540 average megawatts; Publics, 6607 average megawatts; and Privates, 8162 average megawatts. Combined with a 346 average megawatt loss in transmission, the region's estimated firm load is 17,873 average megawatts. See *id.* at table A-1. Line 29 of tables 2 and U-1 to -17 indicates the minimum allocations of power customers are entitled to receive from BPA. Privates are entitled to a minimum allocation for 1982–1983 of 49 average megawatts, see *id.* at Private, table 2, while Publics are entitled to a minimum allocation for 1982–1983 of 4779 average megawatts. See *id.* at Public, table 2.

An average megawatt is a measure of average power over a given time period. To determine the average megawatts, divide the total megawatt hours in the time period by the number of hours in the time period. For example, if 10 megawatt hours of energy are measured over a five-hour period, two average megawatts would be the rate at which power is delivered. Proposed Policy and Formula to Guide Allocation of Firm Electric Energy and System Reserve Energy From the Federal Columbia River Power System, 44 Fed. Reg. 57,824, 57,832 (proposed Oct. 5, 1979) [hereinafter cited as Proposed Allocation Policy].

23. Northwest Power Act, *supra* note 3, § 6, 16 U.S.C. § 839d (Supp. V 1981).

24. "Capability" means "[t]he maximum load that a machine, station, or system can carry under specified conditions for a given time interval, without exceeding approved limits." PUBLIC POWER COUNCIL. POWER PLANNING PRIMER C-2 (1981).

25. Northwest Power Act, *supra* note 3, § 3(19), 16 U.S.C. § 839a(19) (Supp. V 1981) (footnote added).

26. The most important constraint will be the Regional Conservation and Electric Power Plan, scheduled for adoption by the Planning Council in April, 1983. See *id.* § 4, 16 U.S.C. § 839b (Supp. V 1981).

Representative Jim Weaver of Oregon's fourth congressional district may be another constraint on BPA's resource acquisition decisions and an important influence for conservation investments. In the

BPA's exercise of its new resource acquisition authorities turn what would otherwise be a power production act into the most innovative piece of energy conservation legislation ever enacted by Congress.

II. ESTABLISHING BPA'S OBLIGATIONS

BPA's obligations under the Northwest Power Act to sell power to its customers are governed by section 5 of the Act²⁷ and by contracts entered into under that section. BPA offered new contracts to its customers on August 28, 1981.²⁸ The Act gave customers one year within which to accept BPA's offer.²⁹ During that year, certain changes were negotiated to the generic "requirements" contract.³⁰ Following a Ninth Circuit decision not to extend the deadline,³¹ all but six of BPA's existing customers signed new contracts.³² Although the execution of new contracts between BPA and its customers did not in itself increase regional energy demand, that action has obligated BPA to meet a potentially larger share of the region's electric energy load.³³ This obligation has made it more likely that truly regional power planning will occur under the Planning Council's guidance.³⁴

BPA is responsible under the Act for meeting the *full requirements* of

98th Congress he has been named chairman of the House Interior and Insular Committee's new Subcommittee on Mining, Forestry Management, and the BPA.

27. Northwest Power Act, *supra* note 3, § 5, 16 U.S.C. § 839c (Supp. V 1981).

28. See Final Action Concerning Power Sales and Residential Exchange Contracts Required by Pacific Northwest Power Planning and Conservation Act, 46 Fed. Reg. 44,340 (1981).

29. Northwest Power Act, *supra* note 3, § 5(g)(2), 16 U.S.C. § 839c(g)(2) (Supp. V 1981).

30. Changes to the generic requirements contract were proposed in June, 1982, and adopted in October, 1982. See Proposed Amendments to Utility Power Sales Contracts Required for Settlement of Lawsuits and Full Implementation of Pacific Northwest Power Planning and Conservation Act, 47 Fed. Reg. 25,308 (proposed June 7, 1982) [hereinafter cited as Proposed Contract Amendments]; Final Action Concerning Amendments to Utility Power Sales Contracts Required for Settlement of Lawsuits and Full Implementation of Pacific Northwest Electric Power Planning and Conservation Act, 47 Fed. Reg. 46,800 (1982) [hereinafter cited as Contract Amendments]. See also *infra* notes 91-94 and accompanying text (further discussing amendments to generic contracts).

31. *City of Seattle v. Johnson*, Civ. No. 82-7468 (9th Cir. Aug. 26, 1982) (order of dismissal) (copy on file with the *Washington Law Review*).

32. *Finally—the Region Signs On*, 1 NORTHWEST ENERGY NEWS 3-4 (Sept./Oct. 1982).

33. BPA will meet a larger fraction of the region's electric energy load if the Privates and generating Publics place increased contractual demands on BPA. See *infra* part IIB1a, especially text accompanying notes 91-94.

34. The Regional Conservation and Electric Power Plan, see *supra* note 26, will directly constrain only BPA's resource acquisition decisions and not decisions of individual BPA customers. See Northwest Power Act, *supra* note 3, § 4(d)(2), 16 U.S.C. § 839b(d)(2) (Supp. V 1981). See also *id.* § 10(a), 16 U.S.C. § 839g(a) (Supp. V 1981) (stating that the Act has no effect on utility powers). Thus, as BPA meets a larger share of the regional load, more resource acquisition decisions will be subject to regional planning constraints.

those Publics that do not have their own sources of power.³⁵ However, BPA is responsible for meeting only the *net requirements* of the utilities that do have independent sources of generation.³⁶ Thus BPA becomes responsible for meeting the load growth of the Privates and generating Publics, in addition to any load in excess of "dedicated resources"³⁷ that BPA supplied in the year prior to enactment of the Act.³⁸

This part first analyzes BPA's minimum obligations to its customers imposed by section 5.³⁹ These statutory obligations determine the least amount of power BPA must have available to meet demand.⁴⁰ Then the contractual framework for determining BPA's actual (rather than minimum) obligations will be analyzed by type of contract. The Act anticipates that BPA will acquire sufficient resources to meet the demands of its customers, and limits BPA's ability to reduce its obligations to the statutory minimum.⁴¹ The contractually-based actual demands will determine the amount of power BPA must supply and its need to acquire additional resources.

A. *BPA's Statutory Minimum Obligations*

Section 5 of the Northwest Power Act instructed BPA to offer new power sales contracts to its customers.⁴² The section specifies the minimum amounts of BPA power customers can always rely on. Only if BPA is unable to meet its share of the region's future load growth will the minimum statutory obligations come into play. Under such circumstances BPA would suffer from "insufficiency."⁴³

The Act gives BPA the authority in section 6 to acquire resources,⁴⁴

35. See *infra* text accompanying notes 100-02.

36. See *infra* text accompanying notes 80-90.

37. See *infra* note 86 and accompanying text.

38. See *infra* text accompanying notes 85-90.

39. Northwest Power Act, *supra* note 3, § 5, 16 U.S.C. § 839c (Supp. V 1981).

40. The Act required BPA to sign contracts hypothetically entitling customers to demand more power than the agency had available to supply. See *infra* text accompanying notes 46-53. Congress "deemed" BPA to have sufficient resources to sign such contracts. See Northwest Power Act, *supra* note 3, § 5(g)(7), 16 U.S.C. § 839c(g)(7) (Supp. V 1981).

41. See *infra* part IVE.

42. Northwest Power Act, *supra* note 3, § 5(g), 16 U.S.C. § 839c(g) (Supp. V 1981).

43. See *infra* text accompanying notes 253-56. BPA issued Notices of Insufficiency to its Preference customers on June 24, 1976. See Letter from Administrator Donald P. Hodel to BPA Preference Customers (June 24, 1976) (copy on file with the *Washington Law Review*). That action was a major impetus for the Northwest Power Act. Those notices meant that BPA would no longer be able to meet the load growth needs of Publics and Agencies. The reasons: no additional hydroelectric sites along the Columbia River were available, the net-billing possibility had been exhausted, and BPA lacked authority to acquire outright any additional power generating or conserving resources.

44. Northwest Power Act, *supra* note 3, § 6, 16 U.S.C. § 839d (Supp. V 1981).

reducing the chance that insufficiency will be declared in the future. However, in the event of insufficiency, the Act specifies the minimum contractual entitlements of BPA's customers.⁴⁵ On a planning basis these entitlements total the Federal Base System (FBS) Resources,⁴⁶ three-fourths of the industrial load,⁴⁷ and any power BPA has purchased from utilities or on their behalf.⁴⁸

Federal Base System Resources are the pre-Act power that BPA had available to market, now or in the future, and replacements for that power.⁴⁹ Since BPA has made no dramatic recent resource acquisitions, one wonders how the new Act can suddenly impose on BPA a minimum obligation to supply all the power it currently has (the FBS Resources) plus three-fourths of the industrial load. The answer is that the customers who are entitled to the full FBS Resources, the Publics and Agencies,⁵⁰ are not using it all. BPA is presently selling power from FBS Resources to the Industries. What the Act requires is that the full FBS Resources be available to meet the load growth of the Publics—BPA's "preference"⁵¹

45. See *infra* part IVE.

46. See Northwest Power Act, *supra* note 3, § 3(10), 16 U.S.C. § 839a(10) (Supp. V 1981) (defining "FBS Resources"); *infra* text accompanying note 49; *infra* part III.

47. BPA can freely restrict power deliveries to one-fourth of the industrial load to protect its ability to serve its firm loads. See H.R. REP. NO. 976, 96th Cong., 2d Sess., Part II, at 48, *reprinted in* 1980 U.S. CODE CONG. & AD. NEWS 6023, 6046 [hereinafter cited as House Interior Report]; H.R. REP. NO. 976, 96th Cong., 2d Sess., Part I, at 62 (1980) [hereinafter cited as House Commerce Report]; *infra* text accompanying notes 191–93. Three-fourths of the industrial load is the BPA's firm load obligation. 1982 BLUE BOOK, *supra* note 12, at table 2 n.1.

However, if insufficiency results from planned resources being delayed or available at a lesser capability than planned, BPA may restrict deliveries to one-half of the industrial load. See *infra* note 193 and accompanying text.

"Firm load" or "firm load obligation" means power which BPA is obligated to supply at all times except for reason of certain uncontrollable forces or service provisions. See *generally supra* note 12 (defining "load"); BPA DEFINITIONS, *supra* note 12, at 29 (defining "firm power"). The amount of firm power which BPA has available to meet its obligations is called its "Firm Energy Load Carrying Capability." See *infra* part IVC.

48. Northwest Power Act, *supra* note 3, § 5(e), 16 U.S.C. § 839c(e) (Supp. V 1981). See also *infra* text accompanying notes 55–59 (discussing BPA purchases from utilities).

49. See *infra* part III.

50. See Northwest Power Act, *supra* note 3, § 5(b)(6)(B), 16 U.S.C. § 839c(b)(6)(B) (Supp. V 1981).

51. The original Bonneville Project Act, like other Federal power marketing laws, contains a "preference clause". This clause requires that BPA, although statutorily authorized to sell power to all types of customers, must give first right and priority to that power to "public bodies and cooperatives". "Public bodies" are defined to include "States, public power districts, counties, and municipalities, including agencies or subdivisions of any thereof". If a shortage of power is contemplated, BPA's other customers must do without, in order that "public bodies and cooperatives" continue to receive the Federal power to which they are entitled.

