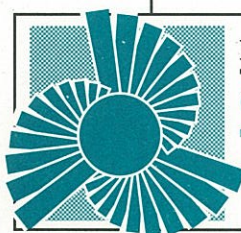
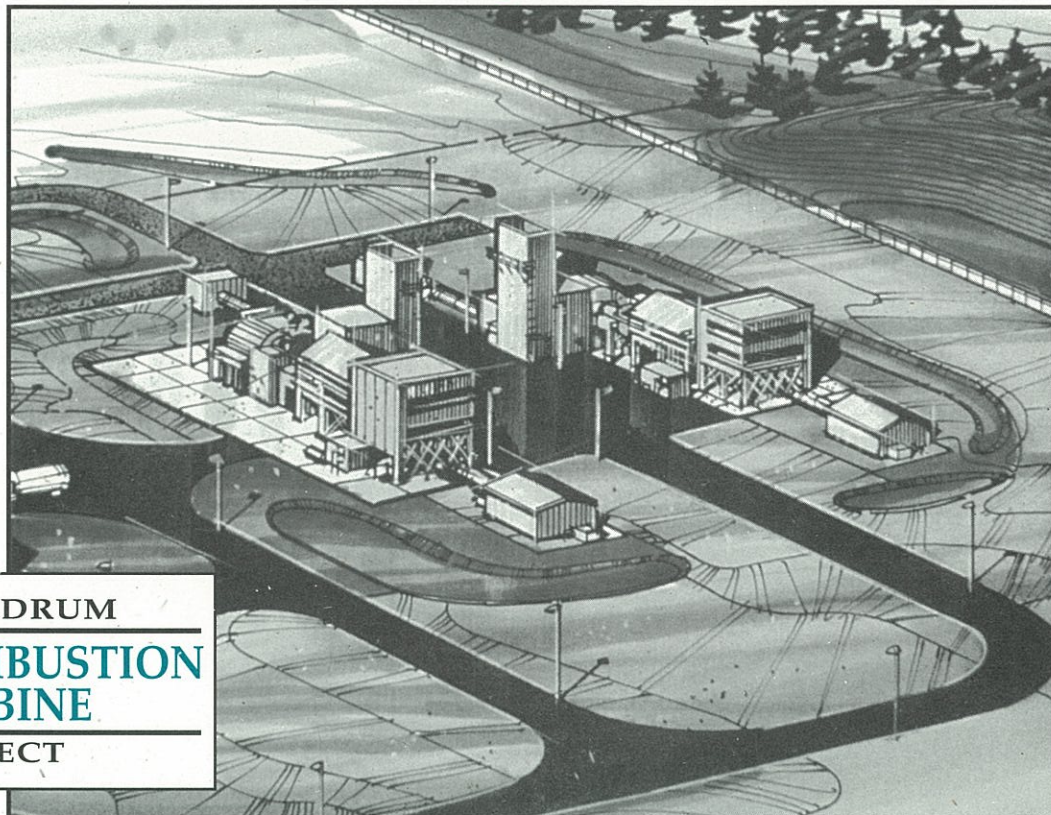




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## The Washington Water Power Company's 1995 Electric Integrated Resource Plan



RATHDRUM  
COMBUSTION  
TURBINE  
PROJECT

*WWP's 176-megawatt simple-cycle combustion turbine project, completed December 1994*

# APPENDICES

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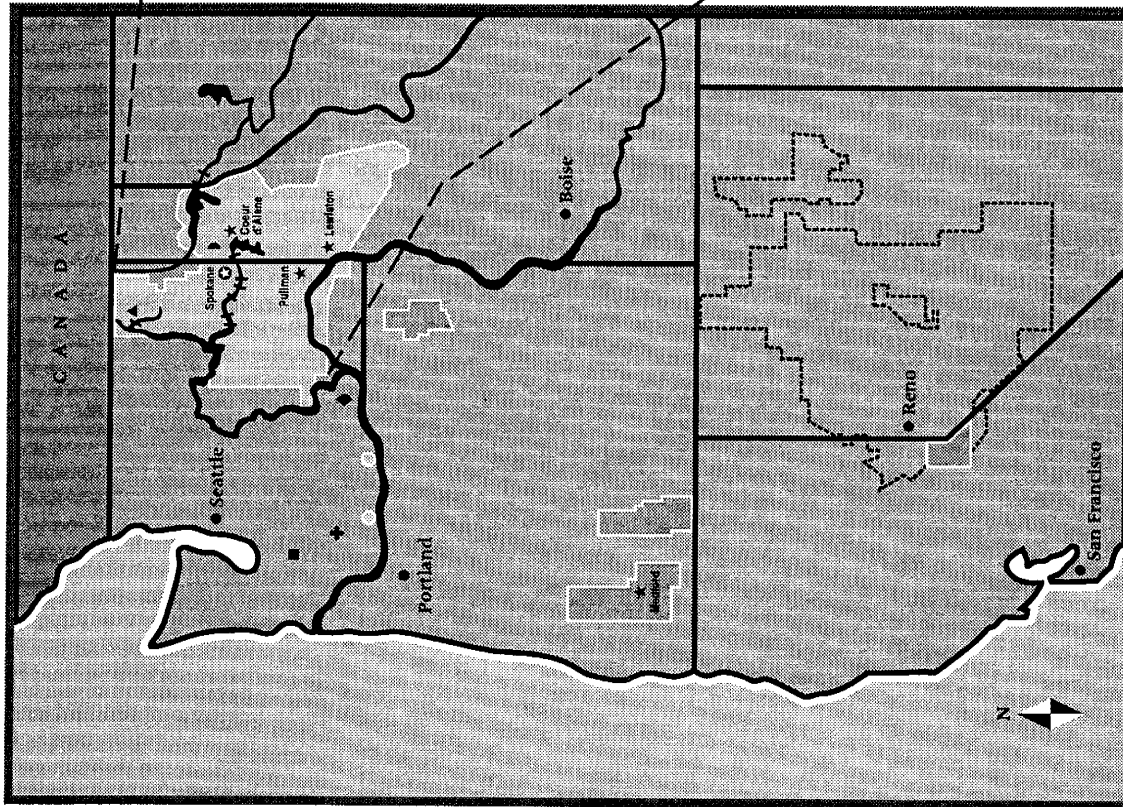
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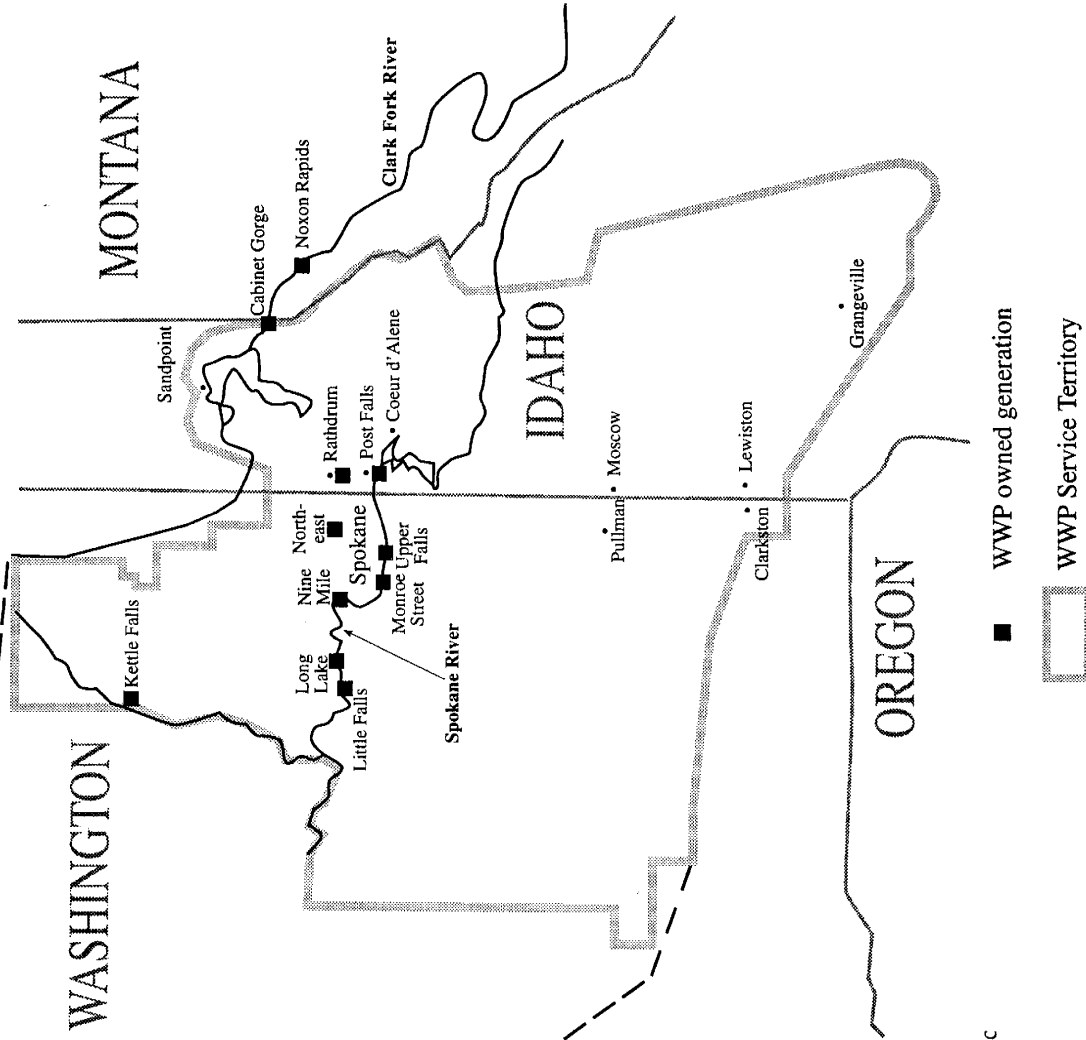
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- Corporate Headquarters
- Division Offices
- WWP Hydroelectric Projects
- WP Natural Gas, a WWP Operating Division
- Kettle Falls Wood-Waste-Fueled Generating Station
- Rathdrum Combustion Turbine Generating Station
- Centralia Steam Electric Generating Station
- Jackson Prairie Underground Gas Storage Project
- Service area of our merger partner, Sierra Pacific Resources. Proposed merger expected to be completed in 1995.



- WWP owned generation
- WWP Service Territory



# Benchmarks

The Washington Water Power Company's last IRP was published in April 1993. Since that time, WWP has been involved in many activities which support the company's commitment as a low-cost provider of energy services. This 1995 IRP updates the company's resource planning activities. As the reader may be interested in specific topics, the following "benchmarks" provide a reference to some key information contained in this report.

Benchmark	Page	Appendix	Summary
Achievements--Two Years in Review	7 - 8	A	Since 1993 IRP, highlights include: "Redesign" program to improve customer delivery process, proposed merger with Sierra Pacific and an innovative tariff to give DSM more financial stability.
Action Plan for 1995 (Near-term)	38 - 40	E	The company's near-term action plan outlines the activities that will support our strategy and improve the planning process.
Action Plan Response from 1993	32 - 37	D	All action items listed in 1993 IRP are updated.
Avoided Cost	122 - 123	H	Based on IRP results for WWP's preferred strategy, SRPM calculates a 20-year levelized cost of new resource acquisitions at about 2.85 cents/kWh.
Capacity Need	48 - 50	F	Tabulations do not predict a capacity shortfall until 2006 with a deficit of 54 MW. Peak deficits reach 447 MW in the year 2014. In the years to come, as energy resources are acquired, they will also contribute to the capacity needs of the company.
Demand-Side Management (Historical)	114 - 116	H	WWP has been involved in DSM since 1978. This section provides a summary of all the past programs.
Demand-Side Management (Three-Year Program Results)	117 - 118	H	When originally filed, WWP estimated that it's 1992 DSM filing would result in 28 aMW of energy acquired at an average cost of 3.7 cents/kwh over three years. The company outperformed this estimate significantly achieving 34 aMW at an average cost of 2.7 cents/kwh.
Demand-Side Management (95-96 filing with tariff rider)	119 - 120	H	WWP's December 1994 DSM filing proposed several program changes including the termination of Energy Exchanger. The filing also included an innovative tariff designed to create a pool of funds to be used for DSM programming.
Existing Resources	41 - 79	F	WWP's existing 1995 resources, in general, consist of hydroelectric (323 aMW), thermal (530 aMW), contracts (283 aMW) and past conservation efforts (34 aMW).
Load Forecast	80 - 96	G	The medium-growth projection for energy loads is 0.9 % annually.
Fuel Cost Assumptions	131	I	Expected conditions for fuel price and capital escalation associated with new resources development.
Levelized Cost Calculations	105	H	Resource costs are calculated over the individual life of each resource.
Merger	9 - 11	B	Both companies are anticipating that all federal and state regulatory approvals will be complete by October 1995. Transition teams made up of Sierra and WWP employees are identifying the best processes and programs from both companies to ensure they are applied in the new company.
Modeling Methods	129 - 130	I	The Strategic Resource Planning Model (SRPM) received several significant enhancements in 1994.
Public Involvement	21 - 31	C	Since 1993, WWP has held a number of public meetings on resource management issues including two hydro redevelopment projects, Rathdrum CT project and the now retired downtown Spokane Steamplant.
Relicensing	101 - 102	H	Over the next 10-15 years, WWP will be involved in relicensing its hydroelectric projects on the Spokane and Clark Fork rivers.
Resource Assessment	97 - 127	H	This appendix discusses those demand and supply-side resource options WWP is currently pursuing and those that might be viable in the future as well as all the issues that surround these options.
Preferred Resource Plan	136	I	The company's preferred resource plan includes a steady level of DSM through the entire planning and renegotiation of Mid-Columbia power purchases as the existing contracts expire.
Service Area Demographics	3	A	WWP currently serves about 290,000 electric customers and 207,000 natural gas customers.
Service Area Economic Forecast	84 - 88	G	The Spokane and Kootenai county combined population for 1994 is estimated to be 483,500. By 2004, population expands to 552,700, an increase of 69,200 or 14.3%.
Technology	19-20,125-127	B, G	Recent breakthroughs in generation technology are making the production of electricity more environmentally sound and efficient than ever before.
Transmission Issues	14 - 15	B	WWP has written letters of support for two regional transmission groups in the Northwest. The company has also filed an open access tariff as part of its merger application.
Wholesale Issues	12	B	WWP continues to make wholesale transactions which provide additional revenues and help maintain the lowest possible rates for all customers.

# Introduction--Meeting Our Goals

Least cost planning represents a utility's responsibility to meet customer demand for energy services at the least total cost to both the utility and its customers. Success in meeting this responsibility is generally determined by the utility's ability to:

- Forecast future energy needs
- Assess energy supply and demand-side options
- Develop action plans which support a least cost resource strategy

While formal guidelines for developing a least cost plan are set forth by the Washington Utilities and Transportation Commission (WAC 480-100-251) and the Idaho Public Utilities Commission (Order No. 22299), the process has evolved into an effort to fully integrate all resource management activities. In addition to the consideration of resource needs and alternatives, the Integrated Resource Plan presents an energy resource strategy which also reflects:

- Contributions from the public and other interested parties
- Consideration of social and environmental responsibilities
- Evaluation of potential risks and uncertainties
- Coordination with related business activities

This evolution to integrated resource planning adds some necessary complexity to an already dynamic resource planning process. The Washington Water Power Company (WWP) believes the benefits of this ongoing change are reflected in the following report.

**Appendix A****Company  
Overview**

## WWP--An Overview

Our purpose starts and ends with the customer. For more than a century, The Washington Water Power Company has delivered energy to light lamps, warm homes and drive production. Today, in our 26,000-square-mile service area of eastern Washington and northern Idaho, we supply energy to nearly 290,000 electric service customers and 133,000 natural gas customers. In 1994, WWP added 11,682 new natural gas customers and 8,569 new electric customers.

In addition, our WP Natural Gas division provides service to 74,000 customers in Oregon and Northern California, an area of some 400,000 population.

**WWP supplies energy services to customers in its 26,000-square-mile eastern Washington and northern Idaho service areas as well as parts of Oregon and California.**

Since our founding in 1889, Spokane, Washington has been our home base. Under normal water conditions, our nine hydroelectric projects provide energy for 65 percent of our retail electric load. We also own and operate a wood-waste-fueled generating station, two natural-gas-fired combustion turbine power plants and have ownership in two coal-fired electric generating facilities. Along with power purchases and exchanges, these thermal plants meet the remainder of our retail electric needs.

Encouraging energy-efficiency has long been part of our commitment to providing complete energy services. It will remain among one of our preferred means of maximizing value in the energy services we provide.

WWP owns and operates a portfolio of non-utility interests through its private investment firm, Pentzer Corporation. Pentzer currently focuses on manufacturers and distributors of industrial and consumer products, as well as service businesses.

## A Brief History

A mere dozen street lights--signs of progress in Spokane Falls in 1889--were a large part of the system of the infant Washington Water Power Company. When fire swept the downtown on a sultry August day, the four-month-old company's arc light system went down in flames. Crews quickly scoured up every scrap of wire that could carry a current, even barbed wire, and using half-burnt poles, trees, and the sides of remaining buildings, rewired the system. When darkness fell, the lights came on. A tradition of exceeding customer expectations had begun.

Ten partners founded the company on March 13, 1889, when Edison's invention was not a decade old. As Spokane rebuilt, power demand accelerated. WWP stepped up construction on the lower falls of the Spokane River. On November 12, 1890, the Monroe Street Station whirled into action, the first of WWP's nine hydroelectric projects.

Bold and innovative from the start, the company saw opportunity in the Idaho mines, and in 1900 undertook to build a transmission line from Spokane to Burke, Idaho. Completed in 1903, the 100-mile, 60,000-volt line was then the longest high-voltage line in the world.

Homes were just being electrified, and households were buying their first electrical appliances, which the company enthusiastically marketed. It cost \$10.50 to have a complete house wired.

Through the '20's and '30's, the company built 1,500 miles of transmission lines and constantly added generation capacity. By 1940, electric use in WWP's area was more than twice the national average. World War II brought a focus on conservation, and the company initiated war bond sales and scrap drives, donating two million tons of metal itself.

In the '50's, Cabinet Gorge and Noxon Rapids dams went on-line, and WWP acquired Spokane Natural Gas Co., providing customers a second energy service option. In 1960, WWP began developing Spokane Industrial Park. The park is now home to 80 businesses and 3,000 employees. Thermal power generation was the focus of the '70's and '80's, with projects at Centralia, Washington; Kettle Falls, Washington; and Colstrip, Montana.

Today, the company's stock is owned by 34,000 shareholders in 50 states and 22 countries. Beginning its second century, WWP continues to focus on enhancing shareholder value, maintaining competitive prices and providing excellent customer service.

**A 100-mile, 60,000-volt line from Spokane to Burke, Idaho, completed in 1903, was then the longest high-voltage line in the world.**



# Operations Overview

Our company remains flexible to changing conditions and continues to provide low-cost services. Hydropower, the foundation of our electric generating system, offers some of our most cost-effective sources for future electric resources. For example, upgrades at our Nine Mile and Cabinet Gorge projects added 17 megawatts to our capacity at very low costs.

The hydro projects are complemented by our thermal electric-generating facilities. Coupled with power purchases and exchanges, these facilities provide the company with a flexible and reliable supply of electricity.

**We will sustain our competitive advantage by maintaining our position as a low-cost energy services provider.**

To meet our region's long-term natural gas needs, we have agreements with five natural gas pipelines for transportation capacity, giving us strategic access to both domestic and Canadian gas supplies. The company's supply access is complemented by our participation and one-third ownership in an underground natural gas storage facility.

To encourage the wise and efficient use of energy, our energy conservation programs provide energy-saving opportunities to our residential, commercial and industrial electric and natural gas customers.

As we meet the challenges of a fast-changing marketplace, we will sustain our competitive advantage by maintaining our position as a low-cost energy service provider. From this position of strength, we are well-situated to respond to the opportunities presented by deregulation in the wholesale energy market. We believe increasing competition in the wholesale and retail arenas will provide our company with greater opportunities to market power beyond our service area and will benefit the customer with continued, low-cost service.

Our competitiveness relies on our ability to adapt quickly as market conditions change and to improve all work processes. We must effectively manage our business costs to remain viable. Cost management and continuous improvement of work practices have been cornerstones of our operations. We simply cannot afford to pass on higher costs of doing business to our customers.

The challenges of operating a utility have increased across all business fronts. As we continually explore creative solutions to business challenges, we will sustain open dialogue with our customers, regulators and other policy makers to ensure a compatible view of the future.

**It is our customers who drive our business success and add value to our shareholders' investment.**

## Customer Service Overview

We listen to our customers. As we strive for unrivaled customer service, we are making connections with our customers to bridge the gap between what we think they want and what they tell us they need.

For the majority of our customers, good service means providing competitive and stable energy prices, while delivering safe and reliable service. Customers also expect us to be open, honest and direct about issues of importance to them. They want us to continue to respond quickly in case of emergency, and they want doing business with us to be easy and convenient.

Our larger-use customers, many of them competitors in the global marketplace, look to us for help to make their facilities more efficient. We help them remain competitive, and they reward us by continuing to use our services.

Having been in the energy business for more than a century, we have a clear understanding of what it takes to produce and provide low-cost energy to our customers and to deliver it with service excellence. We recognize that providing excellent customer service is the core of our business. It is our customers who drive our business success and add value to our shareholders' investments.

Our customer service efforts have been successful. Customer surveys tell us that more than 90 percent say they are satisfied with the service we provide. But competitiveness demands that we do more. With our customers' help we are redefining what serving the customer really means. We are ever more driven by the needs of our customers and we strive to respond to those needs in a manner that exceeds their expectations.

As competition increases and customers are presented with more choices, we fully intend to remain our customers' preferred choice. We already hold an overall competitive-price advantage. The other half of the equation will be exceptional customer service. It is an ongoing challenge.

Because each customer contact is critical to our business success, we treat it as such. We are determined to anticipate customer needs and be prepared to respond.

## Appendix A

Company  
Overview  
(continued)

# Achievements--Two Years in Review

Since publication of the April 1993 IRP, WWP has recorded many achievements. The company is proud of these results and the positive impact they will bring to the company and its customers. A number of these accomplishments meet the objectives of action plan items listed in the 1993 plan. For the exact responses to the 1993 Action Plan, see Appendix D, pages 32-37.

## 1993

**WWP initiates "Redesign" of customer delivery core process.** Through the Organizational System Design (OSD) methodology, WWP is creating an energy delivery system which is more responsive to customer needs. A design team, made up of a cross-section of employees from throughout operations, began work during the summer of 1993 and presented their design in January of 1995.

**Demand-side management (DSM) programs adjusted to reflect reduced need for resources.** The Washington commission approves the reduction of WWP's funding levels effective September 1, 1993; however, the company adds two new programs for commercial and industrial customers.

## 1994

**Upgrade projects at two WWP hydro plants add 17 MW to resource base.** The replacement of 1908 vintage turbines and intakes at WWP's Nine Mile facility improves plant capacity from 18 to 29 MW. Cracks in the turbine runner on Unit 1 at Cabinet Gorge initiated a replacement project which ultimately yielded a 6 MW improvement in capacity.

**Rathdrum CT--WWP's first supply-side resource in nearly a decade goes on-line in December.** Two twin simple-cycle natural gas combustion turbine units produce 176 MW of electric energy for peaking purposes.

**WWP submits letters of support for two regional transmission groups (RTG).** The Westwide Regional Transmission Association and the Northwest Regional Transmission Association will allow member utilities to address transmission access issues through coordinated transmission planning.

**WWP and Sierra Pacific announce plans to merge into a new company.** With a projected savings of \$450 million over ten years, the new company Resources West Energy (RWE) will keep both gas and electric rates low into the future.

**WWP closes a number of new short and long-term wholesale contracts.** Inland Power & Light, Enron Energy, Arizona Public Service and Seattle City Light were among the companies WWP conducted transactions with in 1994.

**Colstrip's Unit 3 1994 generation was a record 6,235,560 MW hours gross.** This was the highest yearly generation ever for a single unit. Combined total for units 3 & 4 of 11,866,620 MW hours gross was the second best year in the facility's history for highest generation.

**Streamflows on the Spokane and Clark Fork rivers reach record low levels during the summer of 1994.** WWP generation engineers estimate the company has now lost the equivalent of an entire year's worth of hydro generation--the result of persistently dry conditions the last three years.

**WWP files open access transmission tariffs with the Federal Energy Regulatory Commission (FERC).** The filing was in conjunction with Sierra Pacific as part of the merger application.

## **1995**

**WWP acquires Sandpoint electric territory from PacifiCorp.** PacifiCorp determines it's Sandpoint territory is a challenge to maintain as a stand-alone system and offers it to WWP. WWP was already the natural gas provider in the area and completes the transfer of 9300 electric customers January 1, 1995.

**Innovative DSM tariff rider is approved adding long-term stability to WWP energy efficiency programs.** In January, Washington commission allowed WWP a small rate increase in order to create a bank of funds for DSM programming. Within the filing, some programs are added, but several terminate( including Energy Ex-changer) effective January 1, 1995.

**In January, WWP is awarded the Regional Foresters Public Service Award for outstanding land stewardship activities along the Clark Fork River corridor.** The company is one of only three private sector organizations so honored.



