

## **Section 9: Administrator's Record of Decision on the 2002 Pacific Northwest Loads and Resources Study**

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## **Section 9: Administrator's Record of Decision on the 2002 Pacific Northwest Loads and Resources Study (The White Book)**

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### **I. Introduction**

The 2002 Pacific Northwest Loads and Resources Study (White Book) establishes the Bonneville Power Administration's (BPA) long range planning basis for supplying electric power to BPA customers. The White Book is not an operational planning guide, nor is it used for BPA rate setting purposes under section 7(i) of the Northwest Power Act. The White Book includes projected Federal system and regional loads and resources with detailed technical appendices. The White Book compiles loads, contracts, and resource capability estimates for Pacific Northwest (PNW) public agency, public utility cooperative, U.S. Bureau of Reclamation (USBR), investor-owned utility (IOU), and direct service industrial (DSI) customers obtained from (1) forecasts prepared by BPA; (2) direct submittals to BPA; (3) annual data submittals to the Pacific Northwest Utilities Conference Committee; and (4) data submittals to the Pacific Northwest Coordination Agreement (PNCA) Operating Committee. Hydro estimates are produced using BPA's hydro regulator to forecast PNW hydroelectric energy production by project. BPA uses the White Book to project potential regional and Federal system load and resource estimates over the planning period.

The White Book's long range planning basis for supplying electric power remains important as a valuable planning document for both BPA and the PNW region. BPA will continue to update it and make it publicly available. This 2002 White Book updates the 2001 Pacific Northwest Loads and Resources Study and represents a projection of regional and Federal system load and resource capabilities to be used as input to BPA's resource planning process.

### **II. Statutory Background**

With the passage of the Northwest Power Act in December 1980, Congress directed BPA to assure the Pacific Northwest an adequate, efficient, economic, and reliable power supply. *16 U.S.C. §839(2)*. In order to carry out this mandate, BPA was directed by Congress to offer new power sales contracts to its regional firm power customers and to plan and acquire firm resources sufficient to meet these firm power loads. *16 U.S.C. §839c(g)*. These initial contracts had provisions that, under certain conditions, allowed purchasers to add or remove firm resources. Notably, the load and resources as determined in the White Book was referenced within such provisions.

Section 5(b)(1) of the Northwest Power Act obligates BPA to serve, in accordance with the terms of contracts, the net firm power load requirements of utilities in the PNW including Federal agencies, public agencies, public utility cooperatives, and IOUs. Section 5(d) authorizes BPA to serve up to a defined amount of the firm power load requirements of its existing DSI customers. *16 U.S.C. §839c(b)(1) and (d)*. Under section 5(b)(1), BPA is to offer to sell firm power from the Federal system to meet the firm regional loads of a customer in excess of its firm resources, if any, which the customer must dedicate to use or has dedicated to use for service of its own regional

firm loads. *16 U.S.C. §839c(b)(1)(A) and (B)*. BPA is also to provide electric power for those firm loads that were served by a customer's dedicated resource if a customer's dedicated resource is no longer available to serve its loads due to obsolescence, retirement, loss of the resource, or loss of contractual rights.

Section 6(a)(2) of the Northwest Power Act obligates BPA to acquire sufficient resources, on a planning basis, to meet its firm load obligations, including its section 5(b)(1) and 5(d) contract obligations. BPA's obligations to provide firm electric power to its utility customers for their regional firm loads and its contract obligations to provide firm power to its DSI customers comprise the largest portion of BPA's firm contract obligations. *16 U.S.C. §839c(b)(1) and (d)*.

### **III. BPA's Utility Power Sales Contract Obligations**

In October 2000, BPA executed 5- or 10-year power sales contracts with Federal agency, public agency, public utility cooperative, USBR, IOU, and DSI customers. Power service under these contracts began October 1, 2001. The following sets forth BPA's firm 2001 power sales contract load obligations projected for the 2002 White Book study period:

- BPA's Federal agency, public agency, public utility cooperative, and USBR customers signed either 5- or 10-year power sale contracts. Some of the public agencies and public utility cooperatives signed up for the 5- or 10-year Slice of the System Product. BPA's power sale contracts with these customers end September 30, 2011; however, this study assumes the public agency, public utility cooperative, and USBR customers' net requirements will be met by BPA throughout the study horizon. For OY 2007 through 2011, BPA's PSC obligations include approximately 800 aMW of service that currently are not signed. These public load obligations are estimated to range from 6,490 aMW in OY 2004 to 7,465 aMW in OY 2013. In actual operation, BPA's obligations to the full-service customers may be higher or lower than those shown in this analysis;
- BPA's IOU customers signed 10-year contracts settling the Residential Purchase and Sales Agreement (RPSA). As a result of negotiations in 2001, IOU power deliveries under the RPSA settlement reflect reduced power deliveries in exchange for financial considerations through September 30, 2006. The net RPSA settlement power deliveries are 258 aMW during this time period. The RPSA settlement allows BPA the option to provide its IOU customer's financial benefits and/or power deliveries of up to 2,200 aMW for the period October 1, 2006, through September 30, 2011. This study assumes that BPA exercises its option to pass to the IOU customers RPSA settlement in the form of financial benefits and no power will be delivered for this time period. This is a change from the 2001 White Book Study that showed BPA delivering to the IOU customers RPSA settlement of 2,200 aMW annually in power deliveries for October 1, 2006, through September 30, 2011. BPA's potential exposure to impacts from the IOU power deliveries could range from 0 to 2,200 aMW during this time period; and
- BPA's DSI customers signed 5-year power sale contracts that began October 1, 2001, and extend through September 30, 2006. This study assumes that during this term, BPA's contract obligations to the DSIs can range up to 768 aMW. Depending on DSI closures, contract terminations, and/or economic conditions, BPA's actual DSI energy deliveries could range from 0 to 768 aMW through September 30, 2006. After September 30, 2006, Federal service to the DSIs is not assumed because the DSIs

do not have signed contracts in place for service. This assumption does not represent a decision by BPA on post-September 30, 2006, firm DSI power sales.

### **III. Excess Federal Power**

This White Book is not a recalculation of or change in BPA's earlier published calculations of the amount of excess Federal power that may be sold by BPA under Public Law (P.L.) 104-46, §508(a) and (b). However, this White Book does provide a calculation of surplus firm power under section 5(f) of the Northwest Power Act. Surplus firm power is the amount of firm power in excess of BPA's firm obligations under subsections 5(b), (c), and (d). This surplus power, if any, may be sold as either excess Federal power under P.L. 104-46, consistent with BPA's calculations of excess Federal power, or as surplus power under P.L. 88-552 and section 9(c) of P.L. 96-501 (Northwest Power Act). To the extent that BPA has annual amounts of planned firm power that are surplus to its firm contract obligations, BPA may market all or a portion of that surplus power as excess Federal power. The duration of these sales will be as stated in BPA's Excess Federal Power Policy. For purposes of this White Book, a sale of excess Federal power with delivery occurring for a year or more is considered a firm obligation on BPA and is included as a firm obligation in Federal loads.

### **CONCLUSIONS:**

For the foregoing reasons the methodology and the assumptions in the 2002 White Book are approved.

Issued in Portland, Oregon on **December 31, 2003.**

**/s/ Stephen J. Wright**

Stephen J. Wright  
Administrator and Chief Executive Officer

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## **Section 10: Glossary and Acronyms**

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# Glossary

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**Average Megawatts (aMW)** – A unit of electrical consumption or production over a year. It is equivalent to the energy produced by the continuous use of 1 megawatt of capacity served over a period of 1 year. One average megawatt is equivalent to 8,760 megawatt hours or 8.76 gigawatt hours.

**Bonneville Power Administration (BPA)** – BPA is a power marketing agency, responsible for acquiring and delivering power to meet contractual obligations and electrical needs of its customers.

**Canadian Entitlement Return for Canada** – The public agencies' obligation to return the Canadian Entitlement allocation to Canada under the Columbia River Treaty that began April 1, 1998.

**Canadian Entitlement Return (CER) for Columbia Storage Power Exchange** – The public agencies' obligation to return the Canadian Entitlement allocation to Canada that was purchased by the CSPE participants. This agreement began to expire April 1, 1998 and fully expired March 31, 2003.

**Capacity** – The maximum power that an electrical system or machine such as a hydro powered or thermal powered generating plant can produce under specified conditions.