House Interior Report, *supra* note 47, at 27, *reprinted in* 1980 U.S. CODE CONG. & AD. NEWS 6023, 6025. See *generally* BPA HISTORY, *supra* note 9, at 69–78 (discussing preference clause).

customers—and the Agencies.⁵² As their demand grows, BPA must acquire sufficient resources to meet that growth. More precisely, as that preference customer and Agency demand grows, BPA must acquire sufficient resources to meet that growth, and to meet the demands of the Industries, which will, in effect, be displaced from access to the FBS Resources.⁵³

1. *Publics and Agencies*

Section 5 provides that contractual entitlements of Publics and Agencies may not be restricted to less than the FBS Resources. This allows these customers to plan with more certainty by guaranteeing that their loads may not be contractually restricted until those loads total more than the FBS Resources.⁵⁴

In addition, section 5(e)⁵⁵ protects utilities that provide resources to BPA under the section 6 resource acquisition provisions. Section 5(e) provides that “[t]he contractual entitlement of firm power of any customer from whom, or on whose behalf, the Administrator⁵⁶ has acquired electric power pursuant to section [6] may not be restricted below the amount of electric power so acquired from, or on behalf of, such customer.”⁵⁷ The section also provides that customer entitlements are additive in the event of insufficiency.⁵⁸ For example, a Public is entitled to the amount of power specified in its power sales contract plus the amount, if any, sold to BPA under section 6. But the total entitlements of any customer are limited to the customer’s total load requirements with any excess offered first to other customers of the same class who may be short.⁵⁹

52. See Northwest Power Act, *supra* note 3, § 5(b)(6)(B), 16 U.S.C. § 839c(b)(6)(B) (Supp. V 1981). See also House Interior Report, *supra* note 47, at 47 (discussing Act’s protection of preference customers), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6045; House Commerce Report, *supra* note 47, at 60 (same).

53. The Act overallocated BPA’s present power supply by committing the full FBS Resources to the Publics and Agencies while requiring BPA to offer new contracts to the Industries. See *supra* note 40.

54. See House Commerce Report, *supra* note 47, at 60.

55. Northwest Power Act, *supra* note 3, § 5(e), 16 U.S.C. § 839c(e) (Supp. V 1981).

56. “ ‘Administrator’ means the Administrator of the Bonneville Power Administration.” *Id.* § 3(2), 16 U.S.C. § 839a(2) (Supp. V 1981). Peter Johnson is the current Administrator.

57. *Id.* § 5(e), 16 U.S.C. § 839c(e) (Supp. V 1981) (footnote added). However, a customer is not entitled to the power it has provided BPA as a replacement for FBS Resources. See *id.* § 5(e)(2), 16 U.S.C. § 839c(e)(2) (Supp. V 1981).

58. *Id.* § 5(e)(2), 16 U.S.C. § 839c(e)(2) (Supp. V 1981).

59. *Id.* § 5(e)(1), 16 U.S.C. § 839c(e)(1) (Supp. V 1981). See also House Interior Report, *supra* note 47, at 48 (discussing effect of § 5(e)(1) on customer entitlements), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6046; House Commerce Report, *supra* note 47, at 63 (same).

2. Privates

Although Publics and Agencies are entitled to the full FBS Resources, Privates also have a minimum entitlement. As for the Publics and Agencies, this entitlement is to the amount of power BPA has purchased from them or on their behalf.⁶⁰ Privates are also entitled to the amount of power they have exchanged with BPA under the provisions for rate relief to the Privates' domestic and small farm load,⁶¹ but this exchange does not affect BPA's load/resource balance.⁶²

3. Industries

The Industries are entitled to new contracts supplying amounts of power "equivalent" to those amounts provided by the industrial firm power contracts of January or April, 1975.⁶³ "Equivalent" means "power in amounts equal to, but not greater than" that provided by the 1975 contracts.⁶⁴ At a minimum, BPA must plan resources to meet three-fourths of the industrial firm load.⁶⁵ In the event of shortages, contractual provisions negotiated under the Act allow BPA significant leeway.⁶⁶

B. BPA's Contractual Obligations

The insufficiency provisions establish BPA's minimum statutory obligations to sell power to a customer or customer class. But the Act anticipates that BPA will be obligated by contract to supply more than the statutory minimum.

60. Northwest Power Act, *supra* note 3, § 5(e)(1), 16 U.S.C. § 839c(e)(1) (Supp. V 1981).

61. *Id.* § 5(c)(6), 16 U.S.C. § 839c(c)(6) (Supp. V 1981). *See also* House Commerce Report, *supra* note 47, at 61 (discussing effect of utility power exchanges on utility entitlements). *See generally* Bonneville Power Administration, Residential Purchase and Sale Agreement (Aug. 22, 1981) (contractual provisions with Privates).

62. The "residential exchange" was a politically important component of the Act which allows Privates to exchange their own higher priced power at its average system cost for an equivalent amount of lower cost BPA power, in an amount sufficient to meet increasing percentages of the demand of the Privates' domestic and small farm load. The exchange brings rate relief to the Privates' residential and farm customers. The exchange does not require BPA to acquire additional resources. Thus, BPA treats exchange sales as a load, and exchange purchases as a resource, for rate-making but not for resource planning purposes. *See generally* Northwest Power Act, *supra* note 3, § 5(c), 16 U.S.C. § 839c(c) (Supp. V 1981) (exchange provisions); House Interior Report, *supra* note 47, at 34-35, 47-48 (discussing exchange provisions), *reprinted in* 1980 U.S. CODE CONG. & AD. NEWS 6023, 6032-33, 6045-56; House Commerce Report, *supra* note 47, at 60-61 (same).

63. Northwest Power Act, *supra* note 3, § 5(d)(1)(B), 16 U.S.C. § 839c(d)(1)(B) (Supp. V 1981).

64. House Commerce Report, *supra* note 48, at 29, *reprinted in* 1980 U.S. CODE CONG. & AD. NEWS 5989, 5995.

65. *See supra* note 47 and accompanying text.

66. *See infra* part IVB1.

Section 6(a)(2) provides that "the Administrator shall acquire . . . sufficient resources— (A) to meet his contractual obligations."⁶⁷ Therefore, BPA must project future demand for purposes of planning resource acquisition.⁶⁸ On April 2, 1982, BPA released the draft of its first forecast under the Act.⁶⁹ That draft predicted that electrical consumption would grow at an average annual rate of 1.7% during the next twenty years.⁷⁰ This rate is considerably less than the growth rates forecasted previously by regional utility planners.⁷¹ The lower forecast, combined with financing difficulties, caused BPA to recommend that commercial operation be postponed from two to five years for Washington Public Power Supply System ('WPPSS') nuclear project 1.⁷² Decreasing projections of future demand had already been a major factor in the termination of WPPSS nuclear projects 4 and 5. These developments mean, at least for the foreseeable future, that BPA need not rush into a vigorous program of resource acquisition. Nevertheless, the obligations imposed on BPA by signed contracts are important because the contracts translate any increased demands for electricity into potentially major BPA resource acquisition actions. These contracts bind BPA for twenty years.⁷³

Although there are four BPA customer classes, there are only two basic types of contracts. One type is called a "requirements contract" because it obligates BPA to meet the net firm energy requirements of requesting

67. Northwest Power Act, *supra* note 3, § 6(a)(2)(A), 16 U.S.C. § 839d(a)(2)(A) (Supp. V 1981).

68. However, the Act specifically directs the Planning Council to include "a demand forecast of at least twenty years . . . and a forecast of power resources estimated by the Council to be required to meet the Administrator's obligations" in the Regional Conservation and Electric Power Plan. *Id.* § 4(e)(3)(D), 16 U.S.C. § 839b(e)(3)(D) (Supp. V 1981). Congress anticipated that BPA would rely on this forecast. See House Commerce Report, *supra* note 47, at 55.

69. BONNEVILLE POWER ADMINISTRATION, BONNEVILLE POWER ADMINISTRATION FORECASTS OF ELECTRICITY CONSUMPTION IN THE PACIFIC NORTHWEST, 1980-2000 (DRAFT) (Apr. 1982) [hereinafter cited as DRAFT FORECAST]. See 47 Fed. Reg. 15,156 (1982).

70. See DRAFT FORECAST, *supra* note 69, at 5. The final forecast predicted that electrical consumption would grow at a 1.6% annual rate. See BONNEVILLE POWER ADMINISTRATION, BONNEVILLE POWER ADMINISTRATION FORECASTS OF ELECTRICITY CONSUMPTION IN THE PACIFIC NORTHWEST, 1980-2000 (FINAL) 5 (July 1982).

71. See, e.g., PACIFIC NORTHWEST REGIONAL COMMISSION, ENERGY FUTURES NORTHWEST NORTHWEST ENERGY POLICY PROJECT FINAL REPORT 66-67 (1978).

72. Bonneville Power Administration, Analysis of Options Related to Completion of Washington Public Power Supply System Projects Nos. 1, 2, and 3, at 1 (Apr. 16, 1982) (unpublished memorandum) (copy on file with the *Washington Law Review*).

73. Bonneville Power Administration, Power Sales Contract: Metered Requirements and Computed Requirements § 2 (Aug. 25, 1981) [hereinafter cited as Requirements Contract]; Bonneville Power Administration, Power Sales Contract (for Industrial Customers) § 2(a) (Aug. 25, 1981) [hereinafter cited as Industrial Contract].

utilities and federal agencies.⁷⁴ The other type is called an “industrial firm power contract.”⁷⁵

1. Requirements Contracts

There are two types of requirements service. One is “computed requirements;”⁷⁶ the other is “metered requirements.”⁷⁷ Computed requirements service is offered to utilities that own generating resources and sell nonfirm energy from such resources. Privates and generating Publics purchase power from BPA on a computed requirements basis.⁷⁸ Metered requirements service is offered to utilities that have no significant generating resources. Nongenerating Publics purchase power from BPA on a metered requirements basis.⁷⁹

a. Computed Requirements Service

Most of the region’s generating utilities at some time had “computed demand” contracts with BPA.⁸⁰ No Private has had such a contract since 1973, when BPA did not renew its contracts with Privates.⁸¹ But most of the generating Publics had such contracts when the Northwest Power Act was enacted.⁸² These contracts were due to expire in the 1980’s and 1990’s.⁸³

There are three types of computed requirements service: actual computed requirements, planned computed requirements, and contracted requirements.⁸⁴ A customer purchasing on a computed requirements basis is required to continue to serve its load with its “dedicated resources.”⁸⁵

74. See Requirements Contract, *supra* note 73.

75. See Industrial Contract, *supra* note 73.

76. See Requirements Contract, *supra* note 73, §§ 3(i), 17.

77. See *id.* §§ 3(cc), 14.

78. Letter from Larry Kitchen, Public Utilities Specialist, BPA, to author, (Jan. 19, 1983) (copy on file with the *Washington Law Review*) [hereinafter cited as Kitchen letter].

79. *Id.*

80. *Id.*

81. See House Interior Report, *supra* note 47, at 29, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6027.

82. Kitchen letter, *supra* note 78. See House Interior Report, *supra* note 47, at 27, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6025.

83. See Proposed Allocation Policy, *supra* note 22, 44 Fed. Reg. at 57,843.

84. See Requirements Contract, *supra* note 73, § 17. “Computed requirements” service is the successor to “computed demand” contracts.