**Appendix B****Addressing a  
Changing Utility  
Environment**

# Addressing a Changing Utility Environment

Not long ago, the energy services business, as a regulated monopoly, seemed less complex. Perhaps that's why the perception of utilities as unchanging and unchangeable has persisted. But these days, new forms of competition are rapidly providing customers with an increasing array of choices. New developments on issues relevant to our ongoing activities and to our future are reported every day. Indeed, "change" has become the new reality for our industry.

The following section shows how WWP is responding to some of the more critical issues facing the electric utility industry. At this time, we feel these strategies are the most appropriate for our corporation's health and viability into the future; however, we must be open to adjustments as the industry is moving forward at a very rapid pace.

## Capturing Internal Efficiencies

Traditionally, industries that experience more competition and/or deregulation go through a down-sizing or cost-cutting stage. The electric utility industry is now in the middle of this stage. Companies are now challenged to maintain stable revenues while providing adequate returns to investors. They are beginning to find ways to capture efficiencies in all areas of their business. WWP is currently attempting to gain significant savings with two large projects, the first is the proposed merger with Sierra Pacific Resources and the second is the Redesign of WWP's core processes.

### Merger

On June 28, 1994, WWP and Sierra Pacific announced their plans to merge into a new company called Resources West Energy. Resources West Energy will be incorporated under Nevada law and will be headquartered in Spokane, Washington. Federal and state regulatory agencies must approve the merger, including utility commissions in Nevada, Washington, California, Oregon and Idaho. There is a thorough review process conducted by each regulatory agency, including an opportunity for input by the public and customers. It is anticipated that all state and federal

approvals for the merger will be completed by October 1995. The shareholders of both companies approved the new partnership during special meetings held on Nov. 18, 1994.

A number of factors argue strongly in favor of combining WWP and Sierra Pacific. For example, it will:

- Allow for capture of significant cost savings associated with overhead expenses, and will moderate the need for rate increases, thereby enhancing the combined company's competitive price position.
- Allow for an enhanced competitive profile, by giving the combined companies a broader resource base, as well as the flexibility to respond to challenges in an uncertain market.
- Increase the potential for growth in earnings and revenue, by virtue of improved access to wholesale and retail power markets.
- Serve to diversify the combined company's generation mix, contributing to certain generation dispatch efficiencies (i.e., offsetting peak demands).
- Provide for other economies in the purchase of gas for end-use customers and for the thermal-based plants now owned by both companies.
- All of the foregoing points will contribute to a greater presence in the western marketplace.

In summary, the combination of WWP and Sierra Pacific will create strategic, financial and operating benefits for customers in the form of lower rates than would have been the case on a stand-alone basis. It will also provide benefits to shareholders in the form of greater financial strength and flexibility. Once the merger is consummated, the companies believe that merger-related savings will total approximately \$497 million over a 10-year-period (1996-2005). This figure represents total savings, and does not reflect approximately \$47 million of offsetting costs to complete the merger (both transaction and transition costs). While first year merger-related savings should approximate \$26 million, thereafter the estimated savings should escalate year-by-year through the year 2005. Cost savings in labor alone, account for approximately 46 percent of the total anticipated savings. Corporate and administrative program reductions will account for an additional 15 percent of the savings, while purchasing economies (gas) and reduced capacity requirements will contribute 14 percent and 11 percent respectively to the anticipated level of savings. Transition teams made up of employees from both companies have been formed to ensure savings targets and a smooth transition are realized.

**Appendix B****Addressing a  
Changing Utility  
Environment  
(continued)**

Since WWP was in the latter part of the two-year planning cycle when the merger was announced, the company decided to complete the IRP process as a stand alone company. No resources of Sierra or benefits from the merger were taken into account in this report. It is anticipated that the next IRP will be a resource plan reflecting the merged companies' situation as to future resource acquisitions.

**Redesign**

WWP in early 1993 began a redesign or re-engineering process. Redesign is a strategic tool which offers the potential for breakthrough improvements in WWP's business operations. Through redesign, WWP hopes to create a work system that's more responsive to customer needs. This means creating a better place in which employees can work. A work environment free of the obstacles and barriers faced in trying to meet the needs of customers- whether rules, processes, superfluous systems or conflicting goals. All these systems will be brought into alignment to best serve the customers, and make it easier to get things done. Over time, that means WWP will be more successful at capturing and maintaining its customer base.

In order to help the company in these efforts, the Organizational Systems Design (OSD) model/methodology was selected. The OSD model complements and supports WWP's initiatives to empower employees and move the responsibility for key decisions to the "customer contact" level in the company. Employees take responsibility for day-to-day decision making. This improves response time to customers needs, focuses responsibility at the appropriate levels, and minimizes or eliminates unnecessary layers in the corporate hierarchy. The OSD model facilitates looking across department lines to allow for development of communication, leadership, and decision making that is unfettered in the historic departmental boundaries which have been roadblocks to meeting broad corporate objectives in the past. The OSD model gives the company the opportunity to step up to the next level of high performance- a level where change is continual, planned and aligned with the long-term goals of the organization.

The OSD methodology utilizes a systems approach that looks at how each part of function interacts with and affects the whole. It takes into account the patterns and relationships taking place within and between the company's various organizational systems. It also requires employees to possess the knowledge to recognize these systems relationships. The methodology is broken into six distinct phases: launching, assessment, design, development, implementation and evaluation.

## Retail Wheeling

WWP believes that more competition within the electric utility industry is inevitable. If retail wheeling or some other form of competitive legislation is not passed, technology and economics will eventually force utilities to meet customers requirements for more service choices.

Our company has experienced something similar to retail wheeling in the transformation and deregulation of the natural gas industry. Natural gas customers moved from an environment of regulated prices and few options to an environment with competitive, market prices and a full range of producers to choose from. The customer's options for products and services increased and their costs decreased dramatically.

The California commission has proposed to allow electric consumers to tap competitive power markets according to the following schedule:

Industrial	1996
Commercial	1999
Residential	2002

For now; however, the issue of retail wheeling is in the hands of the states. The 1992 Energy Policy Act (EPAct) allows the state's PUCs and/or legislatures to experiment with different amounts of electric competition. California regulators have proposed to set up head-to-head competition between utilities and independent power producers in California by 1996. California's decision will likely be felt throughout the country. At least 12 states are contemplating some form of "retail wheeling," or direct access. The proposals announced by the California Public Utilities Commission (CPUC) in April, 1994 call for a sweeping overhaul of the marketing of power and how rates are set for both industrial and residential customers. The commission eventually wants to give users the choice of buying power from any source they wish, while insuring that utilities will transmit that power. If the changes go into effect as planned, in less than two years the state's largest electric users will be able to tap independent power sources practically without constraints. By 2002, all electric power users, including homeowners, will have the same choice of suppliers. The goals are to reduce overall rates, accelerate the shift of industrial customers to non-utility power sources and generally reduce utility revenues.

WWP feels retail wheeling, in some form throughout the country, is less than five years away. WWP endorses competition and is positioning itself to realize benefits from opportunities derived from competition. WWP views the risk of retail wheeling as being manageable. The company also plans to be involved at the various state levels in discussions and planning for retail wheeling implementation. The electric industry is following the patterns of the telecommunications, natural gas, airlines and freight railroads. WWP feels the most critical issues surrounding retail wheeling are:

- Energy efficiency and environmental initiatives
- Stranded utility assets
- Intrastate rules
- Federal rules
- Safeguarding of service reliability



**Appendix B****Addressing a  
Changing Utility  
Environment  
(continued)**

## **Transmission Issues**

One of the most controversial aspects of the 1992 EPAct gave the FERC the authority to order a transmitting utility to provide transmission access (wheeling) to another utility, IPP or PURPA qualifying facility when such transmission access is determined by the FERC to be in the public interest. WWP has not experienced any major adverse impact due to the open access provisions of EPAct and does not expect to in the near future. The company continues to formulate long-range plans for its transmission system through Regional Transmission Groups (RTGs) and the filing of required Open Access tariffs that set rates for external parties wanting to utilize WWP's transmission system.

### **Regional Transmission Groups (RTG)**

Throughout the United States, RTGs or Regional Transmission Associations (RTA) are being formed to facilitate resolution of transmission issues on a regional level. WWP has submitted letters of support for both the Western Regional Transmission Association (WRTA) and the Northwest Regional Transmission Association (NWRTA) Governing Agreements. FERC has conditionally approved the WRTA Governing Agreements. WRTA and NWRTA will encourage member utilities to address transmission access issues, coordinate transmission planning, resolve disputes, and collect needed data.

FERC issued a policy statement, rather than a rule, that recognized utilities' need for flexibility. "Properly functioning RTGs will serve the public interest by enabling the market for electric power to operate in a more competitive, and thus more efficient manner," FERC said in its statement. "They will decrease the delays that are inherent in the regulatory process, resulting in a more market-responsive industry."

The statement provides seemingly wide latitude in the structure of RTG agreements, but the commission specified that, in order to gain FERC deference, they must at minimum contain the following components:

- The broadest possible membership in a geographic area large enough to ensure reliable, efficient, and competitive transmission services.
- A mechanism for consultation with state regulatory authorities.
- An affirmative obligation by RTG members to provide services, including the expansion of facilities, and the terms and conditions of that service.
- The assurance of coordinated transmission planning and shared planning information.
- Fair decision making procedures.
- Voluntary dispute resolution procedures.
- An exit provision for those wishing to leave the RTG.

## **Open Access**

WWP, in conjunction with Sierra Pacific as part of the merger application, recently submitted "open access" transmission tariffs to the FERC. These tariffs are intended to eliminate any concerns at the FERC regarding the impact of the merger on market power or competition.

By offering the following three transmission tariffs, Network Integration Service, Firm Point-to-Point Transmission Service and Non-Firm Point-to-Point Transmission Service, WWP will be providing transmission access to customers on terms and conditions meeting the FERC standard for comparative transmission service to WWP's use of the transmission system. Service provided under these tariffs is wholesale only, and do not cover retail wheeling service.

Along with providing comparable service, WWP will have the ability to ensure that the party requesting service pay for the cost of the service. Therefore, WWP will have the ability to charge the party requesting new or incremental service the higher of the embedded transmission cost or the incremental cost of any system upgrades necessary to provide the requested service.

Any entity, public or private, regulated or unregulated, that engages in the generation, transmission, or distribution of electric energy at the wholesale level is an eligible customer. For example, an independent power producer, a rural electric cooperative, a municipality or power authority, or a qualifying facility, to name a few, would be eligible customers. Customer types who are **not** eligible are: single retail customers, groups of retail customers formed into "electric systems" or power marketers representing retail customers.

## **WWP-B.C. Hydro Transmission Interconnection**

A WWP-B.C. Hydro transmission interconnection economic analysis was finalized in 1994. There are some benefits that can be derived by WWP and other U.S. utilities if the line was completed. WWP's benefits are more in the area of potential wholesale business deals. Since the company can only use a portion of the line, other utilities need to be involved. WWP surveyed other potential participating utilities to assess their interest in the line. There was interest, but most wanted to wait until there was a clear market demand for this resource. A decision to build will not be made until the necessary support is received and verification from future economic analysis has been completed. In 1993, the Department of Energy issued WWP a Presidential Permit for the proposed WWP-B.C Hydro interconnection.

**Appendix B****Addressing a  
Changing Utility  
Environment  
(continued)**

## **Unbundling of Electric Products and Services**

Because electric utilities have traditionally held monopolies over their markets, there has been very little diversification of products and services. In the past, this lack of competition has forced customers to accept whatever services the utility was offering. But now competition is encouraging electric utilities to look at how they can better serve their customers. Aggressive, new energy service providers are carving out niche markets and providing innovative products and service levels that were unheard of five years ago. This phenomenon is called the “unbundling” of electric products and services. Two new products that WWP is researching are time of day rates and new pricing structures.

### **Time of Day (TOD) Rates**

By offering customers different electric rates at different periods of the day (Time of Day or TOD rates) electric utilities conceivably would be able to shave off peaks in their demand cycle. Hydro systems like WWP’s can be managed to effectively meet peak demands; the company base loads its thermal units and follows loads with its more flexible hydro units.

In the past, WWP’s resource mix did not provide enough price differential to warrant the cost of implementing TOD rates; however, if WWP’s generating system changes and combustion turbines are used to meet peak requirements further analysis of the potential benefits for TOD rates will be initiated.

The implementation of these rates on a system-wide basis still carries an enormous capital cost. WWP would be required to demand meter many customers who are currently not metered for demand. This metering would run about \$35-\$45 million for the entire service territory.

In addition, WWP experiences a high-load factor during peaks. It is about 80 percent during the period from November to February. Because high-load factor customers would have difficulty shifting their loads, TOD rates have the potential to place unnecessary burdens on customers and the entire system. Larger industrial customers would be the first to access the benefits of TOD rates as WWP’s generation mix changes and electrical services are unbundled. These customers will have the greatest dollar impacts and load shifting capability. Residential customers will probably not see TOD rates on WWP’s system unless they are used in conjunction with other marketing and service delivery programs that provide perceived value for the customer.

Requirements within PURPA state that TOD rates are to be implemented if they are cost-effective for the company. WWP has not found TOD rates to be cost-effective for any of its customer classes. Experience has shown that programs which encourage customers to switch their space and water heating to gas are more effective for peak shaving.

### **Pricing in General**

The company uses cost of service studies to determine its retail rates. In the wholesale markets it meets marketplace pricing. As competition increases and customers demand more and varied products, pricing will take on new meaning. WWP will meet customers demand and price its products correspondingly, within state regulation guidelines.

### **Interruptible Electric Service**

WWP presently does not provide customers with a tariff option for interruptible electric service. The company has discussed the feasibility of a traditional interruptible tariff with several of its largest customers. The present average firm service rate for these customers is about 3¢ per kWh, including a demand charge of less than \$2 per kva. Some of these customers include hospitals and universities where interruptible service is not practical. There are also a host of process oriented customers who indicate that the cost of shutdown and start-up together with any lost revenue, would exceed the savings gained through interruptible service. These customers typically do not have standby generation capability.

WWP does provide the Potlatch Corporation with 25 MW of interruptible service at its Lewiston Plant under a special contract. This service to Potlatch can only be interrupted by WWP when the company cannot meet its firm obligations. The price paid by Potlatch for interruptible energy is the market price of power at the time of delivery plus a fixed charge to recover administrative costs and an allocation of transmission costs. Potlatch has substantial generation capacity at the plant, most of which it sells to WWP under contract. They can generate into their own load requirements for short periods of time based on the market price of energy versus the cost of generation. WWP will continue to examine the feasibility of interruptible arrangements where they make sense for both WWP and the customer.



**Appendix B****Addressing a  
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(continued)**

## Strategic Objectives

WWP has developed several strategic plans in order to provide focus for the corporation into the future, e.g., the Electric Strategy & Business Plan and the Natural Gas Strategy & Business Plan. Each plan contains various objectives and targets which apply directly to aspects of WWP's core businesses; however, the two objectives described in this section are perhaps the most important to WWP's **overall** financial health and competitive viability--cost containment and rate stability. WWP has also committed to grow its business through acquisitions such as the recent purchase of the Sandpoint electric properties from Pacific Power.

### Cost Containment

What can a corporation do to remain competitive in an uncertain environment? WWP has chosen primarily to scrutinize its costs especially those designated as capital costs. WWP's capital budget for 1995 is \$40 million less than the budget of 1994. In the long-term, both redesign and the merger with Sierra Pacific will yield significant cost savings.

WWP is also working specifically to reduce its cost of electric production. This goal was one of four established by management and the Electric Strategy Team to address several immediate financial concerns for the company. The first step was to separate WWP's activities into three general areas--purchased power, thermal operations and hydro operations. Progress has been made in each of these three areas. Work is continuing to achieve significant cost reductions.

### Rate Stability

WWP and Sierra Pacific have proposed to the state regulatory commissions that there will be no general rate increases by either company until the year 2000 once the merger becomes final. WWP has already built an outstanding rate stability record having not filed a general rate increase since 1987 in Washington and since 1986 in Idaho. The company is proud of this accomplishment. We feel that meeting competition can only be done if costs are controlled and rates are stable.

### Acquisitions

In October of 1994, WWP received permission from the Idaho Public Utilities Commission (IPUC) to finalize its acquisition of the Sandpoint area electrical system, and as of Jan. 1, 1995, has ownership of the property. WWP was already in the area with

its natural gas properties and PacifiCorp was experiencing financial challenges with the continued operation and maintenance of the stand-alone system. WWP has made several commitments to the 9,300 affected customers including an immediate one percent residential rate decrease and subsequent freeze those new rates for the next four years. These customers existing rates are slightly higher than WWP's rates and the company plans to use the differential to cover the margin paid for the system (\$26 million). After four years, residential customers in the area will be switched to WWP's Idaho rates.

The company will continue to examine other acquisition opportunities in either the gas or electric business. If the acquisition can be shown to be beneficial to WWP and the customers being acquired, then the company will pursue these business opportunities.

## Technology

History has shown that industries experiencing an increase in competition will also experience an explosion of applicable technological breakthroughs. Even though the electric industry is far from being totally competitive, the number and complexity of advancements currently being written about is astounding. From commercial-level fuel cells to tiny diodes which simply turn off a light after ten minutes of use, these developing technologies are becoming more and more a part of our energy environment. WWP employees are currently tracking technological advancements in three areas: generation, energy management and appliance efficiencies. *Note: A full overview of current fuel cell technology and WWP's involvement in the commercialization of certain units is available in Appendix H, pages 126-127.*

### Generation

During the past few years, there have been some significant efficiency improvements for new generating plants. For example, combustion turbine heat rates have declined substantially as improvements on the part of turbine manufacturers continues. In addition to improvements in these existing generating facilities, electricity in the future will be produced by what are known as "distributed generation" technologies. They are smaller, cleaner and quieter than traditional power plants and can be located closer to where power is consumed. This means they require little or no new transmission lines to connect them to power grids. Some of these technologies are solar photovoltaics, batteries, small combustion turbines, and fuel cells.

While numerous questions remain, distributed technologies are likely to totally

**Appendix B****Addressing a  
Changing Utility  
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(continued)**

transform the way energy is used in the next century. Power production could eventually be tailored to suit applications instead of the other way around. Utilities will be compelled to compete with independent power producers to offer the most cost effective resources and the best customer service. We plan to rise above the competition by keeping in tune with technological advancements and ensuring we can offer a wide range of energy services to customers.

**Energy Management Systems (EMS)**

Energy Management Systems (EMS) are used to control customer electrical loads through the use of computer technology. The systems allow utilities to better control loads and/or alter the shape of daily/weekly loads. This results in a lower energy bill through energy efficiency or a reduction in demand on the utility. Some of the more advanced EMSs provide programmable control of energy use in response to changing energy prices. The changing prices reflect a utility's varying costs of producing and delivering electricity. However, the technology still remains very expensive; the estimated average cost of a residential interactive energy management system is \$700 to \$850 per home.

**Appliance Efficiencies**

New, more efficient appliances are continuing to provide customers with greater value for their energy dollar. For example, a particular new gas heat pump is 40 percent more efficient than the highest efficiency gas furnace currently available, plus it provides cooling in the summer months. Very soon the industry will see an unprecedented array of innovations like microwave clothes dryers and the induction cooktops which heat only the food in the pan. Whirlpool recently won the right to produce a super refrigerator. A consortium of electric utilities offered a prize of \$30 million for the best design. The Whirlpool design will use one third the electricity of a normal refrigerator. It is estimated that a 22 cubic foot refrigerator will use the same electricity as a 75 watt light bulb.

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**Tree  
Trimming  
Open Houses**

**Appendix C**

**Resource  
Planning  
Integration  
(continued)**

<b>Issue</b>	As part of WWP's Vegetation Management Plan, each spring the company coordinates its circuit trimming cycle. In the spring of 1993, the plan called for circuit trimming on Spokane's South Hill and in the spring of 1994 the plan called for trimming in the Coeur d'Alene area.
<b>Meeting(s)</b>	WWP's Forestry Department sent mailings to residents announcing the date, time and place of the meetings along with a brief summary of what would be discussed. For South Spokane, 6,000 mailings were sent while 15,000 were sent for Coeur d'Alene. Two meetings were held in Spokane in March and two meetings were held in early June in the Coeur d'Alene area.
<b>Messages</b>	<ul style="list-style-type: none"> <li>• In order to provide reliable service and overall safety in the communities it serves, WWP has developed a comprehensive, system-wide Vegetation Management Plan. Begun in 1990, the primary goals of the program are: <ul style="list-style-type: none"> <li>-- To increase electric safety and reliability</li> <li>-- To reduce tree related outages, interruptions and hazards associated with branches momentarily or continuously contacting the line and branches or trees falling into lines</li> <li>-- To reduce the potential for sparking and arcing associated with contact between trees and powerlines during windy, wet or extreme weather conditions</li> <li>-- To increase customer awareness of how trees impact electrical system reliability</li> </ul> </li> <li>• WWP specifies a 10-foot line clearance for all species of trees in order to maintain safe and consistent clearances until the next trimming cycle. WWP's trimming cycle is estimated to be every three to five years.</li> <li>• If removal of a tree is necessary, WWP Forestry Department can provide residents with a tree selection guide that will assist in selection of an appropriate tree to plant near power lines.</li> </ul>
<b>Outcomes</b>	Forestry employees note that the mailings increased awareness and created a knowledge base among neighbors about WWP's tree trimming programs. Moreover, residents were on the whole positive about the need to trim overgrown trees in light of safety and reliability of service aspects. An estimated 230 residents total attended the two Spokane meetings while 30 to 40 residents attended the two Coeur d'Alene meetings.

## Transmission Projects

<b>Issue</b>	WWP has always been interested in ensuring the reliability of service to its customers. In the last two years, WWP initiated several transmission upgrade projects--three of which WWP held meetings with the public to discuss route options. These three projects were called: Lyons & Standard, Dower Road and Otis Orchards.
<b>Meeting(s)</b>	<ul style="list-style-type: none"> <li>• The <b>Otis Orchards</b> project required two public meetings over the course of two years. The first public meeting was held in April of 1992 and an additional meeting was held in June of 1992. For each meeting, WWP transmission employees sent out approximately 1500 informational invitations to Otis Orchard residents.</li> <li>• The <b>Dower Road</b> meetings were held in Post Falls in June of 1992 and September of 1993. About 300 to 400 letters were sent to business owners along the proposed line corridor.</li> <li>• The <b>Lyons &amp; Standard</b> meeting was held on March 22, 1994 in north Spokane after extensive interviews with schools, businesses and neighborhood organizations. About 2,500 letters were sent to residents in north Spokane.</li> </ul>
<b>Topics</b>	<p><b>Otis Orchards</b> The new line will allow WWP to continue to provide reliable service to current and future customers in the Spokane Valley. WWP has identified five possible routes for consideration. The public was encouraged to comment on the route recommendations.</p> <p><b>Lyons &amp; Standard</b> A single, 115 kV transmission line brings power to the Lyons &amp; Standard substation in north Spokane. WWP's recommended strategy is to construct a new 115 kV transmission line between the Lyons &amp; Standard and Francis &amp; Cedar substations to create a backup power source.</p> <p><b>Dower Road</b> Kootenai Electric Cooperative, Bonneville Power Administration and WWP propose to collaborate on an electric system enhancement project. The three companies want to construct a 115 kV transmission line to serve the growing area of Cougar Bay and Mica Flats in south Kootenai County.</p>
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>• Those residents who attended the <b>Otis Orchards</b> meetings were able to follow the routes and discuss the pros and cons of all the routes with their neighbors and WWP representatives.</li> <li>• Those business owners along the preferred railroad corridor route agreed that overbuilding on the existing distribution power lines was the best way to mitigate the impact of the new <b>Dower Road</b> line.</li> <li>• At the public meeting, residents and business owners reinforced earlier findings that suggested a Francis Avenue route was preferred for the <b>Lyons &amp; Standard</b> line. Other route options would have called for a substantial number of new poles located along smaller residential streets.</li> </ul>

## Energy Information Shows

## Appendix C

### Resource Planning Integration (continued)

<b>Issue</b>	WWP's Marketing department has responsibility for the penetration and saturation of natural gas services throughout the company's service territory. The department uses a host of traditional (one-way) advertising vehicles to promote the wise and efficient use of natural gas, e.g., TV, radio and newspaper. However, Marketing also coordinates a series of public energy shows each year in order to provide an opportunity for two-way communication between WWP and the public. As stated before, direct communication with the customer is where true educational value for both WWP and its stakeholders is found.
<b>Meeting(s)</b>	<p>Since the 1993 IRP was published, Marketing has conducted a total of ten energy shows. The shows vary in almost all aspects including, location, size, length and format.</p> <ul style="list-style-type: none"> <li>• Five shows were held at Home and Garden Shows--Coeur d'Alene, Spokane (2), Sandpoint and Moscow</li> <li>• One show at a Business Fair in Coeur d'Alene</li> <li>• Two mall shows--one at U-City in Spokane and one at Silver Lake in Coeur d'Alene</li> <li>• Two shows at the Spokane Interstate Fair</li> </ul>
<b>Topics</b>	The overall theme of the energy shows is to promote the wise and efficient use of natural gas and gas products; however, <b>WWP representatives who host the shows are prepared to address any concerns that show attendees may bring up.</b> WWP marketing employees say that topics of interest with customers have ranged from concerns with WWP's ailing Steam Plant to questions about WWP's compact showerhead program--an arm of WWP's DSM programming.
<b>Outcomes</b>	The Marketing Energy Shows were not designed to produce hard, measurable outcomes, but rather were intended to give the public the opportunity to learn what WWP has to offer. The shows offer information and education for all of WWP's stakeholders--not just our customers.