**Capacity Factor** – The ratio of the average load on a machine or piece of equipment over a given period to maximum power rating of the machine or equipment.

**Cogeneration** – The sequential production of more than one form of energy, such as heat and electricity. Large industrial plants often are sources of electricity cogenerated as a byproduct of a heating process.

**Columbia Storage Power Exchange (CSPE)** – Sales to Northwest utilities of the Canadian share of downstream benefits created by the Canadian storage projects in the Columbia basin. These contracts began to expire April 1, 1998 and fully expired March 31, 2003.

**Conservation** – Any reduction in electrical power as a result of increases in the efficiency of energy use, production, or distribution.

**Critical Period** – That portion of the historical streamflow record during which the recorded streamflows, combined with all available reservoir storage, produced the least amount of energy.

**Dedicated Resources** – Generating resources owned by a utility and used to serve its firm loads. These resources are declared in each utility's power sales contract with BPA.

**Direct Service Industries (DSI)** – A group of industrial customers that purchase electric power directly from BPA. Most DSIs are aluminum and other primary metal smelting plants.

**Energy Load** – The demand for power averaged over a specified period of time.

**Export** – Electricity generated in the Pacific Northwest that is sold to another region, such as California.

**Federal Columbia River Power System (FCRPS)** – The FCRPS consists of 31 Federal hydroelectric projects constructed and operated by the U.S. Army Corps of Engineers (USACE), U.S. Bureau of Reclamation (USBR), plus BPA's transmission facilities.

**Federal System** – The Federal system is a combination of BPA’s customer loads and contractual obligations, and resources from which BPA acquires the power it sells. The resources include plants operated by the U.S. Army Corps of Engineers (USACE), U.S. Bureau of Reclamation (USBR), and hydroelectric projects owned by the city of Idaho Falls, Lewis County PUC, and Energy Northwest (ENW). BPA markets the thermal generation from the Columbia Generating Station, operated by ENW.

**50-Hour Peak Capacity** – The amount of capacity that can be sustained for 10 hours a day during peak-load hours for a 5-day week.

**Firm Capacity** – Maximum on-peak electrical energy that is considered assured to meet all contractual peak load requirements over a defined period for a customer or customer group.

**Firm Energy** – Electric power that is considered assured to the customer to meet all contractual energy load requirements over a defined period for a customer or customer group.

**Fiscal Year** – In this study, fiscal year (FY) is the 12-month period October 1 to September 30. For example, FY 2004 is October 1, 2003, through September 30, 2004.

**Forced Outage Reserve** – Capacity that is held in reserve, for use in case a generating unit malfunctions.

**Forced Energy Sale (Spill)** – Electrical energy that cannot be accepted into the system and must either be sold or spilled due to constraints and limitations of hydro projects.

**Forebay** – The portion of the reservoir at a hydroelectric plant that is immediately upstream of the generating station.

**Historical Streamflow Record** – The unregulated streamflow database of the 50 years from August 1928 to July 1978.

**Hydroregulation** – A study simulating operation of the Pacific Northwest electric power system that incorporates the historical streamflow record, monthly loads, thermal and other non-hydro resources, hydroelectric plant data for each project, and the constraints limiting each project’s operation.

**Independent Hydro** – The output from hydropower plants that are not part of the regulated system. These plants are generally run-of-river. Examples are Cowlitz Falls or other small hydro plants whose output is used to serve load in the utility service territory in which it is located.

**Import** – Electricity that comes to the Pacific Northwest from another region. Examples would be purchases within the region from Canada, California, or western Montana.

**Interruptible Loads** – Loads that can be interrupted in the event of a power deficiency on the supplying system.

**Intraregional Transfer** – Sales of power between two parties within the Pacific Northwest region. Sales from an IOU to a public utility within the region are intraregional transfers, such as firm power sales from BPA to PNW entities.

**Investor-Owned Utility (IOU)** – A privately owned utility organized under State law as a corporation to provide electric power service and earn a profit for its stockholders.

**Load Diversity** – An adjustment applied to peak loads to reflect the fact that all peaking electrical demands do not occur simultaneously across the region.