85. See Northwest Power Act, *supra* note 3, § 5(b)(1), 16 U.S.C. § 839c(b)(1) (Supp. V 1981); Kitchen letter, *supra* note 78. The term “Dedicated Resources” is used in the 1982 BLUE BOOK, *supra* note 12, at I-6. The Requirements Contract uses the term “Firm Resources.” Requirements Contract, *supra* note 73, §§ 3(t), 12. The Firm Resources Exhibit to the Requirements Contract uses

Dedicated resources are those resources that the customer had used to help serve its load in the operating year prior to the enactment of the Act, or those that are subsequently committed by the customer to serving its load, reduced by obsolescence and certain other factors.⁸⁶ Under actual or planned computed requirements service,⁸⁷ BPA is required to meet a customer's load less the "assured capability" of the customer's dedicated resources.⁸⁸ Assured capability is the peak and energy capability that the customer can deliver to its load on a firm basis.⁸⁹ As such a customer's load grows, BPA is required to meet that load growth as well as any load in excess of dedicated resources that BPA supplied in the year prior to enactment of the Act, and any load that was served by the utility's resources that were retired from service by the customer in accordance with its contract.⁹⁰

Contracted requirements service is an important option for BPA customers as a result of changes negotiated in the generic requirements contract after BPA offered new contracts under the Northwest Power Act.⁹¹ Contracted requirements service allows a customer to specify quantitatively how much power it wants BPA to supply during any seven-year period.⁹² Customers purchasing on this basis may ask for any amount of power from zero upwards, but BPA has an absolute right to reduce the

the term "Resources Dedicated to Firm Load." See *id.* at Exhibit I ("Firm Resources Exhibit"). "Committed Resources" is also used. These various terms are essentially synonymous.

86. See Northwest Power Act, *supra* note 3, § 5(b)(1), 16 U.S.C. § 839c(b)(1) (Supp. V 1981); Requirements Contract, *supra* note 73, § 12. See also 1982 BLUE BOOK, *supra* note 12, at table A-26 (listing dedicated resources for Northwest utilities).

87. Customers purchase on an actual computed requirements basis pursuant to § 17(c)-(f) of the Requirements Contract. See Requirements Contract, *supra* note 73, §§ 17(c)-(f), 3(a). Customers purchase on a planned computed requirements basis pursuant to § 17(a) of the Requirements Contract. See *id.* §§ 17(a), 3(gg). The differences are relatively minor.

88. See Northwest Power Act, *supra* note 3, § 5(b)(1), 16 U.S.C. § 839c(b)(1) (Supp. V 1981); Requirements Contract, *supra* note 73, §§ 5(a), 17(a), 17(c)-(f); House Interior Report, *supra* note 47, at 46, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6044.

89. See Northwest Power Act, *supra* note 3, § 5(b)(1)(A), 16 U.S.C. § 839c(b)(1)(A) (Supp. V 1981); Requirements Contract, *supra* note 73, §§ 3(c), 16; House Interior Report, *supra* note 47, at 46-47, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6044-45; House Commerce Report, *supra* note 47, at 59.

90. See Northwest Power Act, *supra* note 3, § 5(b)(1), 16 U.S.C. § 839c(b)(1) (Supp. V 1981); Requirements Contract, *supra* note 73, § 12(b); Kitchen letter, *supra* note 78. See generally House Interior Report, *supra* note 47, at 33 (describing BPA responsibilities relating to power sales), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6031-32.

91. Customers purchase on a contracted requirements basis pursuant to § 17(b) of the Requirements Contract, *supra* note 73. Amendments were proposed to this section in June, 1982, and adopted in October, 1982. See Proposed Contract Amendments, *supra* note 30, § F, 47 Fed. Reg. at 25,313-16; Contract Amendments, *supra* note 30, § 2(d), 47 Fed. Reg. at 46,803-05.

92. See Requirements Contract, *supra* note 73, § 17(b)(l); Proposed Contract Amendments, *supra* note 30, § F, 47 Fed. Reg. at 25,313-14; Contract Amendments, *supra* note 30, § 2(d), 47 Fed. Reg. at 46,803.

amount it will supply to the level of the customer's computed requirements needs.⁹³ The Privates have signed up with BPA on a contracted requirements basis and have asked for little or no power now.⁹⁴

Many features of computed requirements service have developed in the past two decades.⁹⁵ These include the methodology for determining the customer's assured capability, and the amount of power the customer is entitled to purchase from BPA.⁹⁶ The contracts offered by BPA provide a system of additional overrun charges if the customer takes more power from BPA than it is entitled to take.⁹⁷ Customers purchasing on a computed requirements basis are entitled to provide additional generation of their own to reduce their demand on BPA, provided they give BPA sufficient notice to avoid creating a surplus.⁹⁸ Customers are entitled to provide additional conservation without restriction.⁹⁹

b. Metered Requirements Service

A customer that purchases on a metered requirements basis is entitled to have BPA meet its full load.¹⁰⁰ Since most of the Publics lack generating facilities of their own, more BPA customers purchase on a metered requirements basis than on any other.¹⁰¹ This service makes BPA responsible for meeting both the present requirements of the contracting utilities and their future load growth.¹⁰² Agencies currently purchase on a metered requirements basis since they presently have little or no generation of their own.¹⁰³

93. See Requirements Contract, *supra* note 73, § 17(b)(6); Proposed Contract Amendments, *supra* note 30, § F, 47 Fed. Reg. at 25,313-14; Contract Amendments, *supra* note 30, § 2(d), 47 Fed. Reg. at 46,804.

94. Kitchen letter, *supra* note 78.

95. See BONNEVILLE POWER ADMINISTRATION, ENVIRONMENTAL REPORT PREPARED TO ACCOMPANY THE FINAL POWER SALES AND RESIDENTIAL EXCHANGE CONTRACTS 3-1 (Sept. 1981) [hereinafter cited as CONTRACTS ENVIRONMENTAL REPORT].

96. See *id.*; Requirements Contract, *supra* note 73, § 16.

97. See Requirements Contract, *supra* note 73, at Exhibit G ("Service Charges Exhibit"); CONTRACTS ENVIRONMENTAL REPORT, *supra* note 95, at 3-1. See also Requirements Contract, *supra* note 73, § 19(b)(1)(B) (providing for limited exceptions to overrun charges); *id.* at Exhibit F (describing exceptions to overrun charges).

98. Kitchen letter, *supra* note 78. See Requirements Contract, *supra* note 73, § 12(b).

99. Kitchen letter, *supra* note 78.

100. See Requirements Contract, *supra* note 73, § 14. A customer purchasing on a metered requirements basis must serve its load with any firm resources it has, see *id.* § 14(a), but such a customer will have few or no such resources.

101. Kitchen letter, *supra* note 78.

102. *Id.* See generally Requirements Contract, *supra* note 73, § 14(a) (discussing metered requirements service); House Interior Report, *supra* note 47, at 33 (describing BPA responsibilities relating to power sales), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6031.

103. Kitchen letter, *supra* note 78.

2. Industrial Firm Power Contracts

The Act obligated BPA to offer new contracts to Industries that had contracts in force on the date of enactment.¹⁰⁴ The new contracts obligate BPA to provide no more power than did the old contracts,¹⁰⁵ and they quantify the amount of power BPA is to provide. Contracts may not be offered to new Industries.¹⁰⁶ Under certain conditions of technological plant advancement, however, additional power may be sold to an existing Industry.¹⁰⁷

III. FEDERAL BASE SYSTEM RESOURCES: BPA'S INITIAL POWER SUPPLY

BPA's chief method for meeting its customers' power needs is to sell the electricity generated by the hydroelectric and thermal power plants that constitute the Federal Base System (FBS) Resources. The FBS Resources include three elements. The first element is the existing and future hydroelectric projects and project additions of the Federal Columbia River Power System (FCRPS).¹⁰⁸ The second element is the electric power previously contracted for by BPA under long term net-billing and other contracts and certain other resources acquired by BPA prior to the Act.¹⁰⁹ The third element is any replacements for the first two.¹¹⁰ Together the capability of these resources and the extent of regional energy demand growth will determine how soon BPA engages in substantial new resource acquisitions.

104. See Northwest Power Act, *supra* note 3, § 5(g)(1)(D), 16 U.S.C. § 839c(g)(1)(D) (Supp. V 1981). See also Northwest Power Act, *supra* note 3, § 5(d)(1), 16 U.S.C. § 839(d)(1) (Supp. V 1981) (authorizing BPA to sell to existing industrial customers). See generally House Commerce Report, *supra* note 47, at 61, 63 (discussing §§ 5(g)(1)(d) & 5(d)(1) of the Act).

105. See *supra* text accompanying notes 63-64.

106. Northwest Power Act, *supra* note 3, § 5(d)(2), 16 U.S.C. § 839c(d)(2) (Supp. V 1981). BPA offered a contract under the Act to Alumax Aluminum Co., which had plans to construct a new aluminum plant in the region, because the company had a pre-Act contract for future power purchases. Congress defined "existing direct service industrial customer" to include Alumax. See *id.* § 5(d)(4)(A), 16 U.S.C. § 839c(d)(4)(A) (Supp. V 1981). See also House Commerce Report, *supra* note 47, at 63 (discussing § 5 of the Act). Alumax has indefinitely deferred its plans for the smelter. *Alumax smelter deferred indefinitely*, Oregonian, Jan. 27, 1983, at D14, col. 1.

107. Northwest Power Act, *supra* note 3, § 5(d)(3), 16 U.S.C. § 839c(d)(3) (Supp. V 1981). The contracts offer an allowance for increased sales due to defined technological improvements, not including plant expansion. Industrial Contract, *supra* note 73, § 5(d). See also House Interior Report, *supra* note 47, at 48 (discussing BPA authority to sell power to Industries). *reprinted in* 1980 U.S. CODE CONG. & AD. NEWS 6023, 6046.

108. Northwest Power Act, *supra* note 3, § 3(10)(A), 16 U.S.C. § 839a(10)(A) (Supp. V 1981). For a list of these projects see 1982 BLUE BOOK, *supra* note 12, at tables 6-7.

109. Northwest Power Act, *supra* note 3, § 3(10)(B), 16 U.S.C. § 839a(10)(B) (Supp. V 1981).

110. *Id.* § 3(10)(C), 16 U.S.C. § 839a(10)(C) (Supp. V 1981).

A. *Federal Columbia River Power System*

The Federal Columbia River Power System (FCRPS) consists of the thirty federal hydroelectric dams on the Columbia River and its tributaries.¹¹¹ The FCRPS also includes any future regional federal dams or additional generation at existing dams.¹¹² Nine FCRPS projects are presently operated by the Bureau of Reclamation¹¹³ and twenty-one by the Army Corps of Engineers.¹¹⁴ Together they have a nameplate rating¹¹⁵ of approximately 18,800 megawatts¹¹⁶ and a firm energy capability of 7,540 average megawatts.¹¹⁷

The long term energy capability of FCRPS could be affected by several factors. Increased irrigation withdrawals could diminish the capability.¹¹⁸ Various constraints on operation of FCRPS projects, such as to protect navigation, recreation, or fish and wildlife values, could also diminish FCRPS firm energy capability.¹¹⁹ On the other hand, a treaty consummated with Canada enhances FCRPS capability.¹²⁰

111. For a list of these dams see 1981 SUMMARY, *supra* note 10, at 44–45.

112. See House Commerce Report, *supra* note 47, at 51; House Interior Report, *supra* note 47, at 39, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6037.