**Rathdrum  
CT Project**
**WWP  
Public  
Outreach  
Program  
(continued)**

<b>Issue</b>	In order to provide more resource flexibility and most effectively meet peak electric energy demands, WWP proposed to construct a 176 MW natural-gas-fired combustion turbine generating plant on a site about one mile southeast of downtown Rathdrum, ID in July of 1992.
<b>Meeting(s)</b>	<ul style="list-style-type: none"> <li>• Two public comment meetings at Rathdrum City Hall, one on Jan. 7, 1992 and one on Jan. 8.</li> <li>• An open house was held on Sept. 15, 1993 at the Rathdrum City Hall to announce construction timeline.</li> <li>• The first on-site open house for the turbine project was held September 28, 1994.</li> </ul> <p>During the planning and design phases of the project, WWP estimates it held over 100 meetings with civic and special interests groups to ensure all surrounding residents had a chance to learn and comment on the project.</p>
<b>Topics</b>	<p><u>Environmental Commitment</u></p> <p><b>Air Quality</b> Computer modeling studies show anticipated emissions from the facility are well below state and federal air quality standards--even under a worse-case scenario.</p> <p><b>Water Quality</b> WWP is committed to the protection of the natural aquifer below the turbine site.</p> <p><b>Sound</b> When the turbines are in operation they run in the range of 68 decibels on the A-weighted scale at 400 feet from the exhausts. That's about as loud as a typical forced-air furnace.</p> <p><u>Project Benefits</u></p> <p><b>Needed Resource</b> The plant will help meet or back up peak electrical needs of retail and wholesale customers.</p> <p><b>Maintain Rate Stability</b> Total benefit of the project for WWP customers will be about \$130 million.</p> <p><b>Tax Benefits</b> The plant will pay an estimated \$900,000 to \$1.1 million in property taxes each year.</p> <p><b>Infrastructure Improvements</b> The project will assist the City of Rathdrum to add 2,000 gallons per minute of capacity to the local water system. In addition, WWP has paved 2.5 miles of Rathdrum streets.</p>
<b>Outcomes</b>	<p>Those residents who participated in WWP's public outreach forums made a real impact on the final design of the turbine project. Participants encouraged WWP employees to consider other backup fuel options beside diesel oil. After considerable analysis, a backup natural gas program was found to be just as economical and subsequently much less of a possible threat to the area's underground water supply.</p> <p>A citizen's group helped design the landscaping for the project and the WWP CT team made two major reconfigurations based on the recommendations from this team.</p>

## Spokane Steamplant Open Houses

## Appendix C

### Resource Planning Integration (continued)

<b>Issue</b>	<p>WWP bought the Spokane Central Steam Plant in 1916 and operated it to serve steam for heating customers in the downtown core. WWP used a variety of fuels at the plant including coal, electricity, wood waste, natural gas and heavy oil. In 1982, employees detected an oil leak at the plant and promptly reported it to the authorities; WWP at that time began monitoring the spill in consultation with the Department of Ecology. Ecology directed WWP to discontinue monitoring in 1984. Monitoring studies were reactivated in 1991 as a result of changed legislation and to fully disclose the status of the spill to prospective buyers of the property. The results indicated traces of oil at a monitoring well north of the site which previously had shown no signs of oil saturation. Subsequent studies have shown the affected area to be greater than earlier estimates. Downtown business owners have raised concerns over potential impacts on property and plans for oil clean-up.</p>
<b>Meeting(s)</b>	<p>WWP has hosted several meetings with the downtown property owners and neighbors of the steam plant in order to keep them informed of the company's investigation work. In addition, two meetings for the general public have been held to allow business owners and residents to voice their concerns and learn more about issues surrounding the central steam plant. The first meeting was held in 1993 on December 10 at the Towne Center Motor Inn in downtown Spokane. This meeting was sponsored solely by WWP. The second meeting was a public hearing sponsored by the Department of Ecology. It was held July 21, 1994, at the Ecology office in north Spokane.</p> <p>In August of 1994, WWP supported the formation of a Steamplant Neighborhood Committee to ensure the steamplant neighbors' concerns are addressed. WWP representatives meet with the committee as necessary.</p>
<b>Topics</b>	<p>Generally, the information WWP has disseminated has been in the form of newsletters on investigation activities. The most important messages are:</p> <ul style="list-style-type: none"> <li>• The oil does not pose a threat to environmental or human health</li> <li>• The oil does not pose a threat to Spokane's aquifer</li> <li>• WWP is striving to find a cleanup solution that is in compliance with Ecology and acceptable to the community</li> </ul> <p>An important development in the spring of 1994 was WWP's decision to voluntarily enter a consent decree process to be administered by the Department of Ecology. Under the process, Ecology will review and oversee all site remediation and evaluation in response to the oil release. The process brings the state's guarantee that the final remedy will be publicly developed, legally compliant and environmentally correct.</p>
<b>Outcomes</b>	<p>Due to feedback WWP and the DOE received within the public participation component of the consent decree, the DOE extended the public comment period allowed for the consent decree from 30 to 90 days. WWP provided \$50,000 in grants for the steam plant neighbors to hire their own spill investigation consultant. This would ensure an independent assessment of the remedial investigation was readily available for their review.</p>

## Sandpoint Open Houses

<b>Issue</b>	In February of 1994, WWP and PacifiCorp announced their intent to transfer ownership of all PacifiCorp's electric properties in northern Idaho to WWP. The agreement is subject to regulatory review including approval by the IPUC and the FERC. The agreed upon cash price for the properties is more than \$26 million.												
<b>Meeting(s)</b>	<p>In order to provide residents in the area a chance to learn more and voice their concerns about the proposed acquisition of Pacific Power's Sandpoint service territory by WWP, the company held a series of informational open houses in and around Sandpoint. The largest meeting was the Sandpoint Open House held April 12, 1994, at the Sandpoint Community Hall. Most of the open houses were held in subsequent weeks including:</p> <table> <tr> <td>Clark Fork . . . . .</td> <td>March 28</td> <td>Priest River . . . . .</td> <td>April 20</td> </tr> <tr> <td>Oldtown . . . . .</td> <td>April 22</td> <td>Kootenay-Ponderay .</td> <td>April 26</td> </tr> <tr> <td>Hope-East Hope . . . .</td> <td>May 3</td> <td>Sagle . . . . .</td> <td>May 9</td> </tr> </table>	Clark Fork . . . . .	March 28	Priest River . . . . .	April 20	Oldtown . . . . .	April 22	Kootenay-Ponderay .	April 26	Hope-East Hope . . . .	May 3	Sagle . . . . .	May 9
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<b>Topics</b>	<p>Most of the messages focused on the benefits current PacifiCorp customers would realize through the proposed acquisition. Some of the key ones are:</p> <ul style="list-style-type: none"> <li>• Customers will realize long-term rate stability. The area is isolated from the rest of the PacifiCorp system and the company was facing the potential for substantial future rate increases in the area.</li> <li>• Customers will benefit from the close proximity and direct link with WWP's facilities and support services in Spokane and Coeur d'Alene.</li> <li>• WWP will be equipping crews with updated equipment.</li> <li>• At the time of the sale, WWP will implement a one percent rate decrease to residential customers and will freeze residential prices until the turn of the century.</li> </ul>												
<b>Outcomes</b>	<p>WWP had originally proposed to employ only one full-time line crew in the Sandpoint area. At the first three open houses, PacifiCorp customers voiced their concerns with this proposal maintaining that one crew was simply not enough to ensure safety and reliability. After hearing these concerns and conducting further analysis, WWP changed its original proposal to reflect the placement of two permanent crews.</p> <p>WWP had not originally planned to finish construction of the Clark Fork substation which PacifiCorp had already poured the foundation for. However, after meeting with Clark Fork residents on March 28, the WWP agreed to provide the much needed station.</p>												

### Technical Advisory Committee (TAC)

Comprised of representatives from customer groups, government agencies and environmental organizations, the TAC reviews all of WWP's resource planning activities. WWP sponsored seven TAC meetings during this latest two-year planning cycle. Major resource management issues discussed included:

- DSM and DSM mid-course adjustments
- RFP updates and status reports
- Renewable resources update
- Environmental Externalities
- 50 aMW planning criteria
- Regional Transmission Groups (RTGs)
- Avoided cost filings
- Wholesale marketing
- Load forecasting and scenarios
- Capacity and energy planning
- Model enhancements
- Canadian entitlements
- Clean Air Act Amendments

### DSM Issues Group (DIG)

The DIG concept was first introduced as a result of filings in 1992 by WWP to implement gas and electric demand side management programs, along with corresponding accounting treatment in the states of Idaho and Washington. The concept was eventually incorporated into both the WUTC and the IPUC orders. The orders directed WWP to facilitate the formulation and operation of the DIG and to provide periodic update reports to the respective Commissions.

The DIG consisted of technical experts, consumer advocates members of regulatory commission staff. As ordered by state commissions and as agreed to by WWP and other parties, the DIG addressed the following issues related to the 1992-1994 DSM programs:

- DSM program evaluation and measurement of savings
- Needed modifications and/or mid-course program corrections
- Cost-effectiveness methods and criteria
- Updating avoided cost especially with regard to gas
- Appropriateness and level of incentive for DSM
- Lost and found margins as a result of DSM
- Issues related to low income participation
- Amortization periods for various measures and programs
- Interaction of these programs on gas main extension policies
- Appropriateness of decoupling for WWP
- Revised or new DSM assessment

**Appendix C****Resource  
Planning  
Integration  
(continued)**

The DIG reached varying degrees of consensus during their discussions of these issues. The group has been instrumental in ensuring the success of WWP's three year DSM experiment. Now tariffs are in place to continue DSM programming for the 1995-96 period; however, the company does not plan to have the DIG meet regularly during this time. Public involvement will continue on DSM issues on a case by case basis.

**Resource Clearinghouse**

Throughout the 1993-1994 planning period, WWP's Resource Clearinghouse was responsible for overall integration of resource acquisition activities. For WWP, the results of the Resource Clearinghouse effort are reflected in a long-term resource strategy which is consistent with our business plans as well as near-term budgeting requirements.

The Clearinghouse has the vital role of bringing employees up to date on resource mix changes and the development of new strategies. New ideas are the result of accessing a wide range of different viewpoints throughout the group. The end result is stronger resource programs that have majority support. Input from the public and the TAC are a part of these resource decisions as well as business judgement from company management.

**IRP Public Outreach**

WWP used three communication vehicles to ensure both WWP customers and the public had a chance to learn about and comment on the company's resource plans. The vehicles were: a short questionnaire within the company's customer newsletter--the *Gazette*, a region-wide press release announcing a public meeting and an ad in the Spokesman-Review newspaper announcing the same meeting.

In order to determine how customers would like to receive information about the company's resource plans, a questionnaire was included within the *Gazette*. The *Gazette* reaches more than 275,000 gas and electric customers throughout the Inland Northwest. Specifically, the questionnaire asked if customers would like to receive a summary of the plans, attend a public meeting, fill out a feedback sheet, etc. Over 25 percent of responding customers indicated they would be willing to attend a public meeting.

An overwhelming majority of respondents simply wanted to receive a written summary of the plans. WWP sent about 200 summaries of the electric IRP to questionnaire respondents. The summary was designed with the information customers indicated they were interested in, e.g., fish, conservation, supply & demand, etc.

The public meeting was held on February 15, 1995. It was advertised with a region-wide press release as well as an ad in the Spokesman-Review newspaper. Seven members of the public attended the joint gas and electric informational meeting. WWP employees from Gas Supply and Power Resources presented summaries of the natural gas and electric IRPs. They also fielded questions as well as took note of comments made about the plans.

### **IRP Questionnaire Results**

Total Responses	190	(100%)
Wanted an IRP Summary	133	(70%)
Would attend a public meeting	39	(21%)
Would fill out a feedback sheet	127	(67%)
Would record input via telephone	37	(19%)
Would prefer not to participate directly	15	(0.08%)
Interested in environmental issues	67	(35%)
Interested in supply and demand	32	(17%)
Interested in conservation	55	(29%)
Interested in all three areas	47	(25%)

## Appendix D

Summary Report  
for 1993  
Action Plan

# Summary Report for 1993 Action Plan

In the 1993 Electric IRP, WWP listed specific action plan activities which were to be accomplished during the past two-year planning cycle. This appendix summarizes the company's progress on these individual action items. More detailed reports on these activities can be found in Appendices B, G and H. The 1993 Action Items appear in the left column in italics with a summary of the company's response in the right column.

## Planning Process

*Continue to involve interested parties as members of the Technical Advisory Committee.*

WWP continues to maintain its TAC. The company sponsored seven TAC meetings during this latest two-year planning cycle. Issues discussed ranged from DSM to Canadian Entitlements.

*Provide involvement opportunities through technical workshops, public meetings and project specific activities as they are required.*

WWP has restructured and enhanced its public involvement process. Our public outreach core team has designed a clear mission and goals for effective communication with the public.

*Continue to utilize the Resource Clearinghouse as a way to better coordinate integrated resource planning . . .*

The Clearinghouse held approximately 20 meetings throughout the planning cycle in order to address each resource option available to the company.

*Continue active involvement in regional, state and local planning activities.*

Throughout this latest planning cycle, WWP has maintained strong involvement and at many times leadership positions within various planning groups, e.g., Growth Management and Regional Transmission Groups.

## Load Forecasting

*(A) residential end-use model (REDMS) will be used as the baseline forecast for preparation of the 1995 IRP.*

Implementation of a full-scale REDMS was completed February 1994. A workshop was held at the time to illustrate its forecasting capabilities. REDMS was used to produce the residential sector sales forecast for the 1995 IRP.

*The forecast produced by the commercial end-use model (CEDMS) will be used as the baseline forecast for preparation of the 1995 IRP.*

CEDMS was simulated with three alternative scenarios and the electric and gas forecasts produced by the model were used in the 1995 IRP.

*Development of improved and expanded components of the Spokane County and Kootenai County models are planned for mid-1993 and mid-1994.*

Both the Spokane and Kootenai County models were expanded to meet the 1995 IRP forecasting cycle. The forecasting needs of both CEDMS and REDMS were enhanced by this development.

## 1993 Action Items

### Demand-Side Management

*Continue to implement the commercial/industrial efficiency program.*

*Continue to implement the commercial/industrial fuel-efficiency program.*

*Design and implement a small commercial lighting program by mid-1993.*

*Design and implement a motor efficiency program by the end of 1993.*

*Continue to assess the demand-side resource potential in the commercial sector using the CEDMS.*

*Continue to implement WWP's Energy Exchanger program.*

*Continue to implement the weatherization, shower head, compact fluorescent, (etc.) programs.*

*Assess the DSM potential in the residential sector using the REDMS by August 1994.*

*Complete all objectives as outlined in WWP's 1993 Measurement and Evaluation plan.*

*Complete all DIG activities in early 1994. Corresponding to the 1995 IRP schedule, recommend long-term DSM goals for the company.*

## Actions Taken

This program will continue to be offered until Dec. 31, 1995; however, effective Jan. 1, 1996, the program will be modified to lower funding limits.

This program was terminated in April of 1994. Through Sept. 1994, this program has saved .95 aMW at a levelized utility cost of 2.91 cents/kWh.

This program expired on Dec. 31, 1994. Savings for the program are counted as part of the commercial/industrial energy-efficiency program.

A prescriptive high-efficiency motor rebate program was implemented in Sept. 1993. This program expired on Dec. 31, 1994.

DSM supply curves in the commercial sector were developed using the CEDMS. These curves will be used in the 1995 IRP.

In the second mid-course filing of April 1994, the funding for space heat conversion was eliminated and the funding for water heat conversion was lowered. The water heat conversion funding expires at the end of 1994.

The regular as well as limited income weatherization funding levels were reduced effective Jan. 1, 1995. The showerhead/aerator program was completed at the end of 1994. Compact fluorescent rebates of \$5 will continue to be offered through 1995.

DSM supply curves in the residential sector were developed using the REMS end-use model in mid-1994. These supply curves were used in the 1995 IRP.

The company completed all the evaluations as described in the Measurement and Evaluation plan. All evaluations were made available to DIG participants.

The DIG discussed eleven issues presented to it by the commission at the time of the 1992 approvals. A high level of resolution was reached on some issues while others were "teed up" for resolution by the commission. Although WWP has filed to continue DSM programming for the 1995-96 period, the company does not plan to have the DIG meet regularly during this time.



## Appendix D

### Summary Report for 1993 Action Plan (continued)

#### 1993 Action Items

##### Supply-Side Resource Opportunities

*Complete the Cabinet Gorge Unit No. 1 turbine upgrade.*

*Complete the replacement of two Nine Mile turbine-generator units.*

*Further evaluate all system hydro improvement opportunities and provide recommendations.*

*Evaluate the economics of replacing the Colstrip Units No. 3 and No. 4 high-pressure and low-pressure turbine rotors.*

*Monitor the distribution loss savings program of the company.*

*Finalize the transmission system loss saving study.*

*Facilitate the installation of two natural-gas-fired simple-cycle combustion turbines.*

*Negotiate favorable terms and conditions for a long-term extension of the Wanapum and Priest Rapids power sale contracts.*

*Implement steps necessary to extend the contracts with Chelan County PUD and Douglas County PUD.*

#### Actions Taken

In July of 1993, the 40-year-old Unit 1 at Cabinet Gorge was placed out of service and removal of the turbine runner began. Installation of a new turbine runner was completed in March of 1994.

This work was initiated due to the economic benefits of replacement of 1908 vintage equipment. New units 3 & 4 went on-line for commercial operation June 30, 1994. Reconstruction of Unit 1 & 2 intakes has now been completed.

In 1994, the company revised two previous studies to assess the most prudent course on two of our facilities--the Long Lake Second Powerhouse Study and replacement of the second unit at Cabinet Gorge.

Evaluations regarding the economics of replacing both Units 3 and 4 turned out favorably. Installation of low pressure rotors has already been complete for Unit 3 while two will be installed in Unit 4 in 1996. Unit 3 is scheduled for a new high pressure turbine in 1997.

The distribution loss savings program has continued to concentrate on economic conductor sizing, higher efficiency transformers and power factor correction. All distribution feeders have been modeled for computer analysis while standards on power factor correction and capacitor voltage rise were written for field personnel.

Our transmission loss savings study is still ongoing. The analysis is being done as part of the West of Hatwai expansion project. Study results are expected by mid-1995.

Required permits for WWP's 176 MW gas-fired combustion turbine plant were acquired in September 1993. Construction began in October of 1993 with the turbine-generator units arriving on-site in April of 1994. As of Jan. 1, 1995, the units are up and running.

WWP did not meet the December 1994 goal of contract completion; however, progress among the parties has been made and the company expects to obtain an agreement in principle by December 1995.

This is an ongoing process that has not been implemented. All efforts with the mid-Columbia contract negotiations has focused on Grant County PUD.

## 1993 Action Items

### Resource Management Issues

*Continue to evaluate the effects to hydroelectric system operation resulting from efforts to protect fish stocks listed under Endangered Species Act (ESA).*

*Develop a plan for successful relicensing of the company's existing hydroelectric plants under FERC guidelines.*

*To meet regulatory requirements, submit a RFP or alternative to the WUTC by June 1993.*

*Based on projected resource needs, file an updated avoided cost with both the WUTC and the IPUC.*

*Continue to monitor and evaluate the effects of environmental externalities on new resource acquisition decisions.*

*Participate with other plant owners to determine the best compliance strategy for the Centrailia coal-fired plant.*

*Continue to monitor and evaluate the effects of the 1992 Energy Policy Act, including the impact of transmission access legislation.*

*Evaluate the effects of a proposed federal energy tax (BTU tax) on the cost of providing energy services.*

## Actions Taken

ESA issues continue to dominate main stem Columbia River planning activities. WWP and other utilities have shares in mid-Columbia output which could be impacted. WWP relicensing efforts for Noxon and Cabinet Gorge include an in-depth inventory of habitat and populations of bull trout.

WWP has already formulated an overall relicensing goal and associated principles. The company's goal is to renew licenses to be the low-cost energy provider of choice by maintaining the integrity and flexibility of our hydro resources; optimizing costs and benefits; and operating in a socially responsible manner.

On July 1, 1994, WWP received 12 bid proposals in response to its RFP. The 1993 IRP showed small retail needs in the near future. Conditions for the 1995 IRP show even less need for firm resources. Consequently, WWP did not accept any of the bid proposals.

In 1993, WWP filed revised avoided costs rates with both the WUTC and IPUC. The WUTC approved the revised rates in April 1994. In Idaho, a motion to consolidate the filing together with PacifiCorp and Idaho Power Company was granted by the IPUC in January 1994. In January 1995, the IPUC asked WWP to refile, incorporating updated variables.

WWP continues to monitor the environmental externality issues surrounding its resource management decisions. The company utilizes critical research from the EBI and other entities in order to keep abreast of the latest findings from across the nation.

All Centralia owners are currently involved in a Reasonable Available Control Technology (RACT) review. The RACT included eight different options for controlling emissions of SO<sub>2</sub> and was submitted to the Southwest Air Pollution Control Authority (SWAPCA) in September 1994. SWAPCA has issued the RACT document; it is currently being reviewed by the owners.

WWP is continuing its evaluation and monitoring of the evolving effects of the 1992 Energy Policy Act. The Company supports the major objectives of the EPAct, which are competition in generation, alternative fuels/sources, energy efficiency/conservation, and environmental protection. WWP is presently complying with many of the items required in the EPAct.

WWP had several concerns with regard to the implementation of the BTU tax including: the ability to pass BTU tax through to customers and the total effect on the price of natural raw materials such as coal.

**Appendix D****Summary Report  
for 1993  
Action Plan  
(continued)****1993 Action Items**

*Finalize the economic analysis of the interconnection using the latest information from B.C. Hydro and other participants.*

**Resource Plan Evaluation**

*Expand the use and capability of the SRPM model as it applies to resource planning.*

*Evaluate other models that would potentially replace or enhance the company's technical resource planning capabilities.*

*Continue development of the company's new capacity planning tools.*

**Wholesale Marketing**

*Use wholesale marketing activities to maintain short-term and long-term resource balance.*

*Support evaluation of potential commercial arrangements for the proposed WWP B.C. Hydro Transmission Interconnection.*

**Actions Taken**

An economic analysis of a WWP-BC Hydro interconnection has been finalized. There are benefits that can be derived by WWP and other U.S. utilities if the line was completed; however, a decision to build will not be made until the necessary support is received and verification from future economic analysis has been completed.

In 1994, WWP contracted with Charles River Associates to transfer SRPM from an IBM computer platform to a Macintosh computer environment. This platform change allows the WWP analysts to more efficiently utilize available input data. The cost of this transfer, including testing of the converted package, was \$5,800. All studies completed for the 1995 IRP were completed on the Macintosh-based SRPM. In the process of this conversion, WWP also identified some additional improvements that would enhance the use and capability of SRPM. As a result, Charles River Associates completed some work to expand SRPM's functional features (e.g. the number of new resource accounts) and user interface (e.g. a new custom menu bar). Complete testing of these enhancements could not be completed for the 1995 IRP. Additional SRPM studies will utilize this new version and its associated capabilities.

For the 1995 IRP, WWP decided to move continue with the use of SRPM as the primary modelling tool. The proposed merger of WWP and Sierra Pacific Power will necessitate a complete review of all modelling requirements.

Given the rapid changes occurring in the electric utility industry, new tools are continually being evaluated and developed to assess how WWP will be effected by these changes and how best to take advantage of future opportunities. Work is progressing on the capacity model developed in 1993. It will be used as an aid in assessing WWP's peaking duration needs.

WWP is currently capacity and energy surplus. In 1994, WWP sold short-term capacity (one year or less) to Arizona Public Service, Enron Power Marketing and West Kootenay Power. These sales helped generate net revenues of about \$1 million.

WWP's wholesale marketing area continues to evaluate the potential for a commercial arrangement for this project.

## 1993 Action Items

*Identify and pursue those opportunities that add value to the existing system and provide a positive revenue benefit.*

## Actions Taken

In 1994, WWP finalized summer sale contracts with Modesto Irrigation District and PacifiCorp. These sales add value to the system by improving the annual system load factor--they help reduce the difference between WWP's winter and summer peaks. These contracts will provide annual net benefits in 1995 of approximately \$1.3 million. WWP also extended its backup energy sale to Seattle City Light for 1996 and 1997.

**Appendix E****1995  
Near-Term  
Action Plan**

# **1995 Near-Term Action Plan**

WWP's preferred energy strategy provides direction for the company's long-term resource acquisitions. The company's near-term action plan outlines activities that will support this strategy and improve the planning process. This chapter describes action items planned for 1995 and 1996. Progress on these activities will be monitored over the two-year planning cycle and reported in the company's next Integrated Resource Plan.

## **Public Process**

1. Continue to be involved with the public outreach programs in order to solicit meaningful public input and improve public education and support for resource planning.
2. Encourage participation of the TAC members and the Resource Clearing-house members in resource acquisition plans.

## **Merger Activities**

1. Support the hearing process before FERC and state commissions.
2. Facilitate transition activities to ensure merger savings are realized.
3. Develop plans for the merged company that will allow joint planning activities, such as IRPs, to utilize the strengths of both Sierra and WWP.