**Megawatt (MW)** – A unit of electrical power equal to 1 million watts or 1,000 kilowatts.

**Non-firm Energy** – Electrical power produced by the hydro system that is available with water conditions better than those of the critical period without appreciably jeopardizing reservoir refill. It is available in varying amounts depending upon season and weather conditions.

**Non-firm Energy Load** – Load served by additional hydro energy available in “better than critical period” water conditions.

**Non-utility Generation** – generation that is owned by a third party that is not a utility, such as an industrial customer or an independent power producer.

**Operating Year** – For this study, operating year (OY) is the 12-month period August 1 through July 31. For example, OY 2004 is August 1, 2003, through July 31, 2004.

**Peak Load** – The maximum demand for power during a specified period of time.

**Power Sales Contract Obligation** – Capacity and energy the Federal system is required to provide to Federal agencies, public agencies, cooperatives, USBR, IOUs, and DSIs under their 1981 or 2001 power sales contracts with BPA.

**Region** – The geographic area defined by the Pacific Northwest Electric Power Planning and Conservation Act. It includes Oregon, Washington, Idaho, Montana west of the Continental Divide, portions of Nevada, Utah, and Wyoming that lie within the Columbia River drainage basin, and any rural electric cooperative customer not in the geographic area described above but served by BPA on the effective date of the Northwest Power Planning Act.

**Regulated Hydro** – Hydropower plants that are part of the Columbia River hydro system that is operated jointly by BPA, the USACE, and the Bureau. Most of these are part of the mainstem system on the Columbia and Snake Rivers.

**Renewable Resources** – Resources that use solar, wind, hydro, geothermal, biomass, or a similar source of energy that is converted into electricity.

**Resource Acquisitions** – Conservation or generating resources acquired in order to meet projected firm energy deficits.

**Slice of the System Product** - A public preference 10-year power sales contract product based on the customer's net requirements that provides firm and secondary energy using a fixed percentage of the output generated by the Federal system Slice resources.

**Spinning Reserves** – Reserve generating capacity maintained for immediate response to meet load variations. This provides a regulating margin for controlling the automatic generation and frequency of power in the Federal system.

**Surplus Firm Capacity** – The maximum amount of assured electrical energy above the firm energy loads served by the power system.

**Sustained Peak** – The peaking capacity necessary to sustain a load for a given period of time.

**Thermal Resources** – Resources that burn coal, natural gas, or oil, or use nuclear fusion to create heat which is then converted into electricity.

## 2002 White Book Document Acronyms

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<b>aMW</b>	Average megawatt
<b>BPA</b>	Bonneville Power Administration
<b>CER</b>	Canadian Entitlement Return
<b>Council</b>	Northwest Power and Conservation Council
<b>CSPE</b>	Columbia Storage Power Exchange
<b>DSI</b>	Direct service industry
<b>ENW</b>	Energy Northwest, Inc. (formerly Washington Public Power Supply System)
<b>EPM</b>	Enron Power Marketing, Inc.
<b>FCRPS</b>	Federal Columbia River Power System
<b>FERC</b>	Federal Energy Regulatory Commission
<b>FRE</b>	Firm Resource Exhibit
<b>FPS</b>	Federal Power System
<b>FY</b>	Fiscal Year
<b>IOU</b>	Investor-owned utility
<b>IPP</b>	Independent Power Producer
<b>MW</b>	Megawatt
<b>MSR</b>	MSR Public Power Agency, whose members include the Modesto Irrigation District and the cities of Santa Clara and Redding, California
<b>NOAA</b>	National Oceanographic and Atmospheric Administration
<b>NUG</b>	Non-utility generating resources
<b>OY</b>	Operating Year
<b>PGE</b>	Portland General Electric
<b>PNCA</b>	Pacific Northwest Coordination Agreement
<b>PNUCC</b>	Pacific Northwest Utilities Conference Committee
<b>PNW</b>	Pacific Northwest
<b>PP&amp;L</b>	PacifiCorp Power and Light Company
<b>PPL Montana</b>	Pennsylvania Power and Light (Montana)
<b>PSC</b>	Power Sales Contract
<b>PUD</b>	Public Utility District
<b>RPSA</b>	Residential Purchase and Sales Agreement
<b>ROD</b>	Record of Decision
<b>USACE</b>	U.S. Army Corps of Engineers
<b>USBR</b>	U.S. Bureau of Reclamation