113. See 1981 SUMMARY, *supra* note 10, at 44.

114. *Id.*

115. “Nameplate rating” means “[t]he full-load continuous rating of a GENERATOR [“the machine which converts mechanical energy to electrical energy,” BPA DEFINITIONS, *supra* note 12, at 31] . . . under specified conditions as designated by the manufacturer.” *Id.* at 45. “Rating” means “[t]he load that a machine, station, or system can carry under standardized conditions.” *Id.* at 56. “Nameplate rating is generally less than, but for older equipment may be greater than, demonstrated capability of the installed machine.” *Id.* at 45.

116. 1981 SUMMARY, *supra* note 10, at 44.

117. Letter from Nicholas A. Dodge, Chief, Water Management Branch, North Pacific Division, Army Corps of Engineers, to author, (Dec. 9, 1982) (copy on file with the *Washington Law Review*). Another source lists the 1982–1983 capability of Federal hydroelectric projects as 7,613 average megawatts; generating Public hydroelectric projects, 1,601 average megawatts; and Private hydroelectric projects, 2,838 average megawatts. 1982 BLUE BOOK, *supra* note 12, at table A-3.

118. See Hittle, Larson, Randall & Michie, *Pacific Northwest Power Generation, Multi-Purpose Use of the Columbia River, and Regional Energy Legislation: An Overview*, 10 ENVTL. L. 235, 251–52 (1980).

119. The Planning Council’s Fish and Wildlife Program Water Budget will reduce FCRPS firm energy capability by approximately 550 average megawatts. See NORTHWEST POWER PLANNING COUNCIL, FISH AND WILDLIFE PROGRAM § 105 (Nov. 15, 1982) [hereinafter cited as FISH AND WILDLIFE PROGRAM].

120. Treaty on Columbia River Basin, Jan. 17, 1961–Sept. 16, 1964, United States-Canada, 15 U.S.T. 1555, T.I.A.S. No. 5638 (1964). See generally BPA HISTORY, *supra* note 9, at 227–36 (discussing Columbia Basin Treaty); BONNEVILLE POWER ADMINISTRATION, THE ROLE OF THE BONNEVILLE POWER ADMINISTRATION IN THE PACIFIC NORTHWEST POWER SUPPLY SYSTEM, INCLUDING ITS PARTICIPATION IN THE HYDRO-THERMAL POWER PROGRAM, APPENDIX A I-10 to -17 (July 22, 1977) (Draft Environmental Impact Statement) (same) [hereinafter cited as DEIS-APP.]; Blumm, *Hydropower v. Salmon: The Struggle of the Pacific Northwest’s Anadromous Fish Resources for a Peaceful Coexistence with the Federal Columbia River Power System*, 11 ENVTL. L. 211, 243–47 (1981).

B. *Net-Billed Plants and Other Resources*

FBS Resources include the thermal power that BPA contracted for in the late 1960's and early 1970's under net-billing arrangements with most of its Public customers.¹²¹ Under a net-billing arrangement, BPA would contract with a utility customer that had an ownership share in a thermal power plant under construction, or a contract to purchase power from the plant, for that customer's share of the future output of the plant.¹²² Since all net-billed customers were Publics who also purchased BPA power,¹²³ BPA would credit the customer's account with payments owed by BPA for future deliveries of power from the planned thermal project.¹²⁴ The utility owning or contracting for power from a plant received a guarantee that BPA would purchase the plant's future power output. This guarantee enabled the plant's sponsors to compete more effectively in the bond markets for needed capital construction funds.¹²⁵ Using the net-billing method, BPA supplemented its hydroelectric resources with considerable amounts of thermal resources including most of the planned capability of WPPSS nuclear projects 1, 2, and 3.¹²⁶

121. See generally House Interior Report, *supra* note 47, at 28-29 (discussing net billing), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6026-27; House Commerce Report, *supra* note 47, at 24-25 (same), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 5989, 5990-91; DEIS-APP., *supra* note 120, at I-20 to -22, I-37 to -39; BONNEVILLE POWER ADMINISTRATION, THE ROLE OF THE BONNEVILLE POWER ADMINISTRATION IN THE PACIFIC NORTHWEST POWER SUPPLY SYSTEM. INCLUDING ITS PARTICIPATION IN A HYDRO-THERMAL POWER PROGRAM I-16 to -17 (Apr. 1980) (Revised Draft Environmental Impact Statement) (same) [hereinafter cited as RDEIS].

122. House Interior Report, *supra* note 47, at 28, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6026; House Commerce Report, *supra* note 47, at 25, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 5989, 5991; RDEIS, *supra* note 121, at I-16.

123. The Privates "did not participate in net-billing, partly because BPA did not sell them any significant power to net bill against." House Interior Report, *supra* note 47, at 29, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6027.

124. See *supra* note 122. While BPA lacked statutory authority to assume direct payment for project capability, the agency determined that it had received approval for net-billing through its 1970 and 1971 congressional appropriations. See Public Works Appropriations Act for 1970, Pub. L. No. 91-144, 83 Stat. 323, 333 (1969); S. REP. NO. 528, 91st Cong., 1st Sess. 49-50 (1969); H.R. REP. NO. 548, 91st Cong., 1st Sess. 84 (1969); H.R. REP. NO. 697, 91st Cong., 1st Sess. 17 (1969) (Conference Report); Public Works Appropriations Act for 1971, Pub. L. No. 91-439, 84 Stat. 890, 899 (1970); S. REP. NO. 1118, 91st Cong., 2d Sess. 56 (1970); H.R. REP. NO. 1219, 91st Cong., 2d Sess. 90 (1970). "Net billing was specifically approved in the reports accompanying the Public Works Appropriations Acts of 1970 and 1971 . . . although some have criticized the appropriateness of this kind of congressional authority." House Interior Report, *supra* note 47, at 28, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6026.

125. See RDEIS, *supra* note 121, at I-16. The assurance of a market for the plant's output would reduce the risk to investors. The lower risk would be reflected in a lower interest rate for bonds. See House Interior Report, *supra* note 47, at 29, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6026.

126. See 1981 SUMMARY, *supra* note 10, at 61.

Under net-billing arrangements BPA acquired these resources:¹²⁷

<u>Project</u>	<u>BPA's Share</u>	<u>Projected In-Service Date</u>	<u>BPA's Share of Capacity in Megawatts</u>
WPPSS Nuclear Project #1	100%	(postponed) ¹²⁸	1,250
WPPSS Nuclear Project #2	100%	Feb. 1984	1,110
WPPSS Nuclear Project #3	70%	Dec. 1986	868
Trojan Nuclear Project	30%	Operational	<u>339</u>
			3,557

Net-billing only worked to the extent that a customer was making power purchases from BPA against which BPA's payments for the customer's share of a thermal project's capability could be netted. The combination of rapidly escalating costs for the WPPSS nuclear projects, the slow-down in the growth in demand for electricity, and the long construction schedules for the WPPSS projects simply exhausted the net-billing possibility.¹²⁹ As the costs of thermal power soared, the value of BPA's share of a thermal project's capability (the amount of money that BPA owed to a customer) simply exceeded the amount of money that the customer owed BPA for power purchases and against which the BPA purchases could be credited.¹³⁰ In addition, a 1972 Internal Revenue Service regulation precluded the use of tax-exempt financing for any additional plants from which BPA might acquire output or capability.¹³¹ Net-billing

127. *Id.*

128. See *supra* note 72 and accompanying text.

129. See generally RDEIS, *supra* note 121, at I-16 to -17 (discussing factors leading to exhaustion of net billing capacity); House Interior Report, *supra* note 47, at 29 (same), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6027.

130. See RDEIS, *supra* note 121, at I-16. See also WASHINGTON PUBLIC POWER SUPPLY SYSTEM, \$850,000,000 BOND ISSUE 9-10, 22 (Feb. 1, 1982) (discussing BPA and net billing deficit). However, since 1974 BPA has been able to pay cash to its net-billed customers when its net-billed obligations exceed its revenues from those customers. See Federal Columbia River Transmission System Act, Pub. L. No. 93-454, § 11(b)(6)(ii), 88 Stat. 1376, 1379 (1974) (codified as amended at 16 U.S.C. § 838i(b)(6)(ii) (1976 & Supp. V 1981)).

131. See Treas. Reg. 1.103-7 (1972), 26 C.F.R. 1.103-7 (1982). See also RDEIS, *supra* note 121, at I-17 (discussing 1972 tax regulation); House Commerce Report, *supra* note 47, at 25 (same), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 5989, 5991. "Output" means the power actually generated or conserved by a resource. "Capability" is defined at note 24 *supra*. For a discussion of

came to an end. This halt in BPA's ability to expand its power supply and the anticipated load growth of its preference customers caused BPA to issue Notices of Insufficiency to its Public customers, inform Industries that their contracts would not be renewed when they expired in the 1980's and early 1990's, and decline to renew its contracts with Privates when those contracts expired in 1973.¹³² It was these actions and the resulting political pressure from BPA's customers that ultimately led Congress to grant BPA statutory authority to acquire new resources.

In addition to the net-billed plants, FBS Resources include: the power from BPA's power exchange contracts with both Pacific Northwest and Pacific Southwest utilities;¹³³ the Department of Energy/NASA Goodnoe Hills wind turbine project;¹³⁴ and, most important, BPA's share of the WPPSS Hanford Project.¹³⁵

C. FBS Resources Replacements

FBS Resources include the firm capability of resources acquired by BPA to replace reductions in the capability of hydroelectric projects.¹³⁶ Such reductions may be caused by accidents, physical deterioration, or constraints on the use of streamflows not planned prior to the Act's passage.¹³⁷ FBS Resources also include resources BPA acquires to make up for any diminution in the electricity generated at federal hydroelectric projects as a result of decisions made under the Act to save fish.¹³⁸

the difference between output and capability, see House Commerce Report, *supra* note 47, at 38-40, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 5989, 6004-06.

132. See generally House Commerce Report, *supra* note 47, at 25 (discussing background of insufficiency notices), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 5989, 5991; House Interior Report, *supra* note 47, at 29-30 (same), reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6027-28.

133. See DEIS-APP., *supra* note 120, at 1-26. BPA's estimated 1982-1983 imports total 359 average megawatts. 1982 BLUE BOOK, *supra* note 12, at table A-5.

134. See Requirements Contract, *supra* note 73, § 7(c)(2)(G).

135. Congressional legislation provides half of the Hanford Project's capability for Privates and half for Publics. See Atomic Energy Commission Authorization Act for 1963, Pub. L. No. 87-701, § 112(e), 76 Stat. 599, 604 (1962). See generally DEIS-APP., *supra* note 120, at 1-23 to -24 (discussing Hanford Project); 1982 BLUE BOOK, *supra* note 12, at table A-10 (identifying project output).

136. Northwest Power Act, *supra* note 3, § 3(10)(C), 16 U.S.C. § 839a(10)(C) (Supp. V 1981). See also Requirements Contract, *supra* note 73, § 7(c)(3) (discussing reductions in hydroelectric capability).

137. See Requirements Contract, *supra* note 73, § 7(c)(3). See also *supra* note 119 and accompanying text (discussing factors reducing hydroelectric capability).

138. See Requirements Contract, *supra* note 73, § 7(c)(3). The Act provides that BPA shall acquire sufficient resources to assist in meeting the requirements of the Planning Council's fish and wildlife plan. Northwest Power Act, *supra* note 3, § 6(a)(2)(B), 16 U.S.C. § 839d(a)(2)(B) (Supp. V 1981). See *infra* text accompanying notes 237-42.