## **Load Forecasting**

1. Continue to update historical data base with actual data. This new data will be used to calibrate the forecast.
2. Evaluate elasticity impacts by May 1996.

## **Demand-Side Management**

1. Implement the programs included in the December, 1994 DSM filing.
2. Develop and implement appropriate measurement and evaluation analyses for programs filed in December, 1994.
3. Evaluate options to participate in regional, market transformation DSM

programs.

4. Develop plans for DSM program implementation beyond 1996 or post merger with Sierra Pacific.

### **Supply-Side Resource Options**

1. Maintain updated analysis on potential hydro upgrade opportunities.
2. Negotiate a favorable long-term extension of the Wanapum and Priest Rapids power sale contracts.
3. Continue to evaluate renewable resources, e.g. wind, and new/distribution resources such as fuel cells.
4. Finalize the transmission system loss savings study by December 1995.

### **Resource Management Issues**

1. Continue to evaluate the effects to hydroelectric system operation resulting from efforts to protect fish stocks listed under the ESA.
2. Implement plan for successful relicensing of the company's existing hydroelectric plants under FERC guidelines.
3. Actively participate in WUTC NOI activities.
4. Submit a RFP or alternative to the WUTC by June 1995.
5. Based on projected resource needs, file an updated avoided cost with both the WUTC and the IPUC by midsummer 1995.
6. Implement the best compliance strategy for the Centralia coal-fired plant.
7. Continue to monitor and evaluate the effects of the 1992 Energy Policy Act, including the impact of transmission access legislation.
8. Continue to monitor and evaluate the effects of environmental externalities on new resource acquisition decisions.
9. Finalize the discussions on Canadian Entitlements by 1996.

### **Resource Plan Evaluation**

1. Incorporate Prosym, an hourly production cost model, into the data/resource analysis used by the company.
2. Determine the capacity criteria for use in capacity planning by utilizing new capacity planning tools.

**Appendix E**

**1995  
Near-Term  
Action Plan  
(continued)**

**Wholesale Marketing**

1. Use wholesale marketing activities to maintain short-term and long-term resource balance.
2. Identify and pursue those opportunities that add value to the existing system and provide a positive revenue benefit.

## Appendix F

Resource &  
Contract  
Information

# Resource & Contract Information

The primary objective of the IRP is to develop a long-term plan for meeting WWP's energy requirements. This appendix discusses the resources and contracts that are coordinated to achieve the IRP objective. Specifically, WWP's current need for resources is described followed by an outline of the power sales agreements WWP holds with utilities and power producers throughout the region. The company's 1994 Request for Proposal (RFP) process and results are also included.

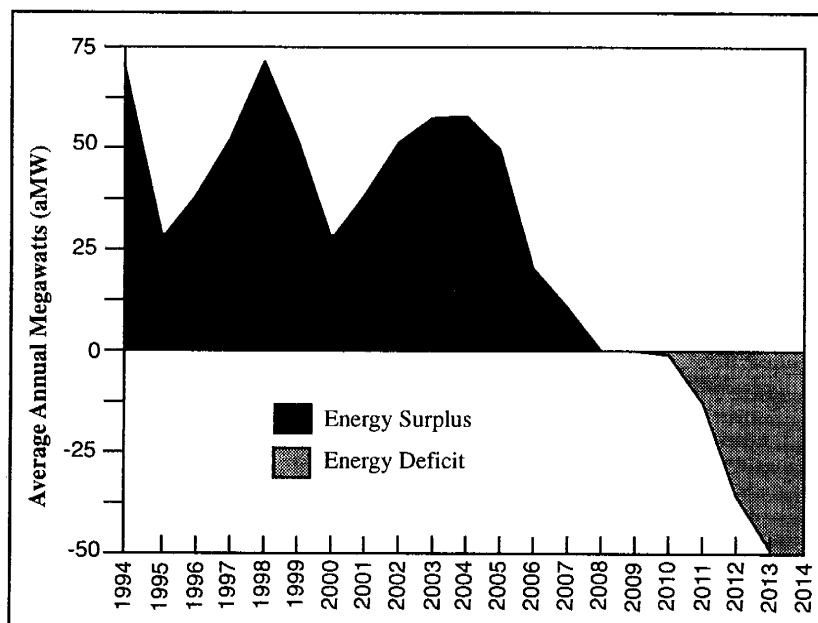
## Resource Need

Based on current customer requirements and contractual arrangements, WWP has no need for new firm electric resources for at least the next 10 years. While portions of WWP's service territory have experienced a surge in customer growth, long-term energy requirements are being restrained by several factors including:

- Conversion of electric appliances to natural gas.
- New construction utilizing natural gas in lieu of electric.
- Increased energy efficiency through building codes and enhanced appliances.

Table 1F

Energy  
Outlook  
1994 - 2014





However, WWP will continue to assess resource opportunities--focusing on those that return benefits to the company and its customers. This continual assessment of available resource alternatives helps WWP respond to constantly changing conditions. Some of these alternatives include:

- Hydroelectric plan upgrades that support FERC relicensing, improve efficiency and reduce long-term maintenance costs.
- Resource proposals submitted under the Washington state competitive bidding process.
- Qualifying facilities under the Public Utilities Regulatory Policies Act (PURPA) of 1978.
- Unsolicited proposals for new resource development or utility power purchase agreements.
- DSM that provides energy efficiency and customer service value.
- Short-term and seasonal purchases that preserve operating reliability margins.
- Cooperative regional efforts to develop new conservation, supply-side resources or transmission opportunities.
- Emerging resource technologies (fuel cell, etc.)
- Purchase and sales agreements that satisfy the company's wholesale marketing criteria.
- Cogeneration opportunities with the WWP service territory.
- Electric transmission and distribution loss savings.

## **Contract Information**

There have been some significant changes in the electric utility industry during the past two years. These changes are a result of competition due to decreasing natural gas prices, technology, open access, and customer demands for more energy service options. These changes have affected both the retail side of the business and the wholesale side.

As a result, the major changes in the Requirements and Resources tabulation between the 1993 IRP and now can be found in four categories. These categories are the load forecast, wholesale contracts, service territory acquisition, and combustion turbine energy.

The load forecast has declined significantly since the 1992 load forecast that was used in the 1993 IRP. The 1992 energy load forecast had an annual compounded growth rate of 1.4 percent. The new forecast shows less than 0.9 percent. Although the number of WWP customers has been growing, the energy use per customer has been

## Appendix F

Resource &  
Contract  
Information  
(continued)

decreasing, resulting in a lower growth rate for energy and capacity. Another reason for the reduced forecast is the inclusion of DSM savings resulting from WWP's programs that were initiated in 1992. Viewed as discretionary revenues in 1992, they are part of the new forecast for this IRP.

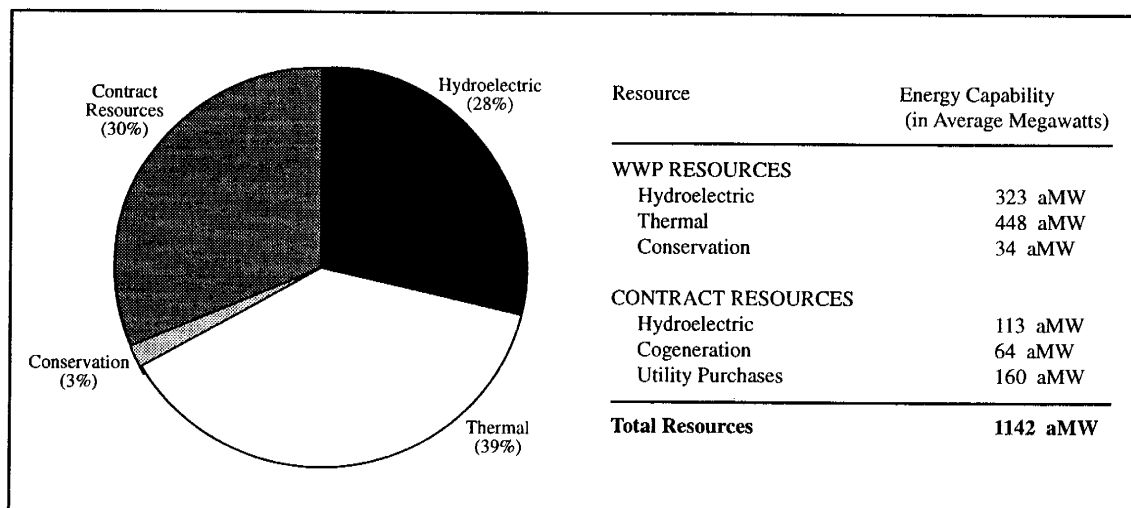
WWP has been actively involved in the wholesale markets. The revenues are used to reduce upward retail rate pressures. Some of the major contracts that have been added or changed from the 1993 IRP are:

- PG&E Exchange (terminated)
- PacifiCorp Exchange
- PacifiCorp Sale
- B.C. Hydro Purchase

WWP has acquired the Sandpoint electric service territory from PacifiCorp as of Jan. 1, 1995. The IPUC approved the agreement in December 1994. The Sandpoint service territory load adds about 54 MW of peak and 28 aMW of energy to WWP's requirements.

WWP entered into a long-term sales arrangement for 150 MW of capacity to Portland General Electric Company starting in 1992. This capacity contract is being served from WWP's system resources. In order to maintain the system under extreme conditions, such as extreme cold weather and low streamflows, WWP needed additional peaking capability. One such resource that could be brought on line in a comparatively short period of time and be cost effective when compared to other resources was combustion turbines. The company installed two combustion turbines at a site near Rathdrum, Idaho. The Rathdrum CT facility can produce 176 MW (winter rating) and 82 aMW of energy (based on the air quality permit).

Table 2F

1994  
Existing  
Resources

**Appendix F****Resource &  
Contract  
Information  
(continued)**

These changes, since the 1993 IRP, in loads, contracts and resources have resulted in a decreased need to acquire new resources. The Requirements and Resources tabulation dated October 4, 1994 includes these changes and results in a load-resource balance or surplus condition for several years. The capacity surplus extends until the year 2006 and the energy surplus until the year 2010. Without any new supply resources, programmatic conservation or extension of existing purchase contracts (such as the Mid-Columbia hydro purchase agreements) WWP's deficits by the year 2014 are 447 MW on peak and 60 aMW of annual energy.

WWP's low load growth and corresponding surplus situation has resulted in the pursuit of additional wholesale sale opportunities in order to utilize the surplus and create additional revenues. In addition, the company has several years to determine future needs and to evaluate future resource options. If conditions in the future change, WWP has the time to manage those changes in a way that will be beneficial to itself and its customers. If conditions remain as forecasted, WWP does not need any additional resource for several years and will not need to commit itself to expensive resources or purchases. The result will be a continuation of stable rates for WWP's customers. WWP will also continue to offer some conservation programs to its customers in order to maintain the DSM infrastructure already in place and to provide energy services to our customers as a part of our continuing commitment to our customers to be a total service company responsive to their needs.

## **Tabulation of Firm Requirements & Resources**

WWP's 20-year tabulation of firm requirements and resources shows by line item the various loads, resources and contracts the company holds by year. The peak column shows the maximum capability and requirements of the company during the year--this peak normally occurs in January. The average column shows the 12-month average energy numbers for the company with the exception of the hydro numbers which are at critical period average.

**THE WASHINGTON WATER POWER COMPANY**  
**TABULATION OF FIRM REQUIREMENTS & RESOURCES**

	-1994-		-1995-		-1996-		-1997-		-1998-		-1999-		-2000-	
	Peak	Average	Peak	Average	Peak	Average	Peak	Average	Peak	Average	Peak	Average	Peak	Average
<b>Figures are megawatts.</b>														
<b>FIRM REQUIREMENTS</b>														
1 System Firm Loads	1506	871	1496	878	1504	885	1513	892	1527	900	1541	908	1554	915
2 Puget #2	100	75	100	75	100	75	100	75	100	75	100	75	100	75
3 Sandpoint Load	0	0	54	28	55	28	56	28	56	29	57	29	58	30
4 PacificCorp 1994	0	0	0	8	0	12	0	12	0	12	0	12	0	12
5 PacificCorp Exchange	0	3	0	3	0	3	0	3	0	3	0	3	0	3
6 PGE #1	50	0	150	0	150	0	150	0	150	0	150	0	150	0
7 PGE short-term	100	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Pend Oreille	9	7	11	4	0	0	0	0	0	0	0	0	0	0
9 Modesto Irrigation District	0	1	0	2	0	3	0	0	0	0	0	0	0	0
10 BPA/WWP Exchange	0	28	67	57	68	23	0	0	0	0	0	0	0	0
11 PP&L 1989	150	50	150	50	100	33	50	17	0	0	0	0	0	0
12 NCPA	50	0	50	0	50	0	50	0	50	0	50	0	50	0
13 TOTAL REQUIREMENTS	1965	1035	2078	1105	2027	1062	1919	1027	1893	1019	1898	1027	1912	1035
<b>RESOURCES</b>														
14 System Hydro	908	323	908	323	908	323	908	323	908	323	908	323	908	323
15 Contract Hydro	223	113	223	102	200	93	200	93	200	93	200	93	200	93
16 Canadian Entitlement Return	-10	-3	-8	-2	-7	-2	-6	-2	-6	-2	-6	-4	-10	-5
17 Restoration	0	4	0	4	0	4	0	4	0	4	0	4	0	4
18 Small Hydro	7	8	7	8	7	8	7	8	7	8	7	8	7	8
19 Total Hydro	1128	445	1130	435	1108	426	1109	426	1109	426	1109	424	1105	423
20 Cogeneration	69	64	69	61	65	60	65	60	65	60	65	60	65	60
21 Northeast Combustion Turbine	69	54	69	54	69	54	69	54	69	54	69	54	69	54
22 Rathdrum Combustion Turbine	0	0	176	82	176	82	176	82	176	82	176	82	176	82
23 CSFE	36	14	32	13	28	13	23	12	23	11	20	8	10	5
24 PG&E Exchange	150	14	0	0	0	0	0	0	0	0	0	0	0	0
25 PacificCorp Exchange	0	2	50	3	50	3	50	3	50	3	50	3	50	3
26 BC Hydro	0	0	0	0	100	0	100	0	100	0	100	0	100	0
27 Montana Purchase	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Entitlement & Supplemental Cap	19	0	17	0	14	0	12	0	11	0	10	0	5	0
29 BPA #39216	79	67	79	67	79	28	0	0	0	0	0	0	0	0
30 BPA/WWP Exchange	0	0	0	0	0	11	29	26	32	29	32	29	32	12
31 BPA-WNP #3	82	27	82	27	82	27	82	29	82	32	82	32	82	32
32 BPA Capacity Purchase	50	0	50	0	50	0	50	0	50	0	50	0	50	0
33 Short-Term Peak Purchases	100	0	105	0	0	0	0	0	0	0	0	0	0	0
34 Short-Term Energy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Thermal	201	177	201	177	201	177	201	177	201	177	201	177	201	177
36 Kettle Falls	47	44	47	44	47	44	47	44	47	44	47	44	47	44
37 Colstrip	216	173	216	173	216	173	216	173	216	173	216	173	216	173
38 TOTAL RESOURCES	2246	1108	2323	1136	2285	1098	2229	1086	2231	1091	2227	1086	2208	1065
39 Reserves	-241	0	-245	0	-246	0	-247	0	-248	0	-250	0	-251	0
40 NET RESOURCES	2005	1108	2078	1136	2039	1098	1982	1086	1983	1091	1977	1086	1957	1065
41 SURPLUS OR DEFICIT	40	73	0	31	12	36	63	59	100	72	79	59	45	30

**THE WASHINGTON WATER POWER COMPANY**  
**TABULATION OF FIRM REQUIREMENTS & RESOURCES**

	-2001-		-2002-		-2003-		-2004-		-2005-		-2006-		-2007-	
	Peak	Average	Peak	Average	Peak	Average	Peak	Average	Peak	Average	Peak	Average	Peak	Average
<b>Figures are megawatts.</b>														
<b>FIRM REQUIREMENTS</b>														
1 System Firm Loads	1565	922	1577	930	1590	937	1603	945	1617	953	1630	961	1644	969
2 Puget #2	67	50	33	25	0	0	0	0	0	0	0	0	0	0
3 Sandpoint Load	59	30	60	31	61	31	62	32	63	32	64	33	65	33
4 PacificCorp 1994	0	12	0	12	0	12	0	0	0	0	0	0	0	0
5 PacificCorp Exchange	0	3	0	3	0	3	0	3	0	3	0	3	0	3
6 PGE #1	150	0	150	0	150	0	150	0	150	0	150	0	150	0
7 PGE short term	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Pend Oreille	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Modesto Irrigation District	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 BPA/WWP Exchange	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PP&L 1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 NCPA	50	0	50	0	50	0	50	0	50	0	50	0	50	0
13 TOTAL REQUIREMENTS	1891	1017	1870	1001	1851	983	1865	980	1880	988	1894	997	1909	1005
<b>RESOURCES</b>														
14 System Hydro	908	323	908	323	908	323	908	323	908	323	908	323	908	323
15 Contract Hydro	200	93	200	93	200	93	200	93	200	87	145	65	145	65
16 Canadian Entitlement Return	-10	-5	-10	-5	-10	-5	-15	-5	-15	-4	-11	-4	-10	-4
17 Restoration	0	4	0	4	0	1	0	0	0	0	0	0	0	0
18 Small Hydro	7	8	7	8	7	8	7	6	1	2	1	2	1	2
19 Total Hydro	1105	423	1105	423	1105	420	1100	417	1094	408	1043	386	1044	386
20 Cogeneration	65	60	65	60	65	60	65	60	65	60	65	60	65	60
21 Northeast Combustion Turbine	69	54	69	54	69	54	69	54	69	54	69	54	69	54
22 Rathdrum Combustion Turbine	176	82	176	82	176	82	176	82	176	82	176	82	176	82
23 CSFE	9	5	9	5	8	1	0	0	0	0	0	0	0	0
24 PG&E Exchange	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 PacificCorp Exchange	50	3	50	3	50	3	50	3	50	3	50	3	50	3
26 BC Hydro	100	0	100	0	100	0	100	0	100	0	100	0	100	0
27 Montana Purchase	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Entitlement & Supplemental Cap	4	0	4	0	4	0	0	0	0	0	0	0	0	0
29 BPA #39216	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 BPA/WWP Exchange	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 BPA-WNP #3	82	32	82	32	82	32	82	32	82	32	82	32	82	32
32 BPA Capacity Purchase	50	0	50	0	50	0	50	0	50	0	50	0	50	0
33 Short-Term Peak Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Short-Term Energy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Thermal	201	177	201	177	201	177	201	177	201	177	201	177	201	177
36 Kettle Falls	47	44	47	44	47	44	47	44	47	44	47	44	47	44
37 Colstrip	216	173	216	173	216	173	216	173	216	173	216	173	216	173
38 TOTAL RESOURCES	2174	1053	2174	1053	2173	1046	2156	1042	2150	1033	2099	1011	2100	1011
39 Reserves	-252	0	-254	0	-255	0	-257	0	-258	0	-259	0	-261	0
40 NET RESOURCES	1922	1053	1920	1053	1918	1046	1899	1042	1892	1033	1840	1011	1839	1011
41 SURPLUS OR DEFICIT	31	36	50	52	67	63	34	62	12	45	-54	14	-70	6

**THE WASHINGTON WATER POWER COMPANY  
TABULATION OF FIRM REQUIREMENTS & RESOURCES**

	-2008-		-2009-		-2010-		-2011-		-2012-		-2013-		-2014-	
	Peak	Average	Peak	Average	Peak	Average	Peak	Average	Peak	Average	Peak	Average	Peak	Average
Figures are megawatts. FIRM REQUIREMENTS														
1 System Firm Loads	1659	978	1673	985	1684	993	1698	1002	1711	1011	1728	1021	1747	1032
2 Puget #2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Sandpoint Load	66	34	67	34	68	35	69	35	70	36	71	36	72	37
4 PacificCorp 1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PacificCorp Exchange	0	3	0	0	0	0	0	0	0	0	0	0	0	0
6 PGE #1	150	0	150	0	150	0	150	0	150	0	150	0	150	0
7 PGE short term	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Pend Oreille	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Modesto Irrigation District	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 BPA/WWP Exchange	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PP&L 1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 NCPA	50	0	50	0	50	0	0	0	0	0	0	0	0	0
13 TOTAL REQUIREMENTS	1925	1015	1940	1019	1952	1028	1917	1037	1931	1047	1949	1057	1969	1069
RESOURCES														
14 System Hydro	908	323	908	323	908	323	908	323	908	323	908	323	908	323
15 Contract Hydro	145	65	145	57	70	30	70	27	33	14	33	14	33	14
16 Canadian Entitlement Return	-10	-4	-10	-3	-4	-2	-4	-2	-4	-2	-4	-2	-4	-2
17 Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Small Hydro	1	2	1	2	1	2	1	2	1	2	1	2	1	2
19 Total Hydro	1044	386	1044	379	975	353	975	350	938	337	938	337	938	337
20 Cogeneration	65	60	65	60	65	60	65	60	65	60	65	60	65	60
21 Northeast Combustion Turbine	69	54	69	54	69	54	69	54	69	54	69	54	69	54
22 Rathdrum Combustion Turbine	176	82	176	82	176	82	176	82	176	82	176	82	176	82
23 CSFE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 PG&E Exchange	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 PacificCorp Exchange	50	3	50	3	0	0	0	0	0	0	0	0	0	0
26 BC Hydro	100	0	100	0	100	0	0	0	0	0	0	0	0	0
27 Montana Purchase	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Entitlement & Supplemental Cap	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 BPA #39216	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 BPA/WWP Exchange	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 BPA-WNP #3	82	32	82	32	82	32	82	32	82	32	82	32	82	32
32 BPA Capacity Purchase	50	0	50	0	50	0	0	0	0	0	0	0	0	0
33 Short-Term Peak Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Short-Term Energy Purchases	0	4	0	15	0	50	0	50	0	50	0	50	0	50
35 Thermal	201	177	201	177	201	177	201	177	201	177	201	177	201	177
36 Centralia	47	44	47	44	47	44	47	44	47	44	47	44	47	44
37 Kettle Falls	216	173	216	173	216	173	216	173	216	173	216	173	216	173
38 Colstrip	2100	1015	2100	1019	1981	1025	1831	1022	1794	1009	1794	1009	1794	1009
38 TOTAL RESOURCES	2100	1015	2100	1019	1981	1025	1831	1022	1794	1009	1794	1009	1794	1009
39 Reserves	-263	0	-264	0	-265	0	-267	0	-268	0	-270	0	-272	0
40 NET RESOURCES	1837	1015	1836	1019	1716	1025	1564	1022	1526	1009	1524	1009	1522	1009
41 SURPLUS OR DEFICIT	-88	0	-104	0	-236	-3	-353	-15	-405	-38	-425	-48	-447	-60

**Appendix F****Resource &  
Contract  
Information  
(continued)**

## Capacity Need

The primary objective of least cost planning and the use of the Strategic Resource Planning Model (SRPM) is to develop a long-term plan for meeting WWP's energy requirements. In the past, WWP and other Pacific Northwest utilities have added resources to meet energy needs and relied on the region's excess hydroelectric resources to meet the capacity needs. These planning criteria are starting to change due to increasing peak requirements and reduced resource flexibility. WWP's current projections show no capacity need until 2006.

WWP's resource planning efforts have always included an assessment of system capacity needs. Periodically the company determines its capacity needs, reviews peak forecasting methodology, develops new capacity planning tools, and assess available capacity resource options.

Capacity requirements include a forecast of the company's native peak load, contract obligations and reserve requirements. Similar to the energy forecast, WWP projects monthly peak demand over the 20 year planning period. The peak load forecast is produced for the medium growth scenario only. The company's highest peak load typically occurs during the winter months of November through February. This peak, one hour demand, which is forecast to occur sometime during this period, is based on an average daily temperature of eight degrees Fahrenheit. Although WWP's service territory may experience colder temperatures, the company forecast needs are determined by the eight degree day.

Weather has a significant effect on peak loads. Based on recent analysis of historical temperature data for the Spokane area, the forecast temperature falls in the 97th percentile. In other words, 97 percent of the winter days are expected to average eight degrees or warmer. This cold spell analysis also indicates that Spokane experiences about three days per year when daily temperatures average eight degrees or colder. An average daily temperature of 32 degrees corresponds to the 50th percentile. This weather information is used to determine a relationship between temperature and peak loads. As average temperatures drop below eight degrees, peak loads are expected to increase at a rate of about 11 MW per degree.

WWP's obligations to provide capacity during the winter to other utilities primarily includes contracts with Puget Power, PacifiCorp and Portland General Electric. The agreements with Pacific Power and Puget Power expire in 1997 and 2002, respectively. The PGE contract began in 1992 and terminates in the year 2016. Under a seasonal exchange agreement with PacifiCorp, WWP provides energy and capacity to PacifiCorp in the summer and receives a like amount during the winter months. This exchange agreement ends in 2009.

A reasonable level of planning reserves helps the company ensure adequate generating capacity during periods of extreme weather or unexpected plant outages. WWP's capacity reserves include components for cold weather, generator forced outages and contingencies such as river freeze-up at hydroelectric plants. Although they vary by year, capacity reserves are approximately 12 percent of the company's total resources.