IV. BPA'S OPTIONS FOR MEETING OR REDUCING ITS CONTRACTUAL OBLIGATIONS

Section 6 of the Northwest Power Act grants BPA the legal authority to acquire sufficient resources to meet the obligations imposed by its section 5 power sales contracts.¹³⁹ In addition, section 6 retains BPA's existing authority to bridge short term gaps between unforeseen changes in its power supply and its customers' demands.¹⁴⁰ Section 6 also gives BPA certain options to reduce its contractual obligations.¹⁴¹

To meet its obligations, BPA must promote cost-effective¹⁴² conservation to reduce the projected demand.¹⁴³ BPA can also acquire cost-effective power-generating resources, but only after taking into account planned savings from conservation.¹⁴⁴ To meet demand gaps, BPA can draw on its "reserves"¹⁴⁵ under certain circumstances or can make short term purchases under the Federal Columbia River Transmission System Act.¹⁴⁶ To improve its load/resource balance, BPA can use reservoir storage through a concept known as shifting Firm Energy Load Carrying Capability (FELCC).¹⁴⁷ To reduce its obligations, BPA can grant billing credits to a utility that initiates a conservation program to reduce its own load.¹⁴⁸ BPA can also grant billing credits to a utility that develops a generating resource to reduce its demand on BPA.¹⁴⁹ Finally, if all else fails, BPA can declare insufficiency.¹⁵⁰ These matters are the subject of this part of the article.

139. Northwest Power Act, *supra* note 3, § 6(a), 16 U.S.C. § 839d(a) (Supp. V 1981).

140. *Id.* § 6(a)(2), 16 U.S.C. § 839d(a)(2) (Supp. V 1981). *See also infra* part IVB2 (discussing BPA authority to purchase power on short term basis).

141. *See infra* parts IVD to IVE.

142. "Cost-effective" means that such measure or resource must be forecast:

- (i) to be reliable and available within the time it is needed, and
- (ii) to meet or reduce the electric power demand, as determined by the Council or the Administrator, as appropriate, of the consumers of the customers at an estimated incremental system cost no greater than that of the least-cost similarly reliable and available alternative measure or resource, or any combination thereof.

Northwest Power Act, *supra* note 3, § 3(4)(A), 16 U.S.C. § 839a(4)(A) (Supp. V 1981). *See also infra* part IVA1 (discussing conservation under the Act).

143. *Id.* § 6(a), 16 U.S.C. § 839d(a) (Supp. V 1981).

144. *Id.* § 6(a)(2)(A), 16 U.S.C. § 839d(a)(2)(A) (Supp. V 1981). *See also infra* parts IVA2 to IVA4 (discussing acquisition of power generating resources under the Act).

145. Northwest Power Act, *supra* note 3, § 3(17), 16 U.S.C. § 839a(17) (Supp. V 1981). *See also infra* part IVB1 (discussing reserves).

146. 16 U.S.C. § 838 (1976 & Supp. V 1981). *See infra* part IVB2.

147. *See infra* part IVC.

148. *See infra* part IVD.

149. *See id.*

150. *See infra* part IVE.

A. *Resource Acquisition: Options for Meeting Increased Obligations*

The Northwest Power Act directs BPA to acquire resources, including conservation, to meet its contractual obligations.¹⁵¹ BPA must promote conservation¹⁵² and may acquire electricity-generating resources.¹⁵³ Because in either case BPA is meeting its contractual obligations, the Act refers to these two options as a single concept: resource acquisition.¹⁵⁴ The Act defines "resource" to include both generated "electric power" and "actual or planned load reduction[s]."¹⁵⁵ Both residential weatherization and nuclear power are potential Northwest Power Act resources: the former because it would reduce a customer's load on BPA and the latter because it would generate electricity.

There are many methods for achieving load reductions. If such reductions result either "from direct application of a renewable energy resource by a consumer, or from a conservation measure,"¹⁵⁶ and are cost-effective,¹⁵⁷ BPA must give them top priority.¹⁵⁸ For example, BPA must favor weatherization, which is a conservation measure, and solar hot water heating, which is a direct application renewable resource.¹⁵⁹

The Act reflects Congress' choice for meeting the future electric energy needs of the Pacific Northwest.¹⁶⁰ The four resources that Congress specified will be discussed here in the priority Congress gave them.¹⁶¹

1. *Conservation*

The Act defines "conservation" as "any reduction in electric power consumption as a result of increases in the efficiency of energy use, pro-

151. Northwest Power Act, *supra* note 3, § 6(a), 16 U.S.C. § 839d(a) (Supp. V 1981).

152. *Id.* § 6(a)(1), 16 U.S.C. § 839d(a)(1) (Supp. V 1981).

153. *Id.* § 6(a)(2), 16 U.S.C. § 839d(a)(2) (Supp. V 1981). "Resource" includes generating facilities. *Id.* § 3(19)(A), 16 U.S.C. § 839a(19)(A) (Supp. V 1981).

154. *See id.* § 3(19), 16 U.S.C. § 839a(19) (Supp. V 1981); *supra* text accompanying note 25.

155. Northwest Power Act, *supra* note 3, § 3(19), 16 U.S.C. § 839a(19) (Supp. V 1981).

156. *Id.* § 3(19)(B), 16 U.S.C. § 839a(19)(B) (Supp. V 1981).

157. *See supra* note 142.

158. *See Northwest Power Act, supra* note 3, §§ 4(e)(1), 6(a)(1), 16 U.S.C. §§ 839b(e)(1), 839d(a)(1) (Supp. V 1981).

159. The latter would displace demand for electricity by converting the sun's rays to heat.

160. *See Northwest Power Act, supra* note 3, § 4(e)(1), 16 U.S.C. § 839b(e)(1) (Supp. V 1981). "[B]y establishing conservation and renewables as priorities, the conservation and renewable resource objectives of the bill will be enhanced. This emphasis on conservation . . . [i]s the cornerstone of the planning process." House Commerce Report, *supra* note 47, at 55. "[S]ections 6(a) and (b) together require the Administrator to achieve all available conservation and prevent him from acquiring non-conservation resources without first taking into account planned savings from conservation." House Interior Report, *supra* note 47, at 37, *reprinted in* 1980 U.S. CODE CONG & AD NEWS 6023, 6035.

161. *See Northwest Power Act, supra* note 3, § 4(e)(1), 16 U.S.C. § 839b(e)(1) (Supp. V 1981).

duction or distribution,”¹⁶² and lists it as first in the resource acquisition priority scheme.¹⁶³ The Act provides the mechanism for BPA to invest in conservation.¹⁶⁴ The conservation program is funded by the power revenues BPA receives, which means that the region’s consumers fund the regional conservation program.¹⁶⁵ Prior to the Act, BPA could use customer revenues only to repay the federal investment in the FCRPS and to pay the costs of the net-billed projects¹⁶⁶ and of operating and maintaining its transmission system and power marketing activities.¹⁶⁷ The Act makes billions of dollars in BPA power sales revenues potentially available to support needed and cost-effective Pacific Northwest electric energy conservation investments.¹⁶⁸

2. Renewable Resources

The Act defines “renewable resource” as a “resource which utilizes

162. *Id.* § 3(3), 16 U.S.C. § 839a(3) (Supp. V 1981).

163. *Id.* § 4(e)(1), 16 U.S.C. § 839b(e)(1) (Supp. V 1981). The Act gives conservation a 10% advantage in the calculation of resource cost-effectiveness. *See id.* § 3(4)(D), 16 U.S.C. § 839a(4)(D) (Supp. V 1981). “The bill treats conservation as a resource and gives it top priority for the region’s future,” stated Congressman Don Bonker in arguing for approval of the legislation which became the Northwest Power Act. 126 CONG. REC. H9858 (daily ed. Sept. 29, 1980). In the same debate Congressman Joel Pritchard declared, “I know of no other legislation which carries such a strong mandate for implementing conservation.” *Id.* at H9848. Congressman Al Swift, the bill’s primary House sponsor, stated more graphically, “Mr. Chairman, if horses had feathers, we would be knee deep in them right now. . . . We have heard that there will be inadequate conservation. Horsefeathers. Conservation is given the primary emphasis in this legislation.” *Id.* at H9860–61.

164. BPA issues billing credits to encourage utilities to invest in conservation as well. *See infra* part IVD. Utilities which do not invest in conservation may be subject to a surcharge on their wholesale power purchases from BPA. The Act provides that the Council’s Plan will include model conservation standards enforceable through such rate surcharges. Northwest Power Act, *supra* note 3, § 4(f), 16 U.S.C. § 839b(f) (Supp. V 1981).

165. 126 CONG. REC. S14,694 (daily ed. Nov. 19, 1980) (statement of Sen. Hatfield).

166. Net-billing is discussed in part IIIB *supra*.

167. *See* Federal Columbia River Transmission System Act, Pub. L. No. 93-454, § 11(b), 88 Stat. 1376, 1378–79 (1974) (codified as amended at 16 U.S.C. § 838i(b) (1976 & Supp. V 1981)). Section 8(a) of the Northwest Power Act, *supra* note 3, added clause “(iv)” to § 11(b)(6) of the Transmission System Act. 16 U.S.C. § 838i(b)(6)(iv) (Supp. V 1981). This authorized BPA to use its revenues to help meet the Administrator’s obligations under the fish and wildlife provisions of the Northwest Power Act. Northwest Power Act, *supra* note 3, § 4(h), 16 U.S.C. § 839b(h) (Supp. V 1981). *See infra* note 242 and accompanying text. Section 8(b) of the Northwest Power Act, *supra* note 3, added subsection “(12)” to § 11(b) of the Transmission System Act. 16 U.S.C. § 838i(b)(12) (Supp. V 1981). This authorized BPA to use its revenues to help effectuate the purposes of the Northwest Power Act including investing in conservation.

168. A discussion of the mechanisms for financing conservation under the Act is beyond the scope of this article. One indication of the scale of investment contemplated by the Act is its establishment of a \$1.25 billion revolving fund for conservation and renewable resource loans and grants. Northwest Power Act, *supra* note 3, § 8(d)(3), 16 U.S.C. § 838k(a) (Supp. V 1981). *See generally* 126 CONG. REC. H9843–45 (daily ed. Sept. 29, 1980) (statement of Cong. Ullman) (discussing various financial aspects of the Act).

solar, wind, hydro, geothermal, biomass, or similar sources of energy and which either is used for electric power generation or will reduce the electric power requirements of a consumer, including by direct application."¹⁶⁹ Renewable resources are listed second in the resource acquisition priority scheme.¹⁷⁰ A renewable resource is a resource that uses only regenerative or essentially inexhaustible energy sources.¹⁷¹ Geothermal energy, while not always technically renewable, is included as a renewable source of energy.¹⁷²

The Act directs BPA to use its authority to the "maximum extent practicable . . . to acquire conservation measures and renewable resources."¹⁷³ The Act declares that "[n]otwithstanding any acquisition of resources pursuant to [section 6], the Administrator shall not reduce his efforts to achieve conservation and to acquire renewable resources installed by a residential or small commercial consumer to reduce load."¹⁷⁴ The provisions emphasize that conservation and small-scale renewables are Congress's first choices to meet the future energy needs of the region. BPA is clearly directed to implement those choices.¹⁷⁵

3. *Waste Heat*

The Act lists "generating resources utilizing waste heat or generating resources of high fuel conversion efficiency"¹⁷⁶ as third priority.¹⁷⁷ These resources include such measures as the recovery of heat produced in lighting or industrial processes and use of the recovered heat to generate electricity or to reduce space heating requirements directly.¹⁷⁸ Solar systems that convert energy for use by consumers are to be considered renewable resources rather than waste heat resources.¹⁷⁹

169. Northwest Power Act, *supra* note 3, § 3(16), 16 U.S.C. § 839a(16) (Supp. V 1981).

170. *Id.* § 4(e)(1), 16 U.S.C. § 839b(e)(1) (Supp. V 1981).

171. House Commerce Report, *supra* note 47, at 52. The Northwest's few existing renewable resource projects are listed in the 1982 BLUE BOOK, *supra* note 12, at tables 8 & A-8.

172. S. REP. NO. 272, 96th Cong., 1st Sess. 23 (1979) [hereinafter cited as Senate Report]. "Breeder" and "fusion" projects do not qualify as renewable resources. See House Interior Report, *supra* note 47, at 39, reprinted in 1980 U.S. CODE CONG. & AD. NEWS 6023, 6037; House Commerce Report, *supra* note 47, at 52.

173. Northwest Power Act, *supra* note 3, § 6(e)(1), 16 U.S.C. § 839d(e)(1) (Supp. V 1981).

174. *Id.* § 6(b)(5), 16 U.S.C. § 839d(b)(5) (Supp. V 1981).

175. See *supra* note 163.

176. Northwest Power Act, *supra* note 3, § 4(e)(1), 16 U.S.C. § 839b(e)(1) (Supp. V 1981).

177. *Id.*

178. Senate Report, *supra* note 172, at 28. The Northwest's several existing cogeneration projects are listed in the 1982 BLUE BOOK, *supra* note 12, at tables 8 & A-9.

179. See Senate Report, *supra* note 172, at 28.

4. *All Other Resources*

BPA must attempt to meet projected load growth through cost-effective conservation, renewables, and waste heat resources before it can acquire any other resource. The most likely candidates for BPA acquisition, after the first three priority resources have been exhausted, are coal and nuclear¹⁸⁰ power plants, and oil and gas combustion turbines.¹⁸¹ Some opponents of passage of the Northwest Power Act feared that expanded resource acquisition authority would result in a BPA decision to purchase the future output of WPPSS nuclear projects 4 and 5.¹⁸² So far BPA has shown no inclination to do so and, in fact, recently recommended that construction work be temporarily halted at project 1.¹⁸³ BPA's projection of a slower rate of growth in regional electric energy demand,¹⁸⁴ combined with the Act's mandate that additional thermal power be the lowest priority resource, makes the acquisition of additional thermal power by BPA unlikely before the 1990's.¹⁸⁵

B. *Reserves and Transmission System Act Purchases: Options for Meeting Demand Gaps*

BPA has several options if it is unable to acquire sufficient resources on a long term basis to meet its contractual obligations. This subsection will discuss industrial operating and planning reserves and short term power purchases under authority of the Federal Columbia River Transmission System Act.

1. *Industrial Reserves*

The Act defines "reserves" as:

the electric power needed to avert particular planning or operating shortages for the benefit of firm power customers of the Administrator and available to the Administrator (A) from resources or (B) from rights to interrupt, curtail,

180. The Northwest's existing and planned coal and nuclear plants are listed in the 1982 BLUE BOOK, *supra* note 12, at tables 8, A-10.

181. The Northwest's existing and planned oil and gas combustion turbines are listed in *id.* at tables 8, A-7.

182. *See, e.g.*, 126 CONG. REC. H10,523-24 (daily ed. Nov. 12, 1980) (statement of Cong. AuCoin). BPA had acquired through net-billing part of all of the future output of WPPSS nuclear projects 1, 2, and 3 only. *See supra* part IIIB.

183. *See supra* note 72 and accompanying text.

184. *See supra* notes 69-70 and accompanying text.

185. *See generally* 1982 BLUE BOOK, *supra* note 12, at table 4 (listing new thermal projects due to come on line through 1994).

or otherwise withdraw, as provided by specific contract provisions, portions of the electric power supplied to customers.¹⁸⁶

Reserves thus encompass both standby generation¹⁸⁷ and contractual rights to restrict power deliveries.

In the absence of reserves, certain events could cause BPA to be unable to meet its firm load obligations.¹⁸⁸ These events would include a drought worse than that experienced during the historical period of 1928-1932,¹⁸⁹ an accident at or unexpectedly poor performance of a net-billed thermal plant, an unanticipated delay in the planned starting date of a resource, or a governmental order shutting down a resource such as a nuclear power plant. To prepare itself for such eventualities, BPA's contracts with Industries specify that BPA's power deliveries to them may be restricted to protect the firm power loads of BPA's other customers.¹⁹⁰

There are two basic types of industrial reserves—energy reserves and capacity reserves. There are two basic types of energy reserves—operating reserves and planning reserves.¹⁹¹ The first (or top) quartile¹⁹² of the industrial load is an operating reserve: a reserve against low water. BPA service to that twenty-five percent of the industrial load may be interrupted at any time in order to protect BPA's ability to meet its firm obligations.¹⁹³ The second quartile of the industrial load provides planning reserves.¹⁹⁴ BPA may restrict service to that portion of the industrial load upon notice and for the purpose of protecting BPA's firm loads from deficits caused by planned resources being delayed or available at a lesser capability than planned.¹⁹⁵ The third quartile is used to return to BPA

186. Northwest Power Act, *supra* note 3, § 3(17), 16 U.S.C. § 839a(17) (Supp. V 1981).

187. Standby generation includes, for example, a contract between BPA and a utility that the utility will run its combustion turbine generators in times of shortage.

188. See *supra* note 47 (definition of "firm load obligations").

189. See *infra* note 208 and accompanying text.

190. Industrial Contract, *supra* note 73, § 7(c)-(d).

191. See House Commerce Report, *supra* note 47, at 62. There are also "capacity" reserves. These reserves permit, for example, brief interruptions of the entire industrial load for up to fifteen minutes. *Id.*; Industrial Contract, *supra* note 73, § 7(b). See also *infra* note 197 and accompanying text (discussing interruptions). "Capacity" refers to "[m]aximum power output, expressed in kilowatts or megawatts." PUBLIC POWER COUNCIL, *supra* note 24, at C-2. "Energy" means "[a]verage power production over a stated interval of time," *id.* at C-4, and is expressed in kilowatt hours, megawatt hours, average kilowatts or average megawatts. *Id.* For a comparison of capacity and energy, see *id.* at 31. See also DEIS-APP, *supra* note 120, at III-7 to -14 (discussing energy and capacity).

192. A quartile is one-fourth of an Industry's load. See Industrial Contract, *supra* note 73, § 14(o).

193. See Industrial Contract, *supra* note 73, §§ 7(c), 14(o). See generally Redman, *Nonfirm Energy and BPA's Industrial Customers*, 58 WASH. L. REV. 279 (1983) (discussing BPA's authority to interrupt power to industrial customers).

194. See Industrial Contract, *supra* note 73, § 7(d).

195. *Id.*; House Commerce Report, *supra* note 47, at 62.

power that the agency has “advanced” or “shifted” to an Industry.¹⁹⁶ The fourth quartile, along with the first three, provides a capacity reserve that can be interrupted for up to fifteen minutes to maintain stability in the Pacific Northwest power system and prevent a regional blackout.¹⁹⁷

2. *Transmission System Act Purchases*

The Federal Columbia River Transmission System Act¹⁹⁸ authorizes BPA to purchase electric power “on a short-term basis to meet temporary deficiencies in electric power which the Administrator is obligated by contract to supply.”¹⁹⁹ The Northwest Power Act preserves this authority²⁰⁰ but limits it in practical effect to power purchases that are no longer than five years in duration.²⁰¹ The Northwest Power Act may result in BPA utilizing its Transmission System Act short term purchase authority more frequently. This result is especially likely if BPA’s new investments in conservation and renewable resources prove to be less effective than the agency anticipates. BPA would then need to cover its contractual obligations by purchasing more power on a short term basis. It is to make such short term purchases as it can at a reasonable cost before restricting the Industries’ second quartile.²⁰²

C. *Shifting Firm Energy Load Carrying Capability*

Firm Energy Load Carrying Capability (FELCC) of a Pacific Northwest power system such as BPA’s is the maximum amount of energy, in the same monthly distribution as the system’s firm energy loads, which the system is able to produce *without failure* throughout the historical period used for hydroelectric resource planning purposes (“historical

196. See Industrial Contract, *supra* note 73, § 7(e). See also *infra* part IVC (discussing “shifting”).

197. See Industrial Contract, *supra* note 73, § 7(a)–(b).

198. 16 U.S.C. § 838 (1976 & Supp. V 1981).

199. *Id.* § 838i(b)(6)(i). See generally DEIS-APP., *supra* note 120, at I-31 to -33 (discussing short term power purchases).

200. See Northwest Power Act, *supra* note 3, § 6(a)(2), 16 U.S.C. § 839d(a)(2) (Supp. V 1981).

201. The Act does so by defining “major resource” as a resource that “(A) has a planned capability greater than fifty average megawatts, and (B) if acquired by the Administrator, is acquired for a period of more than five years.” *Id.* § 3(12), 16 U.S.C. § 839a(12) (Supp. V 1981). Any decision by BPA to acquire a major resource is subject to the Northwest Power Act’s constraints regarding conformance with the Regional Conservation and Electric Power Plan, public hearings and similar provisions. See, e.g., *id.* § 6(c), 16 U.S.C. § 839d(c) (Supp. V 1981). Thus, only a BPA resource acquisition under the Transmission System Act which does not exceed five years in duration will avoid triggering the Northwest Power Act’s resource acquisition constraints.

202. See Industrial Contract, *supra* note 73, § 7(d)(5).

streamflow record" of 1928 to 1968) by using all of its reservoir storage in combination with its historical streamflows.²⁰³

BPA can sell no more power from Columbia River dams than is expected to be produced as rain falls and mountain snows melt and the resulting runoff flows to the Pacific Ocean, turning hydroelectric power generators at dams as gravity pulls the water downwards. Winter snowpacks vary from winter to winter, and annual rainfall likewise varies. FELCC of the hydroelectric system is the energy which is "guaranteed for delivery from the hydro system at any time provided the region does not experience streamflows more adverse than in the past."²⁰⁴ When combined with the expected thermal generation, the sum effectively defines the regional firm loads that can be served.²⁰⁵

For purposes of determining the FELCC of the hydroelectric system, the forty-two and one-half month period of August 16, 1928, through February, 1932, is one period used as the "critical period."²⁰⁶ The critical period is that portion of the forty-year historical streamflow record during which the system's usable reservoir storage is drafted from full to empty to supplement its historical streamflows to produce the system's FELCC.²⁰⁷ The low-flow period of 1928-1932 is likely to be experienced in its entirety only once every 164 years.²⁰⁸ Also used is the twenty and one-half month low-flow period of 1943-1945 which produced only slightly more energy than did the 1928-1932 period.²⁰⁹ The twenty and one-half month period is estimated to recur in its entirety once every forty-five years.²¹⁰ However, critical water conditions have been approached ten times in the forty-year record.²¹¹ In both 1973 and 1977 the Pacific Northwest suffered droughts that came very close to or were worse than historical low flow records for substantial periods of time and forced utilities to take measures to reduce their loads.²¹²

Critical period planning means that BPA's firm power supply is a reliable power supply as measured against the historical record.²¹³ When BPA contracts to sell firm power to a customer, the chances are very high

203. See L. Dean, Understanding Hydroelectric Power System Critical Periods 3-4 (Feb. 1982) (unpublished BPA internal memorandum) (copy on file with the *Washington Law Review*).