The combination of the forecast peak loads, contract obligations and reserve requirements represents the company's long term capacity requirements. These total capacity requirements are compared with WWP's existing peak resource capability and contract rights to determine a capacity surplus or deficit for each year. The numbers correlating to these items can be found in this appendix as the Requirements and Resources tabulation on pages 44-48.

WWP's Requirements and Resources tabulations indicate that the company's system will experience a capacity deficit situation in the year 2006, with a deficit of 54 MW. These peak deficits increase thereafter until reaching 447 MW in the year 2014. As energy resources are added to the system, they will also contribute to the capacity needs of the company. Other resources that can contribute capacity are demand-side resource, e.g. fuel switching, hydroelectric upgrades and improvements, combustion turbines, purchases (QFs, IPPs, utilities etc.), load control, time-of-use rates, and hydroelectric pumped storage.

WWP's peak needs after the year 2005 will be met mostly with DSM, hydro upgrades and Mid-Columbia contract renewals. Other peak needs will be met with purchases and combustion turbines. The company is fortunate that major capacity resource decisions will not have to be made for several years. This will allow enough time to really determine if those peak deficits are going to occur or not.

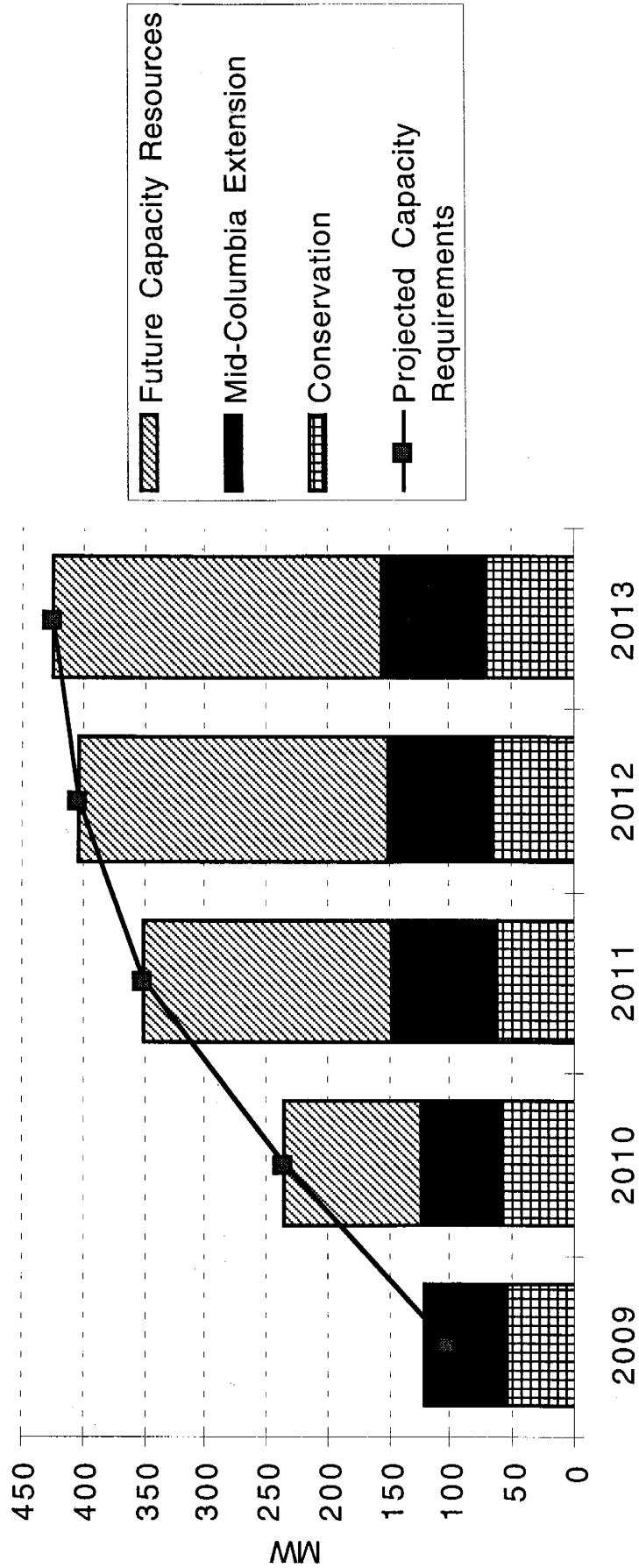
As the company adds programmatic DSM measures to the system at 2.2 aMW per year, WWP will receive a capacity component of about 3.7 MW per year. This means by the year 2006 WWP will have instituted a capacity saving on its system equal to about a 40 MW capacity resource. The company will also receive a capacity contribution from any hydro upgrades or improvements done to the hydroelectric system. In addition, the Mid-Columbia hydroelectric purchase agreements will be renegotiated and will contribute a significant block of capacity to WWP's system. Other peak needs, if determined to really exist and be of lasting duration, will probably be met by purchases from non utility and utility entities and/or the purchase or construction of combustion turbines.



Figure 1F

Future Capacity  
Requirements  
& Resources  
2009 - 2013

Future Capacity Requirements and Resources  
2009 - 2013



## Appendix F

Resource &  
Contract  
Information  
(continued)

## Existing WWP Generating Capability

The following is a tabulation of the maximum generating capability (the amount of energy the plant is capable of producing during peak conditions) and the nameplate capability (the amount of energy the equipment within the plant was designed to produce) for each of WWP's generating plants. WWP has no resource scheduled for retirement in the next 20 years.

<u>Year</u>	<u>Plant</u>	<u>Maximum Capability (kW)</u>	<u>Nameplate Capability (kW)</u>
1890	Monroe Street	13,000	14,800
1906	Post Falls	18,000	14,750
1908	Nine Mile	29,000	26,400
1910	Little Falls	36,000	32,000
1915	Long Lake	72,000	70,000
1922	Upper Falls	10,200	10,000
1952	Cabinet Gorge	236,000	221,900
1959	Noxon Rapids	554,000	466,720
1961	Meyers Falls	1,300	1,200
1974 <sup>1</sup>	Centralia <sup>2</sup> (15% ownership coal-fired)	201,000	199,469
1978	Northeast (gas/oil)	69,000	61,200
1983	Kettle Falls (wood waste)	47,000	50,700
1984	Colstrip <sup>3</sup> (15% ownership coal-fired)	216,000	233,400
1995	Rathdrum <sup>4</sup> (gas)	176,000	166,500

<sup>1</sup> The Centralia plant became operational in 1971; the power was surplus to the company and was sold to other utilities for three years. WWP took delivery of Centralia generation starting in 1974.

<sup>2</sup> The Centralia coal-fired plant has a 24-hour state certified test capability of 1,313 MW. At 15%, WWP's share is 196.95 MW. The plant has operated consistently above that number. For load and resource tabulations, WWP's share of Centralia is listed as 201 MW, a realistic figure based on past operations.

<sup>3</sup> The Colstrip coal-fired plant has test capability of 1,400 MW (total for units No. 3 and No. 4). At 15%, WWP's share of the project is 210 MW. The plant operator (Montana Power) operates the units in an over pressure mode that results in the plant exceeding its tested capability. Recent history indicates the plant operates consistently above 1,400 MW and for loaded resource tabulations is shown as 216 MW.

<sup>4</sup> The Rathdrum gas-fired, simple-cycle combustion turbines (two units) were declared available for commercial operation on January 1, 1995. The January rating capability for these units was 176 MW.

**Appendix F****Resource &  
Contract  
Information  
(continued)**

## Contracts with Utilities

### Bonneville Power Administration (BPA)

BPA is selling to the company long-term firm capacity of 50 MW for the period starting as early as May 1, 1993 (based on the availability of the California-Oregon Transmission Project) through September 30, 2010. There is a provision for termination upon five years' notice by either party. BPA shall make the capacity available ten hours a day and fifty hours a week. The company shall return the energy associated with the capacity deliveries the following day.

#### WNP No. 1 (Contract No. 39216)

The private utilities, Washington Public Power Supply System (WPPSS), and BPA entered into an agreement to replace the present Hanford NPR with a new nuclear steam supply and generating facility. This agreement resulted from the company's rights to power from the debt service portion of WPPSS costs on the Hanford NPR. The new plant is called WNP No. 1 and has a capability of 1,250 megawatts. The company will receive 80 megawatts at 85 percent plant factor for the period July 1980 through June 1996. For the first ten-year period, power was purchased at BPA rates, and for the balance of the contract the company will pay a fixed rate negotiated by the parties. This rate as shown below does not include any transmission costs/losses or relocation costs.

1991-92 (July - June)	43.98 mills/kWh
1992-93	45.01
1993-94	46.09
1994-95	47.22
1995-96	48.42

#### Deliveries to WWP

	Capacity (MW)	Energy (Average MW)
July 1980 through June 1996	80	68

### **WNP No. 3 SETTLEMENT**

On September 17, 1985, the company signed settlement agreements with BPA and the WPPSS in which the company agreed not to proceed further on the construction delay claims. In addition to settling the construction delay litigation, the BPA Settlement includes agreements for an exchange of energy, an agreement to reimburse the company for certain WNP No. 3 preservation costs and an irrevocable offer of WNP No. 3 capability for acquisition under the Regional Power Act.

Under the energy exchange portion of the BPA Settlement, the company expects to receive from BPA approximately 32 average megawatts for a period of up to 32.5 years, subject to a contract minimum of 5.8 million MWh. The company is obligated to pay BPA operating and maintenance costs associated with the energy exchange, determined by a formula in an amount not less than 1.6 cents per kWh nor more than 2.9 cents per kWh expressed in 1987 dollars, unless WNP No. 3 is completed in which case, under certain circumstances, the operating and maintenance costs may be measured by actual WNP No. 3 costs. The company began receiving power from BPA on January 1, 1987.

With the BPA Settlement, the company continues as an owner of WNP No. 3 under the Ownership Agreement and will continue to pay its ownership share of preservation costs. BPA is required to reimburse the company for the preservation costs and other costs of WNP No. 3 paid on or after February 1, 1985 through the date that WNP No. 3 is restarted or terminated. The reimbursement will be applied against the operating and maintenance costs which the company will pay BPA under the energy exchange portion of the BPA Settlement.

### **BPA/WWP Exchange**

The company and BPA entered into an exchange agreement for the term July 6, 1994 through June 30, 2000. WWP will deliver to BPA capacity and energy each month July 6, 1994 through June 30, 1996 and BPA will deliver to WWP an equivalent amount of power July 1, 1996 through June 30, 2000.

**Appendix F****Resource &  
Contract  
Information  
(continued)**

<u>CALENDAR YEAR</u>	<u>JANUARY CAPACITY - MW</u>	<u>ANNUAL ENERGY - aMW</u>
1994	0	28.2
1995	67	56.5
1996	68	23.2/11.2
1997	29	26.4
1998	32	29.2
1999	32	29.2
2000	32	12.0

**British Columbia Hydro (B.C. Hydro)**

WWP's Memorandum of Understanding, dated March 1990 as it relates to the construction of the interconnection, has a provision for the purchase of capacity from BC Hydro if the proposed interconnection is not completed. The term is 15 years commencing in October 1995. WWP may purchase 50 MW of capacity but is in the final stages of increasing the amount to 100 MW, available through out each year of the agreement. Energy accompanying the capacity deliveries is returned to BC Hydro or purchased by WWP at its option.

**Columbia Storage Power Exchange**

In 1968, the company was entitled to receive power from the Columbia Storage Power Exchange (CSPE), a nonprofit Washington corporation, which purchased Canada's share of the downstream benefits resulting from the Columbia River Treaty. The company's share of the power is five percent. It is obligated to pay five percent of CSPE's costs which are almost entirely debt interest and repayment charges. This contract will be in effect until the year 2003.

In conjunction with CSPE arrangements, the company has purchased Entitlement and Supplemental Capacity commencing April 1977. This is strictly a capacity purchase with the amount decreasing until 2003 when the Agreement terminates.

**Deliveries to WWP**

<u>CSPE</u>	<u>Capacity (MW)</u>		<u>Energy (Average MW)</u>	
	Gross	Net	Gross	Net
April 1, 1993 - March 31, 1994	38	36	15	14
April 1, 1994 - March 31, 1995	33	32	14	14
April 1, 1995 - March 31, 1996	29	28	13	13
April 1, 1996 - March 31, 1997	24	23	13	12

**Entitlement and Supplemental Capacity**

April 1, 1993 - March 31, 1994	19	19	0	0
April 1, 1994 - March 31, 1995	17	17	0	0
April 1, 1995 - March 31, 1996	14	14	0	0
April 1, 1996 - March 31, 1997	12	12	0	0

**Mid-Columbia Purchases****Chelan County PUD****Chelan Plant**

The company signed a 40-year contract in 1955 for the entire 58 megawatt capacity of Lake Chelan Hydro Plant by paying the district all costs associated with this plant including interest on and repayment of revenue bonds. The company sells back to Chelan PUD about 50 percent of the output to supply the requirements of the Chelan service area. The contract terminates June 21, 1995.

**Rocky Reach Plant**

The company has been receiving 3.9 percent or 32 megawatts of capacity from Rocky Reach Hydro Plant since 1961, but the debt interest and repayment charges were not a cost factor until 1963. The contract is in effect until 2011, and WWP's participation was reduced to 2.9 percent on July 1, 1977, for the remainder of the contract.

The company signed an amendment to the Rocky Reach Power Sales Contract June 1, 1968, which provides for company participation in the power output of four additional generating units at Rocky Reach. The company began receiving generation from these additional units in the fall of 1971. The company's percentage share in these additional units will be the same as the initial seven units and currently is 2.9 percent or 14 megawatts.

Capacity - WWP Share  
(MW)

July 1, 1977 - November 1, 2011

37

**Appendix F****Resource &  
Contract  
Information  
(continued)****Douglas County PUD****Wells Plant**

The company has a 50-year contract for 5.6 percent of the Wells Hydro Plant power. The power became available in 1967; however, it was assigned to other utilities until September 1, 1972, at which time the company started receiving this power. The PUD may withdraw, within certain limits, a portion of the plant output but cannot reduce the company's share below 3.5 percent. WWP's participation was 3.8 percent on September 1, 1992 and will be 3.9 percent on September 1, 1993. The contract is in effect until August 31, 2018.

	Capacity - WWP Share (MW-Based on 840 Total Plant)
September 1, 1992 - August 31, 1993	32
September 1, 1993 -	33

**Grant County PUD****Priest Rapids Plant**

The company first received power from Priest Rapids Hydro Plant in 1959, but debt interest and repayment charges didn't become a factor until 1961. The company's share of this plant's power was initially 11 percent or 98 megawatts of capacity. Reductions in the company's share were made by the PUD in predetermined maximum amounts on five years' notice. The company's share was reduced to 6.1 percent on September 1, 1983 and will remain 6.1 percent until the end of the contract. The contract is in effect until 2005.

	Capacity - WWP Share (MW)
September 1, 1983 - October 31, 2005	55

**Wanapum Plant**

The company received 13.1 percent or 118 megawatts of capacity commencing in 1964 but paid only its share of the operating charges. However, debt interest and repayment charges commenced January 1, 1965. Similar to the Priest Rapids Contract, the company's share was reduced to 8.2 percent on September 1, 1983 until the end of the contract. The contract is in effect until 2009.

## Capacity - WWP Share

(MW)

September 1, 1983 - October 31, 2009

75

**Modesto Irrigation District (Modesto)**

The company sells capacity to Modesto during the period June 1 to September 30 commencing June 1, 1995 through September 30, 1996. The maximum contract demand for 1995 is 36 MW and for 1996 is 50 MW, but Modesto prior to February 1 may request a change up to but not greater than 100 MW, if WWP agrees. Energy delivered up to maximum capacity amount will be paid by Modesto at WWP's quoted secondary energy price for that day.

**Northern California Power Agency (NCPA)**

The company is selling to NCPA capacity and energy for an 18-year term starting as early as May 1, 1993 (based on the availability of the California-Oregon Transmission Project) and ending September 30, 2010. Either party may terminate upon five years' notice but not earlier than June 30, 2001. NCPA shall purchase 50 MW capacity and associated energy from WWP at up to 100% daily load factor. WWP will purchase nonfirm energy on the daily spot market to support the energy portion of the sale.

**Pacific Gas & Electric Company (PG&E)**

Third party transmission became unacceptable to WWP resulting in the termination of this seasonal exchange with PG&E at the end of the 1993-94 winter season.

**Pacific Power & Light Company (PP&L)**

The company will sell power to PP&L company for the period February 13, 1989 through December 31, 1995. PP&L has elected to extend the agreement through 1997. The amounts of capacity and energy sold to PP&L are shown below:

<u>Year</u>	<u>Capacity-MW</u>	<u>Energy-aMW</u>
1992	150	50
1993	150	50
1994	150	50
1995	150	50
1996	100	33
1997	50	17



**Appendix F****Resource &  
Contract  
Information  
(continued)****PacifiCorp 1994**

The company and PacifiCorp entered into a ten year summer capacity sale for the period June 16, 1994 through September 15, 2003 (with PacifiCorp option to extend for up to five years). Delivery to PacifiCorp is June 16 through September 15, with PacifiCorp option to change the term to June 1 through September 30 by giving prior notice. The company will deliver 100 MW in 1994 and 1995 and 150 MW in 1996 and thereafter. Energy will be purchased at 33 percent load factor, if they take the fixed prices but at 25 percent if they take variable prices.

**PacifiCorp Exchange**

The company and PacifiCorp entered into a 15 year, 50 MW exchange, from June 16, 1994 through March 31, 2009. Delivery season is June 16 through September 15 in the summer to PacifiCorp and December 1 through February 28 in the winter to WWP. The energy exchanged is 27,600 MWh per season and the monthly load factor can vary between 0 to 50 percent. Either party may terminate the exchange with three years notice, after March 31, 2004.

**Pend Oreille County PUD**

In February 1991, the company agreed to a four-year power sale to the PUD starting July 1, 1991 and ending July 31, 1995. The PUD can schedule the energy up to the capacity rate stated in the contract.

<u>Year</u>	<u>Capacity - MW</u>	<u>Energy - aMW</u>
8/1/92 - 7/31/93	13	13
8/1/93 - 7/31/94	9	9
8/1/94 - 7/31/95	11	7

**Portland General Electric (PGE)**

The company is selling to PGE 100 MW of capacity, ten hours per day, fifty heavy load hours per week for the term March 1, 1992 through October 31, 1994. Within 168 hours the energy associated with the capacity deliveries shall be returned. In June 1992 the Company signed a long-term capacity sale with PGE for an additional 50 MW beginning November 1992 through October 1994, and 150 MW for the period starting November 1, 1994 through December 31, 2016.

### **Puget Sound Power & Light Company (PSP&L)**

The company, on January 1, 1988, entered into an agreement with PSP&L to sell a block of power for 15 years. The contract demand is 100 MW for contract years 1988 through 2000 and 67 MW for 2001 and 33 MW for contract year 2002, unless the contract is extended for two years. The two-year extension is dependent on whether the company has minimal load growth. Energy will be delivered to PSP&L based on 75 percent annual load factor. Energy shall not be scheduled for any hour at a rate higher than 100 MW or less than 30 MW. The price for energy starts at 31.5 mills/kilowatt-hour and is calculated each year based on the company's average power cost.

### **Seattle City Light (SCL)**

The company entered into a five-year Ross Reservoir Overdraft Protection Sales Agreement with SCL. SCL requires overdraft protection for its Ross reservoir for the period January 1 through June 30 of each operating year 1990-91 through 1994-95. This energy is made available up to 130,000 MWh each year at a rate not to exceed 100 MW. The company has the option to not deliver energy during any six hours each day.

The company entered into a new agreement for 1996 and 1997 with an option to extend annually for the period January 15 through April 15 up to 130,000 MWh.

For energy delivered, SCL shall pay 2.5 mills/kWh plus the incremental cost of the least costly thermal resource available, the weekly weighted average price of any nonfirm sales, the incremental cost of running combustion turbines, or 1.0 mill/kWh plus the purchase price of energy to the company.

**Appendix F****Resource &  
Contract  
Information  
(continued)**

## Purchases

In addition to WWP's Request for Proposal (RFP) process, the company reviews unsolicited proposals for power purchases on an ongoing basis. These proposals are typically sponsored either by other utilities or by developers of independent power projects. This section details the company's RFP process and related activities.

### Evaluation of 1994 Request for Proposals

On July 1, 1994, WWP received 12 bid proposals in response to its RFP. The RFP requested conservation and generation bids that the company could evaluate in the context of its overall resource acquisition activity. The 12 bids represented three resource categories. Five of the bids were demand-side management programs, four were generating facilities for wholesale opportunities and three were supply-side resources intended to match retail needs in lieu of company-sponsored projects.

Based on this evaluation and the preliminary results of the 1995 IRP showing a reduced need for new resources, WWP has determined that none of the bids offered an appropriate resource acquisition. As a result, the company did not accept any resource proposals under the RFP. No response sponsors were placed on a preliminary short list and WWP did not conduct further evaluation of the bid proposals.

The RFP process is one of the tools WWP uses to assess the cost and availability of new resources. The company continues to evaluate all resource opportunities and to work with resource developers to ensure that future resource needs are managed in a prudent and cost effective manner.

The company does not currently have any long-term firm wholesale transactions that would match and support acquisition of the bid resources. In the near-term, WWP's involvement in the wholesaling of power will rely primarily on resources presently available in the marketplace.

## Appendix F

Resource &  
Contract  
Information  
(continued)

## Generation Performance Data

This section includes five years of historical data relating to WWP's generation and power purchased from independent developers under PURPA regulations. It also includes a monthly summary of economy exchanges, purchases and sales. Resources are identified within one of the following categories:

1. Hydroelectric
  - Noxon Rapids
  - Cabinet Gorge
  - Post Falls
  - Upper Falls
  - Monroe Street
  - Nine Mile
  - Long Lake
  - Little Falls
  - Meyers Falls
2. Coal-Fired
  - Colstrip No. 3
  - Colstrip No. 4
  - Centralia No. 1
  - Centralia No. 2
3. Other
  - Kettle Falls
4. PURPA - Hydroelectric
  - Upriver Power Project
  - Big Sheep Creek
  - Jim Ford Creek
  - John Day Creek
5. PURPA - Thermal
  - Wood Power Project
  - Vaagen Brothers Power
  - Potlatch Forest Industries
6. Economy Purchases/Sales
  - Based on hydro and load conditions at time of purchase or sale.

*Note: PURPA facilities that produce less than 500 MWh/year are not listed.*

## Hydro Plants:

### Noxon Rapids

Rated Capacity: (Peak in MW)	Total 554	No. 1 107.5	No. 2 107.5	No. 3 107.5	No. 4 107.5	No. 5 124.0
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FERC License expiration date:  
April 30, 2005

<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>	<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>
1990	Jan	0.00	100.00	1993	Jan	0.00	86.40
	Feb	0.00	83.20		Feb	1.00	79.95
	Mar	0.00	82.70		Mar	2.00	77.36
	Apr	0.00	85.50		Apr	3.00	74.64
	May	0.00	99.90		May	5.00	96.17
	Jun	0.00	100.00		Jun	0.00	100.00
	Jul	0.70	96.40		Jul	0.00	100.00
	Aug	1.65	91.00		Aug	0.00	100.00
	Sep	0.00	61.00		Sep	0.00	97.52
	Oct	0.00	60.00		Oct	0.00	100.00
	Nov	0.00	80.00		Nov	0.00	100.00
	Dec	0.00	81.50		Dec	0.00	100.00
1991	Jan	0.00	100.00	1994	Jan	0.00	99.82
	Feb	0.00	99.00		Feb	0.00	100.00
	Mar	0.00	100.00		Mar	6.00	97.13
	Apr	0.00	99.60		Apr	22.00	83.06
	May	0.00	100.00		May	0.00	99.97
	Jun	0.00	100.00		Jun	0.00	100.00
	July	0.00	94.00		Jul	0.00	100.00
	Aug	0.00	81.00		Aug	0.00	100.00
	Sep	0.40	60.00		Sep	0.00	95.20
	Oct	0.10	74.00		Oct	0.00	85.53
	Nov	0.00	99.40		Nov	0.00	99.84
	Dec	0.00	94.00		Dec	0.00	96.77
1992	Jan	0.00	99.70				
	Feb	0.00	100.00				
	Mar	0.00	90.20				
	Apr	0.00	99.00				
	May	0.00	100.00				
	Jun	0.00	99.80				
	Jul	23.00	69.00				
	Aug	0.00	72.60				
	Sep	0.00	91.50				
	Oct	0.00	100.00				
	Nov	0.00	100.00				
	Dec	2.30	99.00				

\*Equivalent Availability Factor = Availability Factor = (Available Unit Days/Period Unit Days) x 100.

\*\*Forced Outage Rate = (Forced Outage Unit Days/(Service Unit Days + Forced Outage Unit Days)) x 100.