204. RDEIS, *supra* note 121, at A-8 to -9.

205. *Id.* at A-9.

206. *Id.*; DEIS-APP., *supra* note 120, at II-11.

207. L. Dean, *supra* note 203, at 4.

208. Letter from Lawrence A. Dean, Director, Division of Power Supply, BPA, to author (Jan. 24, 1983) (copy on file with the *Washington Law Review*) [hereinafter cited as Dean letter].

209. See DEIS-APP., *supra* note 120, at II-34.

210. Dean letter, *supra* note 208.

211. *Id.*

212. *Id.*

213. See RDEIS, *supra* note 121, at A-8 to -10.

that the amount of water available from reservoirs plus flows in Pacific Northwest rivers will be sufficient to allow BPA to actually deliver that firm supply.²¹⁴ Streamflows that are better than those in the critical period are first dedicated to assuring reservoir refill, and then used to produce energy in excess of the system's firm energy capability.²¹⁵ BPA can sell the excess as "nonfirm," "secondary," or "surplus" power.²¹⁶

Every year the Northwest Power Pool,²¹⁷ acting under authority of the Pacific Northwest Coordination Agreement,²¹⁸ produces an annual operating plan for the next operating year.²¹⁹ A preliminary regulation is produced by March 15 of each year.²²⁰ The preliminary regulation is revised until a final regulation and operating plan is issued on July 1.²²¹ This operating plan guides the release of water from reservoirs during the operating year beginning July 1.²²²

Reservoirs are drawn down in the winter and spring both to generate electricity and to head off potential flooding. In most years, reservoirs will refill by summer.²²³ However, if the reservoirs are not full by July 31 then the operating plan must be adjusted to reduce the FELCC the system is allowed to develop.²²⁴

The method BPA and the region's generating utilities use to determine FELCC under the Pacific Northwest Coordination Agreement has been criticized as being too conservative.²²⁵ Nearly every year streamflows are greater than those experienced during the low-flow periods of 1928-1932

214. See *id.* at A-10; DEIS-APP., *supra* note 120, at II-40; Dean letter, *supra* note 208.

215. Dean letter, *supra* note 208.

216. *Id.* See generally DEIS-APP., *supra* note 120, at II-12 (discussing sales to "secondary markets").

217. See generally DEIS-APP., *supra* note 120, at II-27 to -29 (discussing Northwest Power Pool).

218. Bonneville Power Administration, Agreement for the Coordination of Operations Among Power Systems of the Pacific Northwest (1964) [hereinafter cited as Coordination Agreement]. The Coordination Agreement will expire in 2003. *Id.* § 1(a). See generally DEIS-APP., *supra* note 120, at II-29 to -31 (discussing Coordination Agreement).

219. See Coordination Agreement, *supra* note 218, § 6. See generally DEIS-APP., *supra* note 120, at II-33 to -40 (discussing annual operations plan).

220. Coordination Agreement, *supra* note 218, § 6(b).

221. See *id.* § 6(e).

222. These operations are guided by Rule Curves which are determined from historical studies of streamflow conditions. A Rule Curve is a guide to the use of storage water from each reservoir and consists of a graphic or tabular representation of the elevation of stored water at different times. Blumm, *supra* note 120, at 252. See generally DEIS-APP., *supra* note 120, at II-12 to -13, II-35 to -39 (discussing Rule Curves); Hittle, Larson, Randall & Michie, *supra* note 118, at 269 (same).

223. See DEIS-APP., *supra* note 120, at III-3 to -4.

224. See Coordination Agreement, *supra* note 218, § 6(i). Cf. DEIS-APP., *supra* note 120, at II-42, II-53 (discussing reservoir refill as component of FELCC).

225. See RDEIS, *supra* note 121, at A-9.

and 1943-1945.²²⁶ If BPA and the region's utilities adopted some less conservative strategy, they could sell more power during the early months of the critical period, say, August to November, and gamble that sufficient precipitation would fall during the winter and spring to bring the reservoirs back to normal during the following summer. During periods of prolonged drought, firm loads would be curtailed.²²⁷

BPA, the region's utilities and the federal operating agencies (the Bureau of Reclamation and Army Corps of Engineers) have been unwilling to take this gamble because of their concern about the possible magnitude of adverse socioeconomic impacts that would occur during periods of shortage.²²⁸ Nevertheless, the severity of using the critical period for planning purposes has been somewhat modified by an infusion of flexibility in the form of FELCC shifting.²²⁹

FELCC shifting means that reservoirs are drafted more deeply in the fall of the first year of the critical period; in other words, energy that might otherwise be needed later is developed now.²³⁰ The expectation is that by early January snowpack reports will indicate that critical water conditions are not developing and reservoirs are expected to refill.²³¹ Before shifting FELCC, BPA acquires contractual rights to restrict power deliveries in later years of the critical period if needed to serve firm loads.²³² This acquisition assures that firm loads can be served, assuming the region experiences streamflows no worse than those which occurred in the past.²³³ If reservoirs refill by the following July 31, then the planning process starts anew. Planners assume that a new critical period may begin that summer.²³⁴ If reservoirs do not refill and drought conditions continue, then those customers on whose behalf FELCC was shifted may have to meet their firm loads from other resources or curtail their loads,

226. *Cf. id.* (discussing risks of streamflows as low as 1928-1932 and 1943-1945 periods).

227. *See id.*

228. *See id.*

229. FELCC shifting is actually only one of three techniques which have the consequence of making more firm power available for sale from BPA than would be available if planning was done strictly on a critical period basis. The others are "borrowing FELCC" within given years of the critical period and using "advance energy." Each of the techniques enables BPA to move firm energy between and among periods of time by drafting reservoir storage levels below their Rule Curves. *See generally* Industrial Contract, *supra* note 73, § 8(b)(1)(E); DEIS-APP., *supra* note 120, at II-42 to -48.

230. Dean letter, *supra* note 208.

231. *Id.*

232. *Id.*

233. *Id.*

234. *Id.*

kilowatt-hour for kilowatt-hour, by as much firm power as was shifted for use by those customers.²³⁵

It is the Army Corps of Engineers and Bureau of Reclamation, operators of the FCRPS, rather than BPA, that ultimately determine how much energy is available through implementation of any given operating plan. This is because water resource projects serve multiple functions. Possible adverse effects on irrigation, navigation, recreation, fish, and flood control must be taken into consideration.²³⁶

Newly-spawned Columbia River salmon and steelhead need large flows of water during the spring as they migrate to sea to mature. Otherwise they become disoriented in large slow-flowing ponds behind dams.²³⁷ These flows are greater than the regional firm energy market can absorb.²³⁸ Some of this spring flow drives hydroelectric turbines and produces nonfirm or secondary power, large amounts of which are delivered to California over the Pacific Northwest-Pacific Southwest intertie, but some is spilled over the dams and produces no power.²³⁹ To help protect fish runs the Northwest Power Planning Council has decided that the federal operating agencies should retain water in storage even in critical years to provide a large enough spring runoff to meet fish needs.²⁴⁰ This will mean a loss of FELCC and less firm power sold.²⁴¹ BPA will have to look to other resources for the difference.²⁴²

D. Billing Credits: Opportunity For Reducing Obligations

In certain circumstances BPA can reduce its contractual obligations. Two sets of provisions in the Act allow BPA to pursue or implement such reductions. One set, the billing credits provisions, requires BPA to credit its customers' bills for their conservation and resource acquisition actions

235. *Id.*

236. See CONTRACTS ENVIRONMENTAL REPORT, *supra* note 95, at 4-14 to -16.

237. See Blumm, *supra* note 120, at 220.

238. See generally BONNEVILLE POWER ADMINISTRATION, COMMENTS TO THE NORTHWEST POWER PLANNING COUNCIL ON RECOMMENDATIONS FOR THE FISH AND WILDLIFE PROGRAM 35-69 (Apr. 1, 1982) (discussing fish and water flows) [hereinafter cited as FISH AND WILDLIFE COMMENTS].

239. See generally *id.* at 53-61 (discussing water flows and power losses). Spill may occur either because the flow is greater than the turbines can accommodate, or because it may reduce the mortality rate of the fingerlings and thus be advisable even if there was a power market for the spilled water.

240. See generally FISH AND WILDLIFE PROGRAM, *supra* note 119, at §§ 301-04 (discussing provision of water flows for fish migration).

241. See FISH AND WILDLIFE COMMENTS, *supra* note 238, at 38.

242. See generally *id.* at 35-60. The Northwest Power Act authorizes BPA to acquire resources to meet its fisheries obligations. See Northwest Power Act, *supra* note 3, § 6(a)(2)(B), 16 U.S.C. § 839d(a)(2)(B) (Supp. V 1981). For a discussion of fish needs and hydropower operations, see *Hydropower System Planning and Operations and the Enfranchisement of Fish and Wildlife*, NATURAL RESOURCES LAW INST., 18 ANADROMOUS FISH LAW MEMO, May 1982, at 1-8.

that reduce BPA's obligations to acquire additional resources. The second set, insufficiency provisions, allows BPA to restrict the amount of electric power it would otherwise be obligated to supply to its customers. Billing credits are the subject of this subsection.

The Act requires BPA to grant billing credits to any requesting customer for "conservation activities independently undertaken or continued . . . which reduce the obligation of the Administrator that would otherwise have existed to acquire other resources."²⁴³ The Act also requires BPA to grant billing credits for "resources constructed, completed or acquired . . . which reduce the obligation of the Administrator to acquire resources under this Act."²⁴⁴ A conservation billing credit can be granted for action which displaces any BPA resource acquisition. A resource billing credit is an alternative to acquisition by BPA of the capability or output of a direct application renewable resource or a generating resource.

For example, assume BPA has signed a power sales contract with a Private that obligates BPA to supply the Private with its net requirements for power. There are two principal ways in which BPA's contractual obligations to the Private can be met.

First, BPA can acquire sufficient electricity-generating resources to meet the Private's projected load growth, or it can fund conservation measures sufficient to reduce projected load growth by the required amount, or it can use both approaches. For instance, BPA might help an Indian tribe install power generators on a dam on the tribe's reservation and then use that electricity to meet the Private's requirements. Or it could contract with the Private to weatherize homes in the Private's service area, or another area, with BPA directly underwriting the cost of the conservation measure.

Second, billing credits can accomplish the same result. For instance, if the Private arranged directly with the Indian tribe to add power generators to an existing dam and obtain the power produced from it, the Private's net requirements would decrease. BPA's obligation to acquire other resources to serve the Private's load would be reduced. BPA would then grant the Private a resource billing credit to compensate it for reducing the obligation BPA would otherwise have had to meet. If the Private were to go ahead on its own to weatherize the homes of its customers, BPA would grant the Private a conservation billing credit.²⁴⁵ In the case of billing

243. Northwest Power Act, *supra* note 3, § 6(h)(1)(A), 16 U.S.C. § 839d(h)(1)(A) (Supp. V 1981).

244. *Id.* § 6(h)(1)(B), 16 U.S.C. § 839d(h)(1)(B) (Supp. V 1981).