## Cabinet Gorge

Rated Capacity: (Peak in MW)	Total 236	No. 1 63.5	No. 2 57.5	No. 3 57.5	No. 4 57.5
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FERC License expiration date:  
January 9, 2000

<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>	<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>
1990	Jan	0.00	99.00	1993	Jan	0.00	100.00
	Feb	0.00	100.00		Feb	0.00	100.00
	Mar	0.00	100.00		Mar	0.00	95.00
	Apr	0.00	100.00		Apr	0.00	99.00
	May	0.00	100.00		May	0.00	100.00
	Jun	0.00	100.00		Jun	0.00	100.00
	Jul	0.40	98.00		Jul	0.00	83.00
	Aug	0.00	97.00		Aug	0.00	75.00
	Sep	28.00	60.00		Sep	0.00	75.00
	Oct	28.00	72.00		Oct	0.00	75.00
	Nov	17.00	80.00		Nov	0.00	75.00
	Dec	0.00	78.00		Dec	0.00	75.00
1991	Jan	0.00	94.00	1994	Jan	0.00	74.00
	Feb	0.00	97.00		Feb	0.00	75.00
	Mar	0.00	98.00		Mar	0.00	75.00
	Apr	0.00	100.00		Apr	0.00	83.00
	May	0.00	100.00		May	0.00	100.00
	Jun	0.00	100.00		Jun	0.00	100.00
	Jul	0.00	98.00		Jul	0.00	99.00
	Aug	0.00	87.00		Aug	0.00	99.00
	Sep	2.00	98.00		Sep	0.00	100.00
	Oct	2.00	99.00		Oct	4.00	97.75
	Nov	0.00	96.00		Nov	1.00	99.34
	Dec	1.00	99.00		Dec	0.00	99.67
1992	Jan	0.00	100.00				
	Feb	0.00	100.00				
	Mar	0.00	79.00				
	Apr	0.00	99.00				
	May	0.30	99.00				
	Jun	0.50	99.70				
	Jul	0.01	96.00				
	Aug	0.00	76.00				
	Sep	0.01	75.00				
	Oct	0.02	75.00				
	Nov	0.00	98.00				
	Dec	0.00	100.00				

\*Equivalent Availability Factor = Availability Factor = (Available Unit Days/Period Unit Days) x 100.

\*\*Forced Outage Rate = (Forced Outage Unit Days/(Service Unit Days + Forced Outage Unit Days)) x 100.  
Maintenance and outage records for the following plants are not computerized and exist in log style handwritten form. It would take many man-hours to obtain the necessary data to determine accurate

forced outage and availability data. Because of this, five years of data is not included. The data is available for inspection or recording at any time.

### **Post Falls**

Rated Capacity:	Total	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
(Peak in MW)	18.0	2.9	2.9	2.9	2.9	2.9	3.5

FERC License expiration date:  
July 31, 2007

### **Upper Falls**

Rated Capacity:	Total	No. 1
(Peak in MW)	10.2	10.2

FERC License expiration date:  
July 31, 2007

### **Monroe Street**

Rated Capacity:	Total	No. 1
(Peak in MW)	13.0	13.0

FERC License expiration date:  
July 31, 2007

### **Nine Mile**

Rated Capacity:	Total	No. 1	No. 2	No. 3	No. 4
(Peak in MW)	29.0	3.4	3.0	10.0	10.0

FERC License expiration date:  
July 31, 2007

### **Long Lake**

Rated Capacity:	Total	No. 1	No. 2	No. 3	No. 4
(Peak in MW)	72.0	18.0	18.0	18.0	18.0

FERC License expiration date:  
July 31, 2007

### **Little Falls**

Rated Capacity:	Total	No. 1	No. 2	No. 3	No. 4
(Peak in MW)	36.0	9.0	9.0	9.0	9.0

FERC License expiration date:  
(Not Applicable - License not required)

### **Meyers Falls**

Rated Capacity:	Total	No. 1	No. 2
(Peak in MW)	1.3	0.4	0.9

FERC License expiration date:  
December 31, 2023



## Coal-Fired Plants:

### Colstrip No. 3

Rated Capacity = 700 MW

Service Date = 1/10/84

Design Plant Life = 35 years

WWP's Share = 15%

Note: WWP uses 108 MW/unit based on an over pressure mode of operation.

<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>	<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>
1990	Jan	11.19	79.40	1993	Jan	0.00	98.78
	Feb	0.08	100.04		Feb	0.00	100.34
	Mar	1.62	94.25		Mar	61.62	38.54
	Apr	0.18	65.59		Apr	100.00	0.00
	May	23.95	56.17		May	48.14	48.02
	Jun	0.62	96.95		Jun	21.59	76.74
	Jul	67.14	32.26		Jul	0.12	99.37
	Aug	100.00	0.00		Aug	0.00	100.50
	Sep	30.78	59.87		Sep	49.08	49.90
	Oct	0.00	91.24		Oct	52.13	46.35
	Nov	13.01	86.63		Nov	23.06	76.82
	Dec	0.00	100.32		Dec	69.86	29.55
1991	Jan	3.48	94.84	1994	Jan	0.12	100.10
	Feb	9.27	86.23		Feb	10.80	88.23
	Mar	0.00	99.97		Mar	0.00	100.44
	Apr	0.00	100.16		Apr	0.00	100.52
	May	0.00	52.51		May	0.00	99.65
	Jun	2.13	29.41		Jun	0.00	100.14
	Jul	5.99	89.86		Jul	1.13	44.14
	Aug	0.00	99.37		Aug	16.78	81.00
	Sep	0.00	100.04		Sep	11.98	87.11
	Oct	1.77	96.95		Oct	0.39	98.91
	Nov	0.00	99.53		Nov	0.00	99.93
	Dec	2.73	96.40		Dec	0.00	100.05
1992	Jan	0.00	100.03				
	Feb	0.00	99.75				
	Mar	0.00	99.00				
	Apr	4.02	82.28				
	May	5.30	42.82				
	Jun	0.12	99.69				
	Jul	0.16	90.79				
	Aug	0.00	96.05				
	Sep	1.24	97.35				
	Oct	19.29	76.27				
	Nov	0.00	100.44				
	Dec	0.00	100.25				

Forced Outage Rate:

Forced Outage Hours/(Service Hours + Forced Outage Hours) x 100 (%).

Equivalent Availability Factor:

$$\frac{\text{Available Hours} - [(\text{Derated Hours} \times \text{Size of Reduction})/\text{Maximum Capacity}] \times 100 (\%)}{\text{Period Hours}}$$

**Colstrip No. 4**

Rated Capacity = 700 MW

Service Date = 4/6/86

Design Plant Life = 35 years

WWP's Share = 15%

Note: WWP uses 108 MW/unit based on an over pressure mode of operation.

<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>	<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>
1990	Jan	3.02	96.41	1993	Jan	0.00	100.16
	Feb	1.78	96.96		Feb	0.00	99.98
	Mar	0.08	99.44		Mar	39.80	59.35
	Apr	0.32	95.27		Apr	100.00	0.00
	May	41.04	58.06		May	100.00	0.00
	Jun	5.63	25.24		Jun	57.70	37.59
	Jul	17.13	80.34		Jul	0.00	100.17
	Aug	9.28	87.73		Aug	0.20	99.91
	Sep	0.26	99.41		Sep	10.93	87.51
	Oct	8.32	88.71		Oct	2.29	97.20
	Nov	9.00	90.52		Nov	0.00	99.80
	Dec	2.78	96.36		Dec	0.00	100.15
1991	Jan	0.43	98.55	1994	Jan	0.00	100.19
	Feb	4.14	95.30		Feb	6.56	93.25
	Mar	0.00	100.15		Mar	0.00	100.27
	Apr	10.91	56.35		Apr	70.30	29.43
	May	1.20	75.01		May	96.69	0.11
	Jun	2.80	95.09		Jun	5.44	91.47
	Jul	30.10	92.76		Jul	7.07	92.56
	Aug	0.00	93.64		Aug	7.69	91.44
	Sept	4.35	88.36		Sep	0.00	100.14
	Oct	0.00	99.86		Oct	3.65	94.30
	Nov	0.00	99.81		Nov	0.00	99.48
	Dec	5.04	94.46		Dec	0.18	99.50
1992	Jan	6.89	92.41				
	Feb	0.00	100.00				
	Mar	0.00	99.79				
	Apr	0.00	99.43				
	May	0.00	92.16				
	Jun	0.00	0.00				
	Jul	2.29	90.82				
	Aug	0.39	99.52				
	Sep	0.00	100.42				
	Oct	0.00	100.53				
	Nov	0.00	100.52				
	Dec	0.33	99.65				

**Centralia No. 1**

Rated Capacity = 700 MW

Service Date = 12/31/72

Design Plant Life = 35 years

WWP's Share = 15%

Note: WWP uses 100.5 MW/unit based on actual operating experience.

<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>	<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>
1990	Jan	2.84	97.00	1993	Jan	0.00	99.88
	Feb	9.12	91.00		Feb	0.00	99.73
	Mar	3.31	96.00		Mar	0.00	100.00
	Apr	0.00	43.00		Apr	0.23	99.77
	May	0.00	19.00		May	99.86	2.69
	Jun	0.00	97.00		Jun	44.96	55.10
	Jul	1.02	99.00		Jul	5.43	87.47
	Aug	10.89	89.00		Aug	18.22	81.51
	Sep	2.26	98.00		Sep	0.00	98.60
	Oct	0.00	100.00		Oct	0.00	97.83
	Nov	0.00	100.00		Nov	0.00	99.64
	Dec	0.00	100.00		Dec	0.00	99.75
1991	Jan	0.00	98.02	1994	Jan	0.00	99.43
	Feb	0.00	100.00		Feb	0.00	98.59
	Mar	0.00	100.00		Mar	0.00	99.08
	Apr	0.00	100.00		Apr	0.00	98.22
	May	0.32	99.67		May	0.00	62.84
	Jun	0.00	100.00		Jun	0.00	0.00
	Jul	7.17	89.65		Jul	0.68	82.30
	Aug	0.00	98.34		Aug	0.00	96.79
	Sep	5.98	93.88		Sep	2.49	92.47
	Oct	9.65	90.25		Oct	15.07	81.33
	Nov	0.00	99.80		Nov	0.00	97.35
	Dec	0.00	99.96		Dec	0.00	97.13
1992	Jan	13.30	84.50				
	Feb	0.00	99.80				
	Mar	0.00	100.00				
	Apr	0.00	99.48				
	May	0.00	48.30				
	Jun	2.43	41.95				
	Jul	0.13	99.27				
	Aug	0.00	99.95				
	Sep	3.05	96.95				
	Oct	11.00	88.75				
	Nov	0.00	99.99				
	Dec	8.17	91.67				

**Centralia No. 2**

Rated Capacity = 700 MW  
 Service Date = 7/11/73  
 Design Plant Life = 35 years  
 WWP's Share = 15%

Note: WWP uses 100.5 MW/unit based on actual operating experience.

<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>	<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Equivalent Availability Factor</u>
1990	Jan	0.00	100.00	1993	Jan	0.00	99.99
	Feb	30.39	68.00		Feb	2.49	96.75
	Mar	5.06	95.00		Mar	16.19	82.73
	Apr	0.00	100.00		Apr	0.00	98.94
	May	0.00	100.00		May	0.00	44.83
	Jun	1.19	99.00		Jun	0.00	5.44
	Jul	1.32	99.00		Jul	10.70	88.41
	Aug	10.04	89.00		Aug	39.38	60.08
	Sep	43.53	56.00		Sep	0.00	99.94
	Oct	0.32	100.00		Oct	7.68	91.66
	Nov	0.00	100.00		Nov	1.60	98.12
	Dec	0.00	100.00		Dec	5.38	94.42
1991	Jan	0.00	99.95	1994	Jan	0.00	99.23
	Feb	7.35	94.86		Feb	6.57	91.52
	Mar	1.12	98.95		Mar	15.43	83.87
	Apr	0.00	100.00		Apr	0.00	99.97
	May	0.00	5.06		May	7.58	92.27
	Jun	2.16	96.05		Jun	4.07	95.93
	Jul	15.18	83.58		Jul	12.01	69.15
	Aug	0.00	99.91		Aug	6.43	86.00
	Sep	16.56	82.19		Sep	7.33	90.19
	Oct	0.00	99.65		Oct	0.00	95.18
	Nov	0.00	99.76		Nov	0.00	84.19
	Dec	0.00	99.98		Dec	5.24	91.96
1992	Jan	0.00	99.16				
	Feb	20.38	78.94				
	Mar	0.00	100.00				
	Apr	0.00	99.71				
	May	0.00	99.90				
	Jun	0.00	100.00				
	Jul	0.00	99.91				
	Aug	0.00	99.73				
	Sep	0.00	99.39				
	Oct	0.00	99.22				
	Nov	7.99	91.77				
	Dec	0.00	99.92				

## Other Resources:

### Kettle Falls

Rated Capacity = 47.0 MW  
Service Date = 12/1/83  
Design Plant Life = 35 years

<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Availability Factor</u>	<u>Year</u>	<u>Month</u>	<u>Forced Outage Rate</u>	<u>Availability Factor</u>
1990	Jan	0.00	100.00	1993	Jan	1.87	98.13
	Feb	0.00	100.00		Feb	0.13	99.87
	Mar	0.00	100.00		Mar	0.16	99.86
	Apr	0.00	93.16		Apr	0.00	100.00
	May	0.00	45.07		May	0.00	52.68
	Jun	0.00	100.00		Jun	0.00	84.93
	Jul	0.00	100.00		Jul	8.34	97.94
	Aug	1.59	92.69		Aug	0.82	99.18
	Sep	0.09	99.91		Sep	0.00	100.00
	Oct	2.69	97.31		Oct	0.00	100.00
	Nov	0.09	99.93		Nov	0.13	99.87
	Dec	0.18	99.82		Dec	0.00	100.00
1991	Jan	0.08	99.93	1994	Jan	0.00	100.00
	Feb	0.00	100.00		Feb	0.00	100.00
	Mar	0.00	100.00		Mar	0.05	99.95
	Apr	0.00	100.00		Apr	0.00	100.00
	May	0.00	88.04		May	0.00	4.84
	Jun	0.00	57.92		Jun	73.13	6.85
	Jul	0.31	99.85		Jul	3.75	96.63
	Aug	0.51	99.49		Aug	0.07	99.93
	Sep	0.00	100.00		Sep	0.00	97.97
	Oct	0.00	100.00		Oct	0.00	99.87
	Nov	0.19	99.81		Nov	0.46	99.54
	Dec	0.07	99.93		Dec	0.06	99.95
1992	Jan	0.15	99.85				
	Feb	0.00	100.00				
	Mar	0.00	100.00				
	Apr	0.15	99.92				
	May	0.00	16.94				
	Jun	0.81	98.06				
	Jul	0.07	99.93				
	Aug	0.25	99.75				
	Sep	0.04	99.96				
	Oct	0.13	99.87				
	Nov	0.00	100.00				
	Dec	0.12	99.88				

Availability Factor: (Available Hours/Period Hours) x 100 (%).

## **PURPA Hydroelectric Plants:**

### **Upriver Power Project/City of Spokane**

Rated Capacity = 15,700 kW  
Hours Connected to System = Not Available  
Level of Dispatchability = None  
Expiration Date = 7/1/2004

<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>	<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>
1990	Jan	9,604,000	1993	Jan	3,080,000
	Feb	9,494,000		Feb	3,712,000
	Mar	11,147,000		Mar	7,172,000
	Apr	8,270,000		Apr	8,549,000
	May	9,590,000		May	8,501,000
	Jun	8,656,000		Jun	7,273,000
	Jul	4,926,000		Jul	6,043,000
	Aug	2,118,000		Aug	2,391,000
	Sep	2,381,000		Sep	2,849,000
	Oct	3,472,000		Oct	3,507,000
	Nov	6,218,000		Nov	2,632,000
	Dec	10,111,000		Dec	3,863,000
1991	Jan	9,630,000	1994	Jan	5,261,000
	Feb	8,836,000		Feb	3,251,000
	Mar	10,165,000		Mar	7,814,000
	Apr	9,176,000		Apr	10,311,000
	May	8,840,000		May	8,947,000
	Jun	10,093,000		Jun	4,299,000
	Jul	6,303,000		Jul	1,266,000
	Aug	1,990,000		Aug	316,000
	Sep	2,363,000		Sep	1,298,000
	Oct	2,991,000		Oct	2,279,000
	Nov	3,803,000		Nov	4,065,000
	Dec	5,298,000		Dec	7,507,000
1992	Jan	4,984,000			
	Feb	9,198,000			
	Mar	11,240,000			
	Apr	9,421,000			
	May	8,514,000			
	Jun	3,677,000			
	Jul	1,754,000			
	Aug	955,000			
	Sep	1,662,000			
	Oct	3,374,000			
	Nov	4,098,000			
	Dec	5,126,000			

**Big Sheep Creek Hydroelectric Project/Sheep Creek Hydro, Inc.**

Rated Capacity = 1,500 kW  
Hours Connected to System = Not Available  
Level of Dispatchability = None  
Expiration Date = 6/4/2021

<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>	<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>
1990	Jan	400,878	1993	Jan	126,819
	Feb	251,837		Feb	141,187
	Mar	702,491		Mar	326,782
	Apr	1,182,872		Apr	1,148,223
	May	479,477		May	1,101,290
	Jun	1,078,499		Jun	1,244,124
	Jul	1,114,331		Jul	1,081,973
	Aug	542,671		Aug	816,617
	Sep	272,271		Sep	393,447
	Oct	208,461		Oct	185,344
	Nov	268,185		Nov	184,599
	Dec	302,130		Dec	152,583
1991	Jan	228,689	1994	Jan	165,370
	Feb	667,926		Feb	148,355
	Mar	914,367		Mar	597,870
	Apr	1,174,015		Apr	1,148,509
	May	1,192,392		May	1,210,386
	Jun	1,056,586		Jun	1,144,926
	Jul	1,209,404		Jul	756,566
	Aug	549,192		Aug	226,656
	Sep	213,182		Sep	143,345
	Oct	141,150		Oct	119,670
	Nov	156,752		Nov	131,756
	Dec	122,230		Dec	107,974
1992	Jan	142,691			
	Feb	393,378			
	Mar	1,143,057			
	Apr	1,140,503			
	May	1,153,699			
	Jun	1,069,927			
	Jul	1,063,276			
	Aug	491,843			
	Sep	175,118			
	Oct	135,655			
	Nov	181,269			
	Dec	153,847			

# **Jim Ford Creek Power Project/Ford Hydro Limited Partnership**

Rated Capacity = 1,500 kW  
Hours Connected to System = Not Available  
Level of Dispatchability = None  
Expiration Date = 4/14/2023

<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>	<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>
1990	Jan	236,411	1993	Jan	67,622
	Feb	244,710		Feb	180,887
	Mar	221,666		Mar	529,719
	Apr	321,427		Apr	855,071
	May	0		May	494,367
	Jun	0		Jun	216,467
	Jul	0		Jul	150,380
	Aug	0		Aug	12,394
	Sep	0		Sep	0
	Oct	0		Oct	0
	Nov	0		Nov	0
	Dec	0		Dec	27,487
1991	Jan	47,686	1994	Jan	418,341
	Feb	599,450		Feb	61,727
	Mar	791,142		Mar	916,850
	Apr	651,392		Apr	719,671
	May	514,397		May	211,038
	Jun	520,018		Jun	292,244
	Jul	15,120		Jul	289
	Aug	0		Aug	0
	Sep	0		Sep	0
	Oct	0		Oct	0
	Nov	0		Nov	15,667
	Dec	240,557		Dec	251,395
1992	Jan	145,958			
	Feb	728,647			
	Mar	382,064			
	Apr	496,072			
	May	24,156			
	Jun	0			
	Jul	0			
	Aug	0			
	Sep	0			
	Oct	745			
	Nov	94,488			
	Dec	12,352			



# John Day Creek Hydroelectric Project/David Cereghino

Rated Capacity = 900 kW  
Hours Connected to System = Not Available  
Level of Dispatchability = None  
Expiration Date = 9/21/2022

<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>	<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>
1990	Jan	104,380	1993	Jan	0
	Feb	84,250		Feb	0
	Mar	131,530		Mar	61,490
	Apr	223,660		Apr	88,820
	May	329,230		May	387,550
	Jun	451,140		June	418,580
	Jul	378,790		July	448,690
	Aug	277,800		Aug	421,440
	Sep	155,790		Sep	316,150
	Oct	148,440		Oct	222,600
	Nov	130,700		Nov	166,720
	Dec	84,700		Dec	135,010
1991	Jan	75,050	1994	Jan	98,070
	Feb	106,590		Feb	54,880
	Mar	86,690		Mar	132,560
	Apr	64,240		Apr	160,280
	May	289,780		May	357,610
	Jun	455,130		Jun	419,330
	Jul	440,940		Jul	186,920
	Aug	248,520		Aug	151,260
	Sep	142,780		Sep	99,860
	Oct	97,330		Oct	73,790
	Nov	161,100		Nov	79,330
	Dec	116,080		Dec	0
1992	Jan	77,220			
	Feb	82,840			
	Mar	122,800			
	Apr	77,230			
	May	261,980			
	Jun	157,640			
	Jul	94,050			
	Aug	76,860			
	Sep	42,420			
	Oct	40,950			
	Nov	44,460			
	Dec	0			

**PURPA Thermal Plants:****Wood Power Project/Wood Power, Inc.**

Rated Capacity = 6,250 kW  
Hours Connected to System = Not Available  
Level of Dispatchability = None  
Expiration Date = 1/26/2019

<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>	<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>
1990	Jan	3,753,000	1993	Jan	3,287,000
	Feb	3,349,000		Feb	3,046,000
	Mar	3,381,000		Mar	3,274,000
	Apr	3,519,000		Apr	3,383,000
	May	3,380,000		May	2,881,000
	Jun	1,934,000		Jun	1,055,000
	Jul	3,435,000		Jul	3,396,000
	Aug	3,485,000		Aug	3,252,000
	Sep	3,632,000		Sep	3,135,000
	Oct	3,458,000		Oct	3,094,000
	Nov	3,647,000		Nov	3,636,000
	Dec	3,465,000		Dec	3,198,000
1991	Jan	3,596,000	1994	Jan	3,423,000
	Feb	3,108,000		Feb	2,695,000
	Mar	2,969,000		Mar	3,188,000
	Apr	3,836,000		Apr	3,204,000
	May	3,253,000		May	3,253,000
	Jun	2,658,000		Jun	2,004,000
	Jul	3,664,000		Jul	2,688,000
	Aug	3,253,000		Aug	3,175,000
	Sep	3,216,000		Sep	1,126,000
	Oct	3,438,000		Oct	3,941,000
	Nov	3,151,000		Nov	3,718,000
	Dec	3,488,000		Dec	3,513,000
1992	Jan	3,636,000			
	Feb	2,875,000			
	Mar	3,739,000			
	Apr	3,213,000			
	May	3,296,000			
	Jun	2,659,000			
	Jul	3,579,000			
	Aug	3,630,000			
	Sep	3,463,000			
	Oct	3,196,000			
	Nov	3,441,000			
	Dec	3,554,000			

# **Vaagen Brothers Power Project/Vaagen Brothers Lumber**

Rated Capacity = 4,000 kW  
Hours Connected to System = Not Available  
Level of Dispatchability = None  
Expiration Date = 3/31/95

<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>	<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>
1990	Jan	3,217,000	1993	Jan	2,387,000
	Feb	2,867,000		Feb	2,543,000
	Mar	3,229,000		Mar	2,392,000
	Apr	3,186,000		Apr	2,511,000
	May	2,468,000		May	2,824,000
	Jun	2,905,000		Jun	2,743,000
	Jul	3,177,000		Jul	2,246,000
	Aug	3,153,000		Aug	2,970,000
	Sep	2,759,000		Sep	2,819,000
	Oct	2,316,000		Oct	1,658,000
	Nov	2,924,000		Nov	2,824,000
	Dec	2,781,000		Dec	2,354,000
1991	Jan	2,632,000	1994	Jan	2,414,000
	Feb	2,634,000		Feb	2,338,000
	Mar	2,536,000		Mar	2,371,000
	Apr	2,943,000		Apr	2,716,000
	May	3,078,000		May	2,770,000
	Jun	2,695,000		Jun	2,684,000
	Jul	2,371,000		Jul	2,047,000
	Aug	3,164,000		Aug	2,473,000
	Sep	3,051,000		Sep	2,484,000
	Oct	2,522,000		Oct	2,108,000
	Nov	3,035,000		Nov	1,972,000
	Dec	2,371,000		Dec	2,219,000
1992	Jan	2,916,000			
	Feb	2,619,000			
	Mar	2,597,000			
	Apr	2,047,000			
	May	3,132,000			
	Jun	3,035,000			
	Jul	1,727,000			
	Aug	2,975,000			
	Sep	2,047,000			
	Oct	3,191,000			
	Nov	2,138,000			
	Dec	2,921,000			

## Potlatch Forest Industries - Lewiston

Rated Capacity = 59,000 kW (contracted amount)

Hours Connected to System = Not Available

Level of Dispatchability = None

Expiration Date = 12/31/2001

Note: WWP negotiated a special contract with Potlatch to buy a portion of their generation for ten (10) years, starting 1/1/92.