245. BPA would not do so if BPA had adopted an applicable conservation program or the Northwest Power Planning Council had established mandatory conservation standards; the weatherization program would then not be "independently undertaken." *See id.* § 6(h)(1)(A), 16 U.S.C. § 839d(h)(1)(A) (Supp. V 1981); House Interior Report, *supra* note 47, at 50, *reprinted in* 1980 U.S.

credits, BPA does not itself acquire resources. Rather, BPA gives economic incentives to customers to acquire their own resources.

The billing credit provisions are designed to give individual utilities incentives for local conservation investments and to avoid any disincentives for resource generation investments.²⁴⁶ The provisions are designed to insure the undertaking of local investments that maintain the lowest possible costs to the region of providing conservation and other resources, but which might not be undertaken without billing credit.²⁴⁷

The Act provides that the size of conservation billing credits is to be set “equal to” the rate impact other customers “would have experienced had the Administrator been obligated to acquire resources in an amount equal to that actually saved by the activity for which the credit is granted.”²⁴⁸ The size of resource billing credits is to be set to compensate the customer “for net costs actually incurred” (including a fair rate of return for the initial sponsor) but to have a rate impact on other customers “no greater than” the rate impact that would have been experienced had BPA been obligated to acquire an equal amount of resources itself.²⁴⁹ These provisions mean that for conservation billing credits, customers could make a profit beyond what is normally considered a fair rate of return for an investment.²⁵⁰

Customer conservation activities must be “independently undertaken”²⁵¹ to be eligible for billing credits. With respect to future activities, eligibility for billing credits will cease if BPA acquires the resource

CODE CONG. & AD. NEWS 6023, 6048; Proposed Billing Credits Policy, 47 Fed. Reg. 9760, 9764 (1982).

246. See Proposed Billing Credits Policy, 47 Fed. Reg. 9760, 9762 (1982).

247. If an individual utility undertook a conservation project which saved power at less cost than alternatives available to BPA, the utility’s action would be cost-effective for the region. However, if the utility were a Public, the cost to it of investing in conservation could well exceed the cost of purchasing an equivalent amount of power from BPA. This is so because Publics get the lowest-cost BPA power and that power includes mostly very low cost hydroelectric power (which when “melded” with the much more expensive net-billed thermal power still allows BPA to sell electricity relatively cheaply). Thus, in the absence of an economic incentive, a Public may not undertake the conservation project; it would lose money if it did. Conservation billing credits are designed to provide that economic incentive. See generally *id.* at 9762 (discussing policy and purpose of credits); 126 CONG. REC. H10,679 (daily ed. Nov. 17, 1980) (statement of Cong. Swift) (same).

248. Northwest Power Act, *supra* note 3, § 6(h)(3), 16 U.S.C. § 839d(h)(3) (Supp. V 1981).

249. *Id.* § 6(h)(4), 16 U.S.C. § 839d(h)(4) (Supp. V 1981).

250. If a utility undertakes a conservation program which costs less than BPA’s “alternative cost”—i.e., the amount BPA would have had to pay for the same amount of power—the utility gets a conservation billing credit equal to BPA’s alternative cost rather than simply to the cost to the utility of providing the conservation measure. This is to provide an investment incentive while preserving for BPA’s other customers rates no greater than they would have had to pay in the absence of the individual utility’s action. See Proposed Billing Credits Policy, 47 Fed. Reg. 9760, 9761–63 (1982).

251. Northwest Power Act, *supra* note 3, § 6(h)(1)(A), 16 U.S.C. § 839d(h)(1)(A) (Supp. V 1981).

or mandates the conservation program. Billing credits granted for actions already implemented will continue.

The Act provides that “[r]etail rate structures which are voluntarily implemented by the Administrator’s customers and which induce conservation or installation of consumer-owned renewable resources . . . shall qualify for billing credits.”²⁵²

E. *Insufficiency*

The second set of provisions by which BPA can reduce its contractual obligations is the set relating to insufficiency. Insufficiency is a foreseeable future gap between BPA’s resources and its contractual obligations. When BPA has done its best to acquire new resources to meet its growing obligations and it is still going to be short, then BPA can issue notices of insufficiency (“notices of restriction”²⁵³) to restrict its contractual obligations. Such a foreseeable future demand gap is to be distinguished from actual operating shortages that are dealt with by using industrial reserves,²⁵⁴ Transmission Act purchases,²⁵⁵ and curtailment plans implemented by state and local governments.²⁵⁶

The Act includes a number of restrictions on BPA’s ability to declare insufficiency. First, insufficiency cannot be declared until “after a reasonable period of experience under this Act.”²⁵⁷ Second, any contract with a Public or Agency must specify “a reasonable minimum period between a notice of restriction and the earliest date such restriction may be imposed.”²⁵⁸ In accordance with these provisions, the requirements contracts provide that no notice of restriction may be made before December 5, 1985,²⁵⁹ to allow BPA a reasonable period of experience under the Act. Then as to Publics and Agencies, no restriction may be put into effect prior to the expiration of eight years following the notice.²⁶⁰ For Privates, no restriction may be effective before five years have elapsed.²⁶¹ And third, no notice of restriction may go into effect prior to the year in

252. *Id.* § 6(h)(5), 16 U.S.C. § 839d(h)(5) (Supp. V 1981).

253. *See* Requirements Contract, *supra* note 73, § 7(a).

254. *See supra* part IVB1.

255. *See supra* part IVB2.

256. “[A]ctual operating curtailments are imposed by State and local governments, not BPA.” House Interior Report, *supra* note 47, at 47, *reprinted in* 1980 U.S. CODE CONG. & AD. NEWS 6023, 6045.

257. *See* Northwest Power Act, *supra* note 3, § 5(b)(5), 16 U.S.C. § 839c(b)(5) (Supp. V 1981).

258. *Id.*

259. Requirements Contract, *supra* note 73, § 7(a)(2).

260. *Id.* § 7(a)(3).

261. *Id.* § 7(a)(4).

which BPA's obligations to its Public and Agency customers exceed the FBS Resources.²⁶²

The Act also includes a number of restrictions on BPA's actions once insufficiency has been declared. First, insufficiency is only to last until BPA is able to acquire sufficient resources to meet its unrestricted contractual obligations.²⁶³ Insufficiency is not to be a permanent condition. Second, during a period of insufficiency BPA must still sell to its customers an amount of power equivalent to that which the customers have sold to BPA.²⁶⁴ Third, during a period of insufficiency BPA may not restrict Public and Agency entitlements below the total capability of the FBS Resources.²⁶⁵ Fourth, for the initial twenty-year contracts,²⁶⁶ restrictions cannot operate to reduce any Public or Agency customer's entitlement below the level of actual firm power deliveries to that customer from BPA in the year prior to insufficiency.²⁶⁷ And fifth, no actual limitation of power deliveries to a utility customer during a period of insufficiency may be imposed unless BPA has exercised its rights to restrict delivery to the Industries.²⁶⁸

The Northwest Power Act's insufficiency provisions create an incentive for BPA's Public and Private customers to develop resources, including conservation, for sale to BPA. For Privates, BPA's obligation to serve load growth is absolute only until July 1, 1991.²⁶⁹ Beyond then, in the words of one utility attorney, "if the individual utility has failed to arrange for enough generation for its own load growth, BPA can simply refuse to supply load growth."²⁷⁰ Senator Mark Hatfield made the same point shortly before congressional passage of the Act:

262. *Id.* § 7(a)(5).

263. The Act requires BPA to acquire sufficient resources to meet its obligations "without considering restrictions which may apply pursuant to section 5(b) of this Act." Northwest Power Act, *supra* note 3, § 6(a)(2), 16 U.S.C. § 839d(a)(2) (Supp. V 1981). *See also* House Commerce Report, *supra* note 47, at 60 (discussing acquisition of resources).

264. Northwest Power Act, *supra* note 3, § 5(e), 16 U.S.C. § 839c(e) (Supp. V 1981). *See also supra* text accompanying notes 55–59 (discussing entitlements of utilities which provide resources to BPA). However, BPA is not required to provide customers with power equivalent to that which they sold the agency as a replacement for FBS Resources. *See supra* note 57.

265. *See* Northwest Power Act, *supra* note 3, § 5(b)(6)(B), 16 U.S.C. § 839c(b)(6)(B) (Supp. V 1981). *See also supra* text accompanying notes 44–54 (discussing Public and Agency entitlements and FBS Resources).

266. *See supra* note 73.

267. *See* Northwest Power Act, *supra* note 3, § 5(g)(6), 16 U.S.C. § 839c(g)(6) (Supp. V 1981).

268. *See* Requirements Contract, *supra* note 73, § 7(a)(6).

269. *See id.* § 7(a)(2). This is five years following the start of the first operating year during which BPA could issue notices of restriction.

270. H. Smith, The Pacific Northwest Electric Power Planning and Conservation Act; History of the Regional Power System 10 (June 4, 1981) (unpublished paper presented to the Northwest Power Planning Council) (excerpt on file with the *Washington Law Review*).

Bonneville's legal obligation, under the bill, to provide a future power supply is limited to the power supplied to it by its customers. Under section 5(b), (c), and (e), if any individual utility fails to supply BPA with enough power, Bonneville can restrict its obligation to that utility to the amount of power so supplied. Thus, the essential utility responsibility remains in the local utilities.²⁷¹

This result follows from the Act's prohibition on BPA ownership of resources under the Act.²⁷² That prohibition precludes independent resource development by BPA; the agency can only acquire what others, particularly its Public and Private customers, develop. And the Act gives those other customers an incentive to develop resources by providing that their allocations in times of insufficiency cannot be restricted below the amount of power they have made available (sold) to BPA.²⁷³

V. CONCLUSION

The Northwest Power Act will affect the economic and environmental quality of life in the Pacific Northwest for the next generation or longer. This region has historically relied on ever-increasing investments in hydroelectric and thermal power, investments which have proven to be environmentally and economically costly. The Act gives this region the chance to achieve dramatic savings of electricity through environmentally and economically beneficial investments in conservation. The Act offers the public an opportunity to help decide how our future electricity needs will be met.²⁷⁴ As we avail ourselves of this opportunity, we can help decide where the Pacific Northwest's future will lie . . . along a spectrum of darkness to dawn.

271. 126 CONG REC. S14,694 (daily ed. Nov. 19, 1980). However, Senator Hatfield's statement is true only during a period of insufficiency. At all other times BPA may be required to meet a Private's load growth whether or not that customer has provided resources to BPA. See *supra* part 11B1a.

272. See Northwest Power Act, *supra* note 3, § 3(1), 16 U.S.C. § 839a(1) (Supp. V 1981). By contrast, the Tennessee Valley Authority (TVA) is authorized to own generating facilities; this is the principal difference between BPA and TVA.

273. See Northwest Power Act, *supra* note 3, § 5(e), 16 U.S.C. § 839c(e) (Supp. V 1981). See also *supra* text accompanying notes 55-59 (discussing Act's protection of utilities which provide resources to BPA). The incentive works not only by individual customer but also by customer class. Thus, if one customer has provided BPA with more power than the customer requires, its "excess entitlements," the difference between its contractual entitlements and its actual needs, will be made available first to other customers of the same class (i.e. Public, Private, Agency or Industry) who may be short. Northwest Power Act, *supra* note 3, § 5(e)(1), 16 U.S.C. § 839c(e)(1) (Supp. V 1981).

274. The Northwest Power Act requires BPA and the Planning Council to fully involve the public in their decision making. See, e.g., Northwest Power Act, *supra* note 3, § 4(g), 16 U.S.C. § 839b(g) (Supp. V 1981).