<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>	<u>Year</u>	<u>Month</u>	<u>Generation - kWh</u>
1992	Jan	37,405,000	1993	Jan	43,303,000
	Feb	40,670,000		Feb	39,219,000
	Mar	43,214,000		Mar	43,755,000
	Apr	42,074,000		Apr	42,327,000
	May	42,571,000		May	31,494,000
	Jun	10,876,000		Jun	29,224,000
	Jul	41,266,000		Jul	38,415,000
	Aug	43,562,000		Aug	43,481,000
	Sep	31,271,000		Sep	42,237,000
	Oct	42,732,000		Oct	43,809,000
	Nov	41,527,000		Nov	42,193,000
	Dec	43,360,000		Dec	43,833,000
			1994	Jan	43,518,000
				Feb	39,574,000
				Mar	41,618,000
				Apr	41,605,000
				May	43,191,000
				Jun	26,280,000
				Jul	43,462,000
				Aug	43,433,000
				Sep	30,261,000
				Oct	41,637,000
				Nov	41,265,000
				Dec	43,713,000

## Economy Purchases and Sales:

		<u>Total Secondary Sales-MWh</u>	<u>Average Cost Mills/kWh</u>	<u>Total Secondary Purchases-MWh</u>	<u>Average Cost Mills/kWh</u>
1990	Jan	258,519	29.8	87,982	22.4
	Feb	196,133	29.1	88,564	19.0
	Mar	116,187	18.5	117,677	15.4
	Apr	297,739	17.2	41,339	14.7
	May	272,861	18.8	68,383	14.4
	June	410,796	15.5	195,018	8.1
	July	226,884	18.8	83,718	12.9
	Aug	77,708	27.8	106,403	17.2
	Sep	80,023	28.0	93,615	19.3
	Oct	75,325	27.6	95,308	17.5
	Nov	129,404	22.0	107,329	13.1
	Dec	102,689	22.0	147,491	15.2
1991	Jan	162,923	17.65	105,889	14.34
	Feb	153,466	13.11	50,776	8.83
	Mar	168,227	13.25	97,500	10.86
	Apr	153,949	13.76	48,825	10.80
	May	291,659	10.39	86,052	8.07
	June	315,699	9.29	108,472	6.96
	July	185,297	9.36	67,488	8.34
	Aug	59,950	14.84	131,294	12.86
	Sep	48,314	20.51	92,137	17.05
	Oct	178,411	25.03	183,550	20.62
	Nov	141,643	31.96	73,919	23.81
	Dec	81,912	22.97	35,117	20.35
1992	Jan	91,907	19.57	41,524	18.33
	Feb	72,536	24.90	54,391	18.05
	Mar	81,963	15.91	58,721	13.43
	Apr	88,518	19.34	20,332	18.18
	May	186,052	20.03	93,154	18.61
	June	67,872	17.68	167,727	13.90
	July	91,075	20.34	30,110	21.22
	Aug	34,538	22.36	79,098	26.95
	Sep	83,130	24.05	95,676	25.19
	Oct	131,361	24.64	74,702	26.36
	Nov	127,553	27.09	83,201	25.73
	Dec	89,461	30.14	53,414	26.54

		<u>Total Secondary Sales-MWh</u>	<u>Average Cost Mills/kWh</u>	<u>Total Secondary Purchases-MWh</u>	<u>Average Cost Mills/kWh</u>
1993	Jan	260,608	43.46	121,824	26.68
	Feb	244,675	47.86	210,201	30.22
	Mar	131,927	31.73	172,685	24.13
	Apr	24,032	21.25	133,802	21.40
	May	106,909	6.82	106,235	12.81
	Jun	117,996	11.28	58,362	10.67
	Jul	118,653	13.91	78,778	12.67
	Aug	49,757	22.15	142,229	21.48
	Sep	55,055	22.56	65,942	25.50
	Oct	80,537	22.15	53,981	22.41
	Nov	122,778	27.32	61,734	26.46
	Dec	147,353	31.79	80,684	30.50
1994	Jan	143,427	21.12	43,778	20.16
	Feb	157,084	22.82	137,934	24.58
	Mar	98,466	18.56	33,798	19.41
	Apr	121,421	18.29	34,652	17.86
	May	193,070	16.70	56,512	16.66
	Jun	80,420	16.76	112,088	17.41
	Jul	17,594	19.67	203,756	23.72
	Aug	41,385	22.49	250,593	25.95
	Sep	96,491	20.42	195,074	26.78
	Oct	138,151	19.38	159,988	26.83
	Nov	136,233	19.19	154,199	28.04
	Dec	130,783	20.74	157,703	28.04

**Appendix G****Load  
Forecast**

# Load Forecast

WWP's electric forecast provides the basis for many of the company's planning and budgeting activities. This appendix describes the 1995 electric forecast scenarios for the medium (base) case, and a high case and low case alternative. Discussions include assumptions, methodology, and results, including a description of sales for each scenario.

## Summary

The company's electric forecast is prepared with a forecast horizon of 20 years. In even numbered years, formal alternative scenario forecasts are developed as a high and low case. The forecast provides the basis for company revenue budgeting, supply planning activities, and integrated resource planning efforts. The electric forecast is prepared concurrently with the natural gas forecast, utilizing common assumptions, which produces forecasts of customer energy needs taking into account the interaction between these alternative sources of energy. The company's use of end-use models covering all energy sources facilitates this process; specific end-use attributes are discussed later in this appendix. The results of the forecast are the planning forecast information used internally, as well as the official information supplied to external entities. In odd numbered years, a five-year updated forecast is prepared in order to provide short-term information for the annual capital and operations budget cycle.

The results of the next system load forecast are shown in Figure 1G. The corresponding compound growth rates are 1.3% for the high scenario, 0.9% for the medium and only 0.5% for low from weather adjusted 1993-2014. January peak demand forecasts are shown in Figure 2, with actual peaks for 1981 to 1993, and forecast peaks assuming average cold day weather in January of each year. This average represents the 50th percentile forecast, on an expected value basis. Cold weather peaking reserves of 10% changes the probability of exceedence from one chance in two to one chance in 20.

Figure 1G

Net System Load  
Firm &  
Interruptible

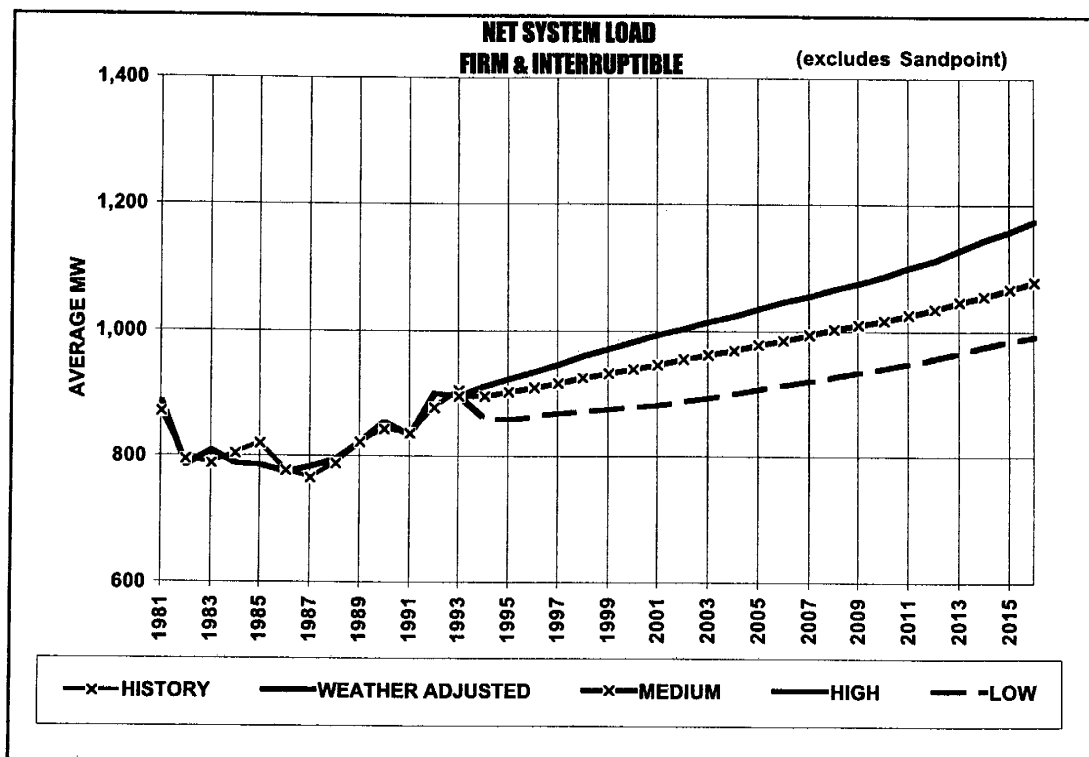
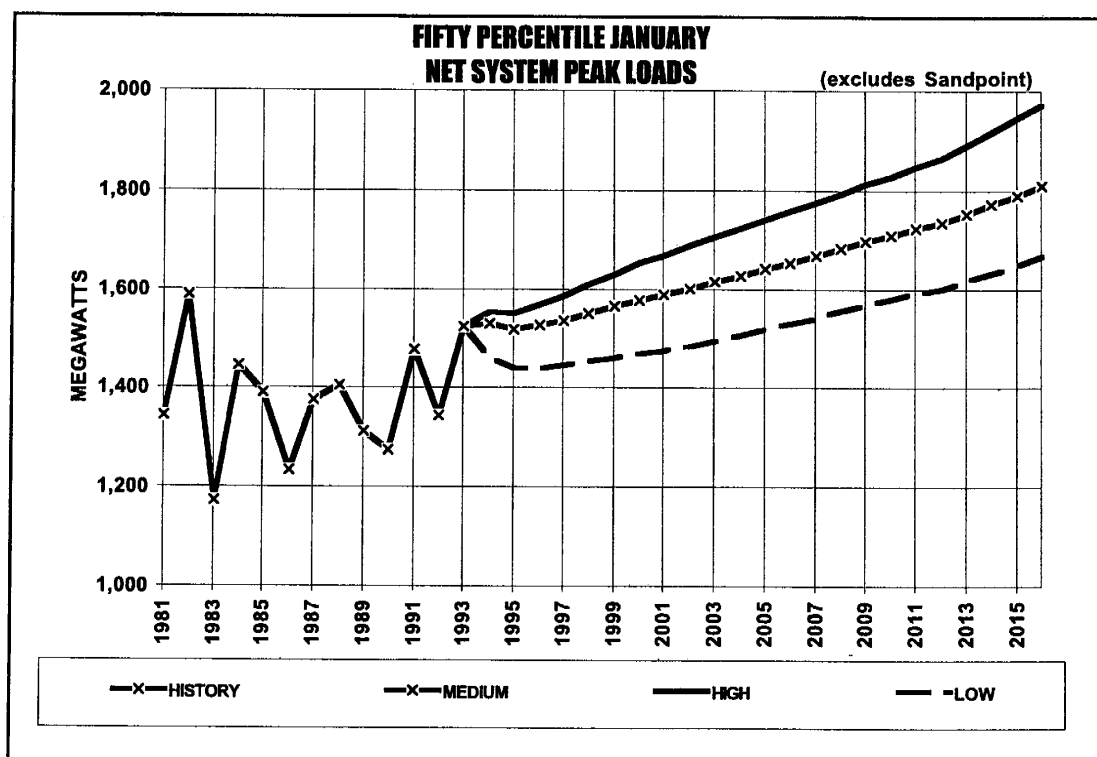


Figure 2G

Fifty Percentile  
January  
Net System Peak  
Loads





**Appendix G****Load  
Forecast  
(continued)**

## **Forecast Assumptions**

### **National Economic Assumptions**

The company contracts to a national economic forecasting company, Date Resources, Inc./McGraw-Hill (DRI). DRI provides three alternative economic scenarios used as exogenous assumptions for the natural gas scenarios. The DRI "Review of the U.S. Economy (Long-Range Focus), Winter 1993/94" is the document source.

The principal Trend projection (Table 1G) assumes the economy suffers no major mishaps between now and 2018. In the Trend simulation, the economy follows a pattern of smooth growth, with actual output approximately paralleling the path of potential output. This projection is best described by DRI as depicting the mean of all possible paths the economy could follow if no major disruptions occur. The underlying rate of growth in Trend is consistent with history as well as conjecture about the economy's unfolding structure. DRI represents that it can therefore be regarded as the best unbiased projection of the economy. The Trend scenario is used to produce economic, electric, and natural gas forecasts for the medium case.

The Optimistic alternative is characterized by higher growth in population, productivity and investment with low inflation. The Optimistic scenario is used for the high case scenario. The high case scenario in addition includes an assumption made explicitly by the company of zero real (inflation adjusted) increases in the principal electric competitive fuel, which is the commodity cost of firm core-market natural gas delivered to the WWP system. This assumption fuel choice attributes in the end-use model.

The Pessimistic alternative contains low growth in population, productivity and investment combined with higher inflation. The Pessimistic scenario is used for the low case scenario.

A full description of the principal exogenous assumptions, policy dimensions, behavior of economic agents and other parameters is contained in Table 1G.

Table 1C

**Capsule  
Summary of  
National Long-  
Term  
Projections**

### General Outlook

<b>TREND</b>	The economy exhibits mild variations in growth and approaches its balanced-growth path. Inflation rises slowly, averaging only 3.2%
<b>OPTIMISTIC</b>	High growth; low inflation. Deviations from trend due to differences in demographic assumptions, productivity growth, and investment.
<b>PESSIMISTIC</b>	Low growth; high inflation. . Deviations from trend due to differences in demographic assumptions, productivity growth, and investment.

### Principal Exogenous Assumptions

	TREND	OPTIMISTIC	PESSIMISTIC
Demographic	Census Bureau middle— -growth, fertility rate is 2.1 per year, immigration 800,000 per year.	Higher immigration at 1,400,000 per year.	Lower immigration at 120,000 per year
Energy Imports	Oil price rises average 5.8%	Oil price rises average 3.5%	Oil price rises average 7.0% per year. No embargoes.
Food Prices	Wholesale farm prices average 2.9% annual increases.	Prices average 2.1%	Prices average 4.6%

### Principal Policy Dimensions

Tax Changes	Small, steady increases in personal income tax rate from 1997 through 2011; rising sharply thereafter.	Same as trend.	Same as trend.
Growth of Federal Government	Real, -0.5%/year; nominal 3.5% per year. Real military purchases fall through 2004, then resume slow growth.	Real, -0.4%; nominal, 2.8%	Real, -0.9%; nominal, 4.5%
Transfer Payments	Real growth 2.8% per year	3.0% per year.	2.4% per year.
Budget Deficit	Averages 2.2% of GDP	1.2% of GDP	2.5% of GDP
Monetary Policy	Money (M2) growth 5.8%	Real interest rates remain within 50 basis points of trend.	Real interest rates within 20 basis points trend.

Table 1G

**Capsule  
Summary of  
National Long-  
Term  
Projections**

**(continued)**

**Appendix G**

**Load  
Forecast  
(continued)**

### Behavior of Economic Agents

	TREND	OPTIMISTIC	PESSIMISTIC
Consumers	Stable inflation rate and job security boost consumer confidence.	Same as trend	Lower real incomes depress consumer expenditures on durable goods.
Average Real Consumption Growth	1.8%	2.2%	1.4%
Business Fixed Investment Share of GDP	10.4%	10.6%	10.0%
State & Local Government Growth	1.9%	2.2%	1.5%
International Wholesale Price Inflation	3.2%	2.2%	4.7%
<b>Other Parameters</b>			
Productivity Growth Rates	1.3%	1.6%	1.0%
Consumer Price Inflation	3.6%	2.8%	5.2%
Hourly Earnings Increases	4.4%	3.2%	5.3%
Median New Home Price in 2018	\$381,000	\$351,000	\$464,000
Unemployment Rate Average	6.4%	6.4%	6.5%

### Service Area Economic Forecasts

The company has developed and maintains econometric forecasting models for both Spokane County, Washington, and Kootenai County, Idaho under contract with Tucson Economic Consulting (TEC), a specialized consultant in regional economic modeling and forecasting. In consultation with company staff, TEC prepares 20 year forecasts for the base (medium) case, and high and low scenarios.

About ninety percent of the company's service area economic activity occurs in this two-county area. Spokane County is used as the proxy for the Washington portion of the company's service area, and Kootenai County is used as the proxy for the Idaho portion. Historical economic data for each area is obtained from official county and state sources.

Each county model produces separate detailed forecasts of population, employment, and income. The population forecasts are the result of net forecasted changes in births, deaths and net migration. Employment is segregated into manufacturing and non-manufacturing, and is forecasted by major two-digit standard industrial classification (SIC) code. The personal income forecast is composed of forecasts of labor and proprietor's income, transfer payments, and dividends, interest, and rental income.

## Population

For the medium case, the two-county population in 1994 is estimated to be 483,500 with 82% residing in Spokane, 18% in Kootenai. By 2004, population expands to 552,700, an increase of 69,200, or 14.3%. Kootenai County growth is faster than Spokane, resulting in population shares of 80% in Spokane, 20% in Kootenai in 2004. During the second decade of the forecast, population grows by the year 2014 to 612,400, an increase of 59,700. This smaller increase in population in this ten-year period is consistent with an overall slowing at the national level. Over the 20-year period, the two-county population growth rate averages 1.2% per year, compounded.

For historical perspective, in 1984 the two-county population was 418,600. Between 1984 and 1994, population increased 64,900, or 15.5%, which averages 1.5% per year.

The high case scenario exhibits faster population growth. By 2004, population is 581,400, and by 2014, it is 672,200. The 20-year compound growth rate is 1.7%.

The low case scenario predictably has slower population growth. By 2004, population is only 524,700, and by 2014, only 563,200. The 20-year compound growth rate is only 0.8%.

Compared to the 1993 Integrated Resource Plan population forecast, the 1995 plan scenarios are higher for two specific reasons: The re-benchmarked population forecasts from the 1990 Census produced a higher starting point, and the DRI assumptions on immigration raised the rate of national population growth. These issues were discussed thoroughly at our Technical Advisory Committee meeting in February and June, 1994.

Migration is a volatile component of population change. In-migration is the demographic effect making up the shortfall associated with labor force shortages, while out-migration is usually the result of a labor force surplus. Of course, in- and out-migration occurs naturally in every year, thus our treatment of migration as net-migration as the operative variable.

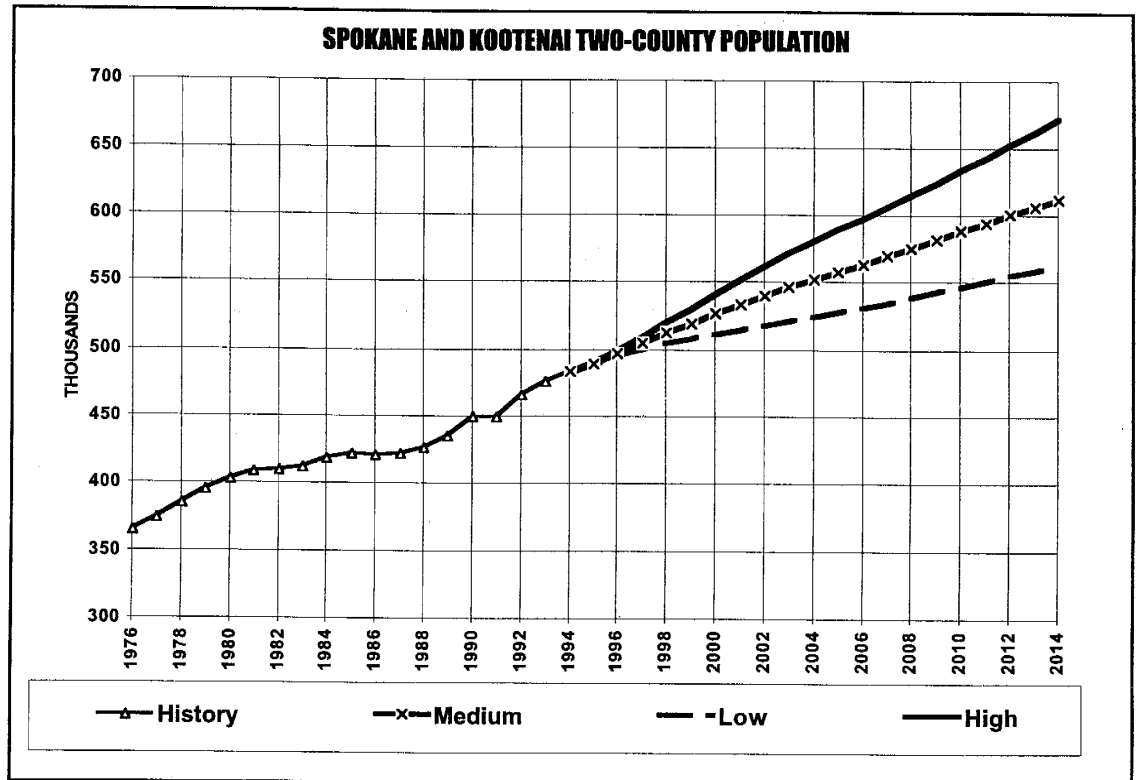
In the medium case, total net-migration between 1994 and 2014 is estimated to be 82,900 persons. In the high case, net-migration of 127,600 is 54% higher than the medium case. In the low case, net-migration of 43,800 is 47% lower than the medium case.

Figure 3G charts the historical period population from 1976, and illustrates the three scenario alternatives for the forecast period through 2014 for the two-county area.

Figure 3G

Spokane &  
Kootenai  
Two-County  
Population

Appendix G

Load  
Forecast  
(continued)

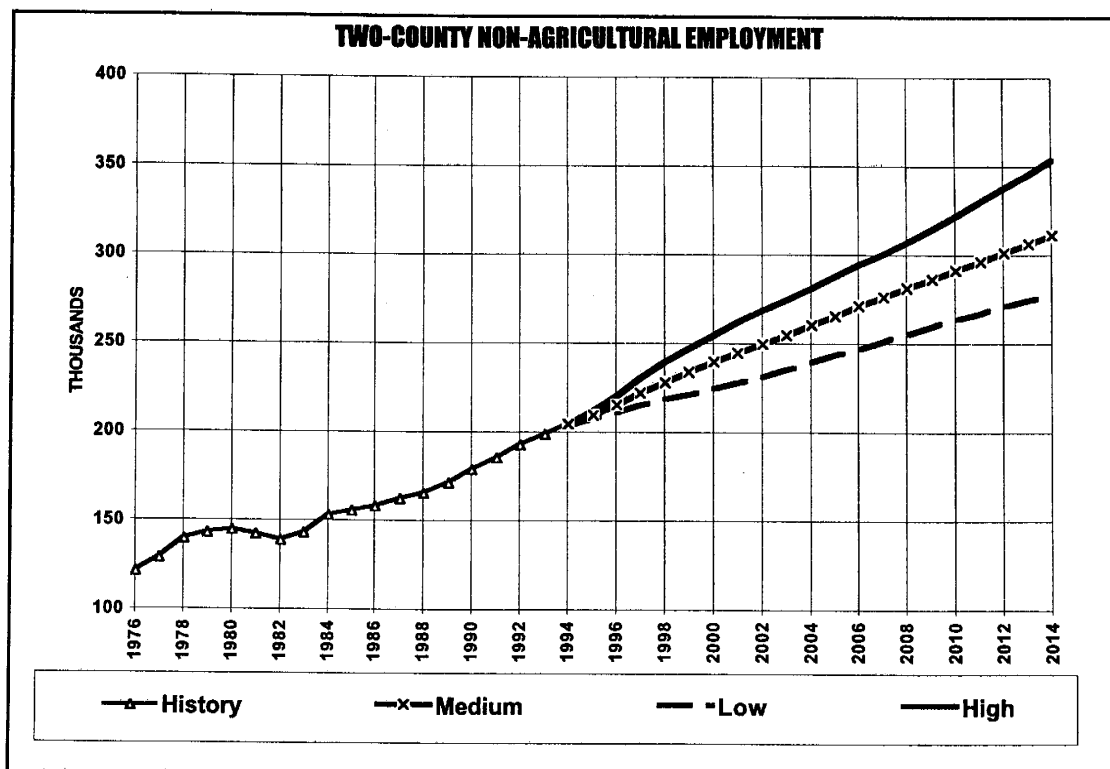
## Employment

Non-agricultural employment is the sum of the components of manufacturing and non-manufacturing employment. Agricultural employment is a small, stable element. Each of the available components of employment are forecast separately for Spokane County and for Kootenai County. The combined employment level in the two-county area in 1994 is estimated to be 204,800, with 84% in Spokane County and 16% in Kootenai County. By 2004, employment grows by 55,900 jobs, to 260,700, a cumulative increase of 27%. The employment share in Spokane declines to 81%, increases to 19% in Kootenai. By 2014, employment is forecast to be 311,600, an increase of another 50,900 jobs. Over the 20-year period, the two-county non-agricultural employment growth rate averages 2.1% per year, compounded.

In 1984, the two-county employment was 153,300. Between 1984 and 1994, employment increased 51,600, or by 2.9% per year, compounded. The high case scenario exhibits faster employment growth, averaging 2.8% over the 20-year period. The low case growth rate is 1.6%. Compared to the 1993 Integrated Resource Plan employment forecast, the 1995 plan scenarios are higher in the medium and high scenarios, but slightly lower in the low scenario.

Figure 4G charts the historical period employment from 1976 and illustrates the three scenario alternatives for the forecast period through 2014 for the two-county area.

**Figure 4G**  
**Two-County**  
**Non-**  
**Agricultural**  
**Employment**



### Income and Inflation

For the medium case, 1994 personal income in Spokane County is estimated at \$7.59 billion, and in Kootenai at \$1.54 billion in nominal (today's) dollars. Two-county income in 1994 is \$9.13 billion. By 2014, two-county income increases to \$28.11 billion, averaging 5.8%, compounded. Inflation averages 3.5%, as measured by the U.S. GDP Personal Consumption Deflator. Inflation adjusted personal income in the two-county area averages 2.2% compounded over the 20-year forecast horizon. Per capita nominal income increases from \$19,100 in 1994 to \$47,100 in 2014, averaging 4.6% per year. In Kootenai County, per capita income grows from \$17,800 to \$41,700 in twenty years, averaging 4.3%, compounded.

The high case scenario two-county personal income in 2014 is estimated at \$28.74 billion, which seems wrong, when compared to the medium case, since it averages only 5.9%. However, the high case inflation averages only 2.6%, so inflation adjusted personal income growth in the high case is actually 3.2%, much higher when compared to the 2.2% in the medium case.

A similar impact occurs in the low case. The low case scenario two-county personal income in 2014 is estimated at \$35.03 billion, averaging 7.0% per year. However, the low case scenario inflation averages 5.3%. Therefore, inflation adjusted personal income in the low case exhibits an average increase of 1.6% per year. The income scenario results point out the importance of using inflation adjusted forecasts for analytical purposes.

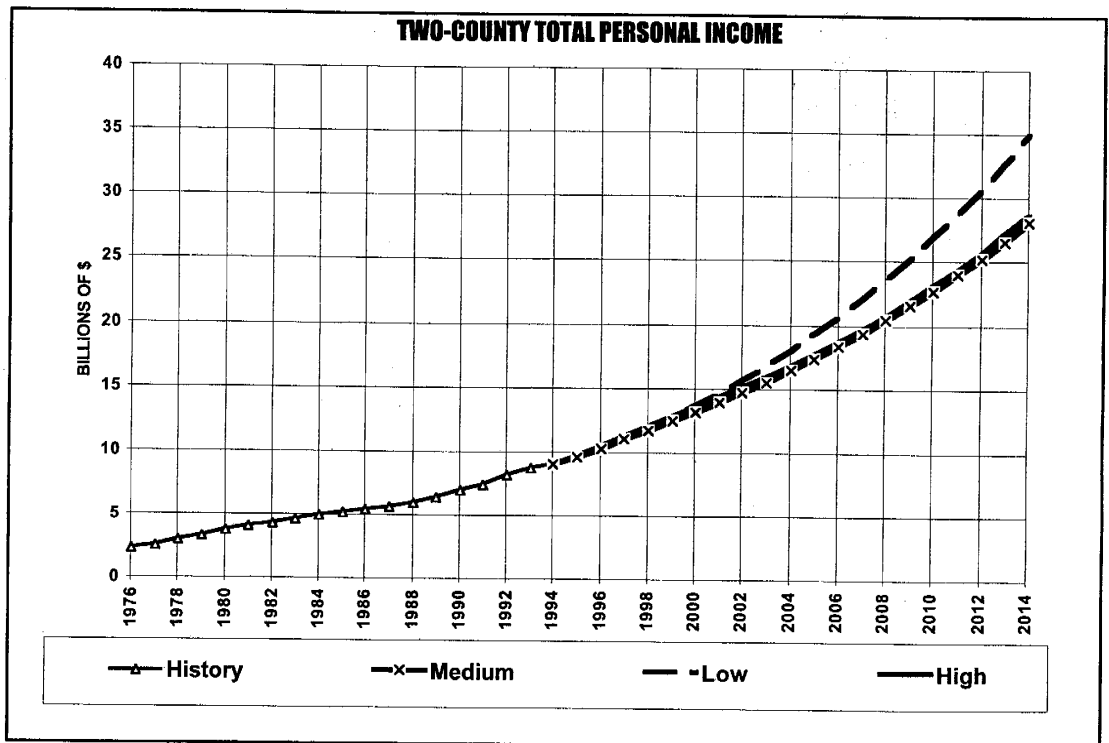
## Appendix G

Load  
Forecast  
(continued)

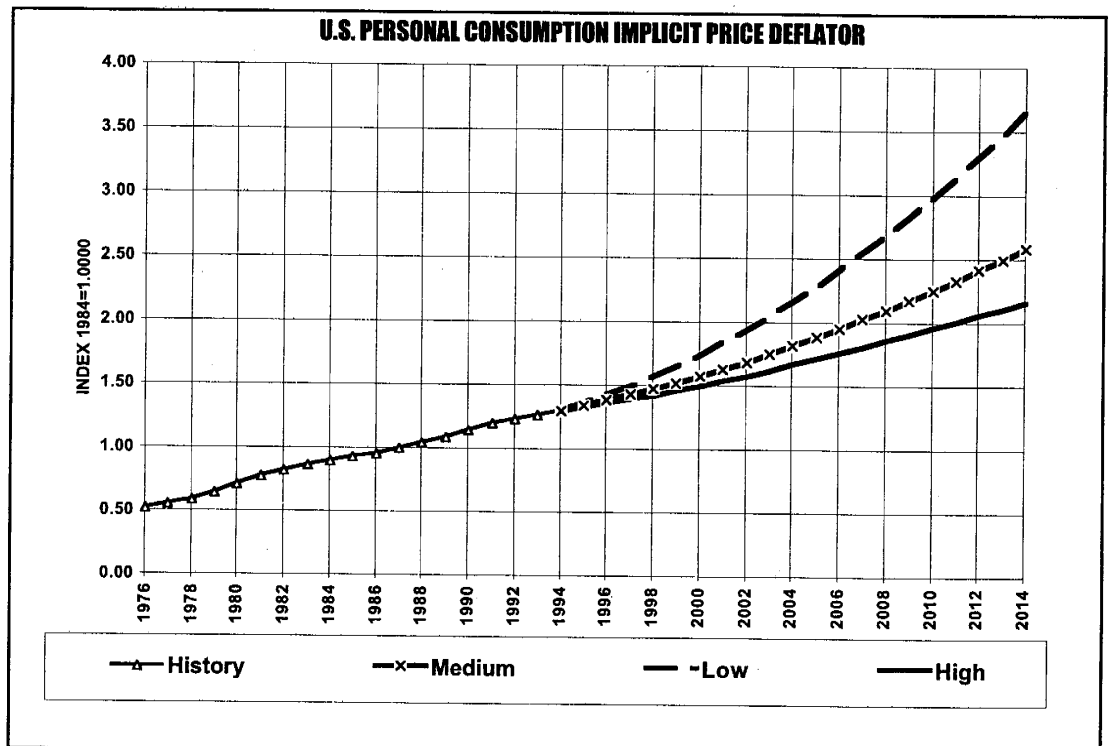
## Figure 5G

Two-County  
Personal  
Income

Figure 5G charts the historical period nominal personal income from 1976, and illustrates the three scenario alternatives for the forecast period through 2014 for the two-county area. Figure 6G similarly charts historical period inflation for Personal Consumption Expenditures (1984=100).



## Figure 6G

U.S. Personal  
Consumption  
Deflator

## **Large Load Customer Forecasts**

A survey is conducted of all large customers, within which there are both commercial and industrial class customers, typically on rate schedule 25. The company asks these customers to indicated planned facility increases or decreases over the next five years. The customer responses are reviewed by company account managers for accuracy and reasonability. The survey responses are extended to twenty years by the account managers, who also develop high and low scenarios for each customer. No new customers have been explicitly added to these projected sales forecasts. Individual customer survey responses and forecasts are held confidential, so as to avoid revealing harmful information from competitors.

Large load sales are estimated to be 1,729 million kWh in 1994. In the medium case, these sales increase to 1,823 million kWh in 2004, and further to 1,865 million kWh in 2014. In the low case scenario, sales decrease to 1,562 million kWh in 2004, rebounding slightly to 1,572 million kWh in 2014, while in the high case, sales are forecast to be 2,006 million kWh in 2004, growing further to 2,076 million kWh by 2014.

## **Prices**

In the medium case, residential and commercial retail electric rates are expected to grow at a 2.2% average rate, while natural gas retail rates grow at a 4.5% rate, before taking into account the effects of inflation. In the high case, due to lower inflation, electricity rates increase at 1.9% per year average, compounded, while natural gas rates increase about 2.5% per year. In the low case, due to higher inflation, the converse is true; electricity rates are forecast to increase at 2.6% per year average, compounded, while natural gas rates increase by about 6.0 percent per year.

## **Demand-Side Management Savings**

DSM activities are handled as having been implemented through 1994 and are treated as a discretionary resource beyond 1994.

## **Weather**

Weather as measured by heating degree days (65 degree base) is assumed to be at the National Weather Service 30-year normal (1961-1990) in the medium case, 5% higher



**Appendix G****Load  
Forecast  
(continued)**

in the high case, and 5% lower in the low case. The bounds chosen as plus-or-minus 5% represent a planning interval. The 95% confidence interval is between 94.54% and 105.46% of normal. In order to simplify this variability in the scenarios, the company rounded to the nearest whole percent. Over a long period of time, the company would expect to see most observations within these bounds. The point in weather scenario development is different, however. The attempt is to indicate whether or not a statistically significant shift occurs in terms of the deviation from the present 30-year average. This analysis produces forecasts as if the mean number of heating degree days has moved to either a higher (colder) or lower (warmer) plateau during the planning period. Variation around the scenario averages is expected to occur in the high and low case, just as it occurs in the medium case. The weather effect in the sales forecast is reflected in annual usage.

## Forecast Methodology

The company's sales forecasting methodology integrates econometric and end-use techniques. The econometric methodology produces monthly forecasts by state, by rate schedule, by customer class (e.g. residential/commercial/industrial). The end-use methodology produces annual forecasts by state for the residential and commercial classes.

In 1992, WWP executed a contract with energy consultant Jerry Jackson & Associates to purchase and implement the Commercial Energy Demand Modeling System (CEDMS). CEDMS produces forecasts for natural gas, electricity, and other fuels by ten building types by specific end-use, like water heat, space heat, lighting, etc. During 1992, a series of four workshops were held in Seattle and Spokane describing the model, data, efficiency supply curves, and forecast results. In 1993, an additional contract was executed with Jerry Jackson & Associates to purchase and implement the Residential Energy Demand Modeling System (REDMS). REDMS produces forecasts for natural gas, electricity, and other fuels by three building types (single family, multifamily, and mobile home) by specific end-uses of homeowners and renters.

CEDMS produces annual forecasts for 12 different building types plus a miscellaneous category for 12 different end uses for four fuels (electric, gas, oil, and other). The technology detail in CEDMS covers lighting, structure, HVAC, refrigeration, and water heat, including the interactions between these technologies. For example, more efficient lighting is accounted for in increase space heat requirements during winter periods, decreased air conditioning usage during summer periods.

REDMS produces annual forecasts for typical single-family, multifamily, and mobile

homes by ten specific end uses plus an other category for four fuels (electric, gas, oil, and other). The technology detail in REDMS covers structures, heating technologies, efficient alternatives for air conditioning, refrigerators, and freezers, various water heating technologies, electric and gas cooking appliances, and efficiency alternatives for lighting and dishwashers, including interaction effects.

Both CEDMS and REDMS utilize the aforementioned technology detail with a microsimulation process. It characterizes the sample population parameters by payback requirements, operating hours, household income, etc., selecting alternatives with minimum payback period costs. The process is repeated for the rest of the representative decision-makers, producing a forecast of survey-determined market segments with their unique decision-making criteria. The principal benefit of this method is that it avoids the pitfall of assuming homogeneity, a common mistake when exclusively using econometric models, or by using conditional demand models for end-use forecasting.

Two workshops were held in 1993, covering continuing activities with CEDMS and development activities with REDMS, culminating in a final workshop held in Olympia in February 1994. At this final workshop, results for both models were detailed by Dr. Jackson, with particular emphasis on the integration of new Federal and State building and appliance efficiency impacts, as well as estimates of fuel conversions from electric heat to natural gas heat for both space and water.

The residential and commercial forecasts for the 1995 Plan were produced with REDMS and CEDMS, respectively. For details on demand-side management issues, additional discussion is provided in the resources chapter. The full implementation of both CEDMS and REDMS has occurred, as planned in the two-year action plan.

Due to the fact that both REDMS and CEDMS produce forecasts at annual frequency, while there is a need by forecast users which requires monthly information, an econometric model primarily relating heating degree days to consumption by rate schedule was produced in parallel with the end-use models. The econometric model results were subsequently calibrated to sum to the totals of the end-use models on an annual frequency. Since the economic variables used in the end-use model and in the econometric model were the same, there were not large variations between the two forecast trajectories. In general, the econometric natural gas forecast was raised slightly for both residential and commercial sectors, while the residential electric forecast was raised slightly and the commercial electric forecast was lowered slightly. These same two-step approaches were used for all three scenarios, which are described next.

## Appendix G

Load  
Forecast  
(continued)

## Forecast Scenarios

Three alternative sales forecast scenarios have been developed. In summary, they are as follows:

**High:** Uses cold weather (105% of average), the high estimate for large customer volumes, and the DRI Optimistic forecast impact translated through our local economic models to the local economy. The probability of occurrence is subjectively estimated to be 20%. The company estimates a 5% chance of exceeding the high scenario.

**Medium:** Uses normal weather (100% of average), the expected estimated for large customer volumes, and the DRI Trend forecast impact on the local economy. This scenario is the most likely scenario. The probability of occurrence is subjectively estimated to be 50%.

**Low:** Uses warm weather (95% of average), the low estimate for large customer volumes, and the DRI Pessimistic forecast impact on the local economy. The probability of occurrence is subjectively estimated to be 20%. The company estimates a 5% chance of being below the low scenario.

## Results

Table 2G and Figures 7G through 10G compare average twenty year compounded growth rates in percent from 1993 to 2014 by customer class for each scenario, providing the supply planners with the baseline scenario forecast of demand for natural gas on the Washington Water Power company system.

Table 2G

Growth rates  
by Customer  
Class

Growth Rates by Customer Class (in percent) 1993 Weather Normalized to 2014 (excluding Sandpoint)			
	High	Medium	Low
Firm Residential	1.7	1.2	0.9
Firm Commercial	2.3	1.9	1.5
Industrial	0.6	-0.3	-0.8
Total WWP excluding Sandpoint	1.7	0.9	0.7
Sandpoint		1.5	

Figure 7G

Residential  
Sales  
Excluding  
Sandpoint

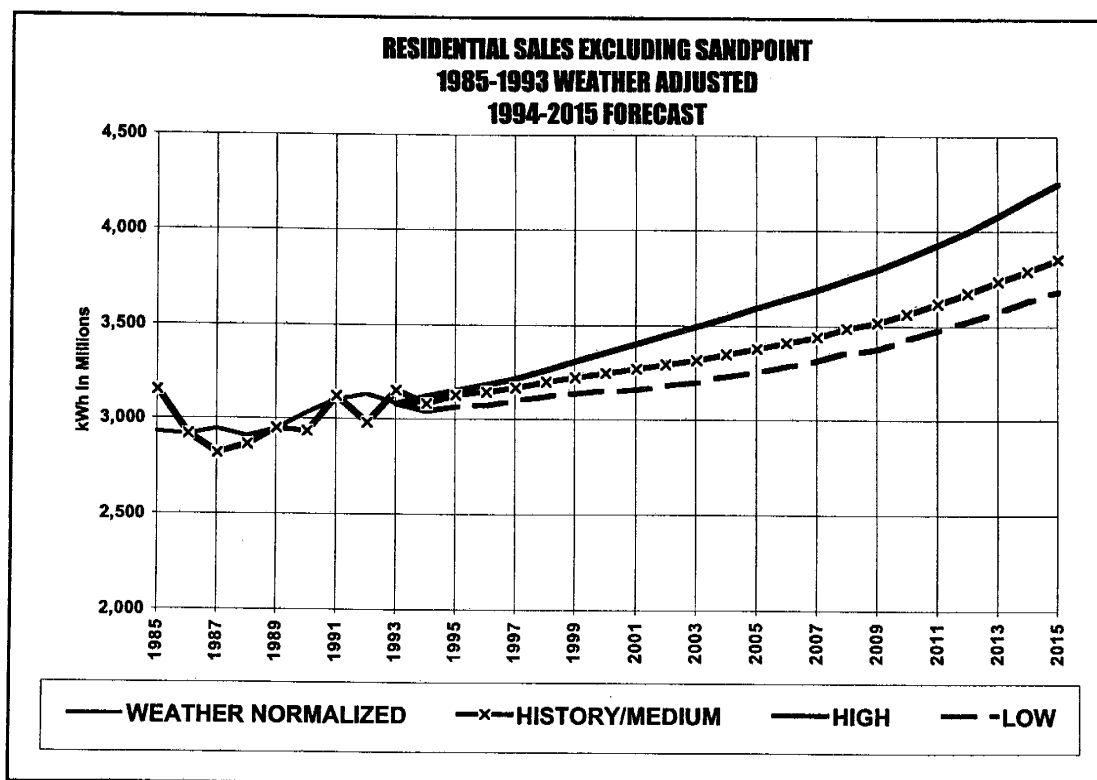


Figure 8G

Commercial  
Sales  
Excluding  
Sandpoint

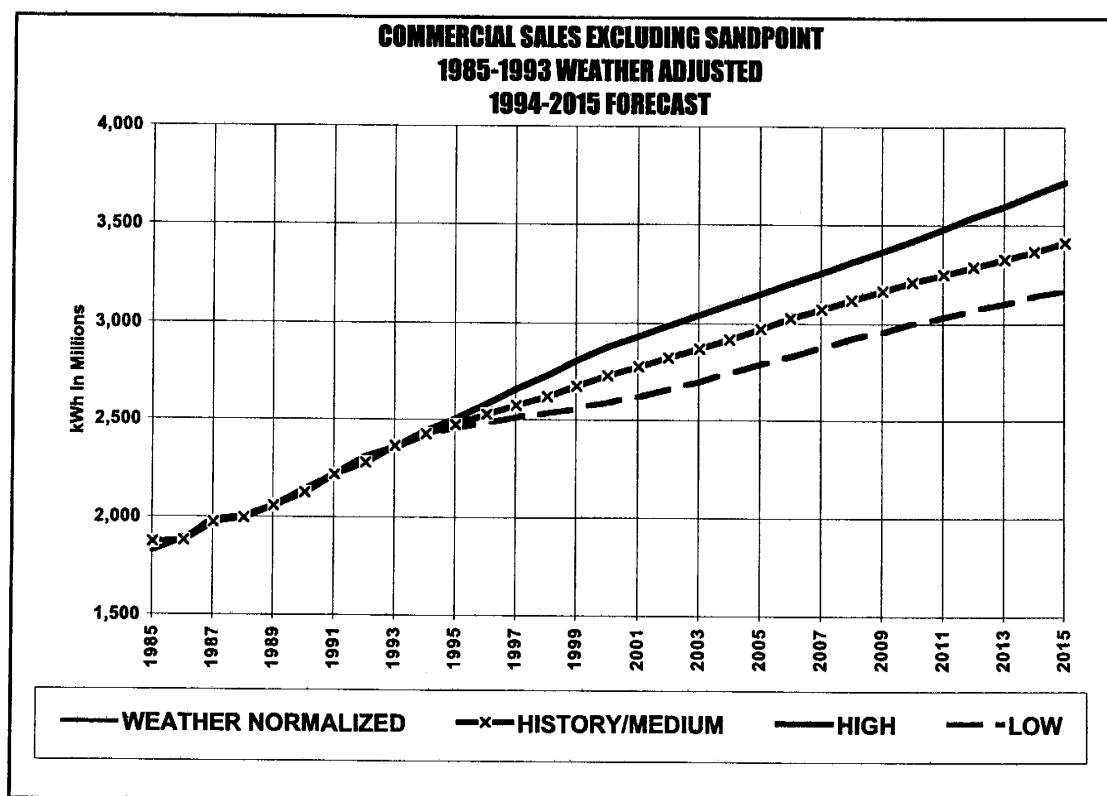


Figure 9G

Industrial Sales  
Excluding  
Sandpoint

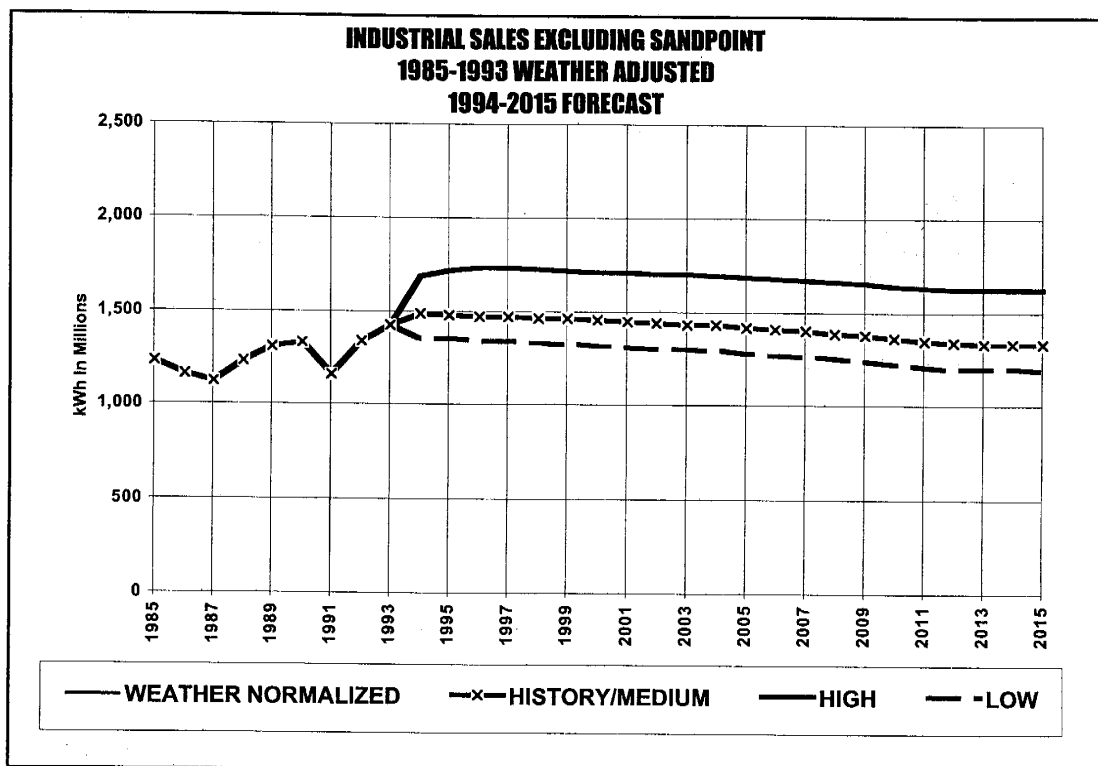
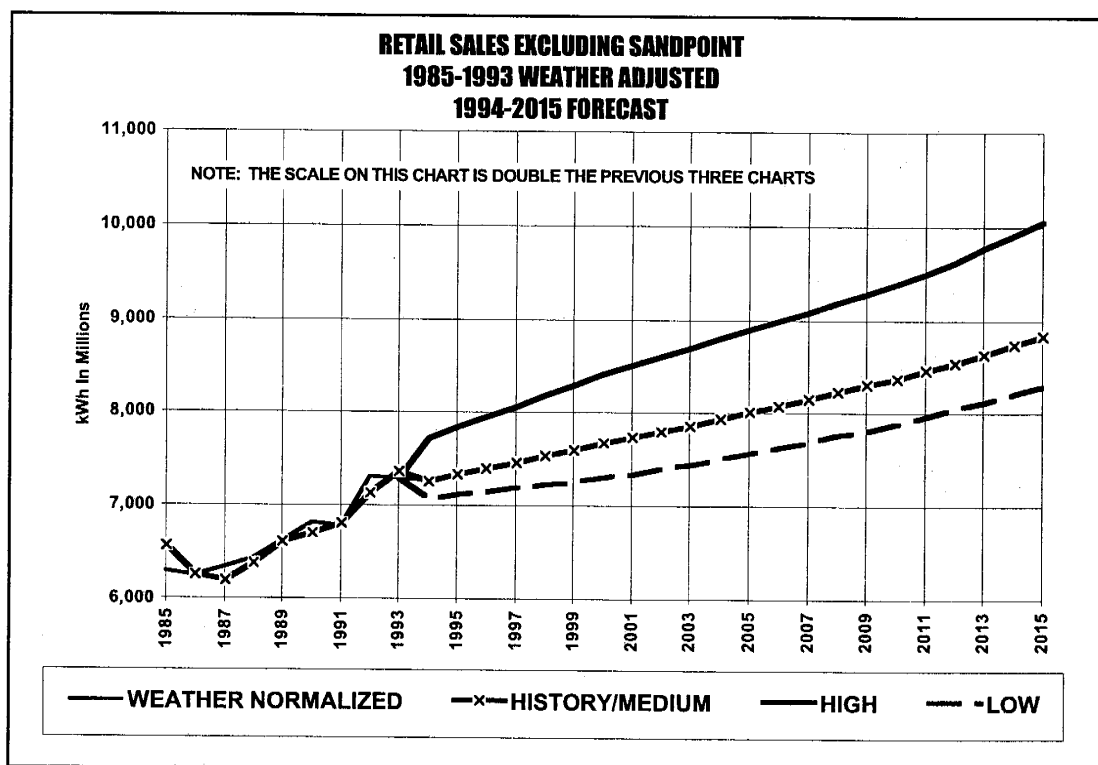


Figure 10G

Retail Sales  
Excluding  
Sandpoint

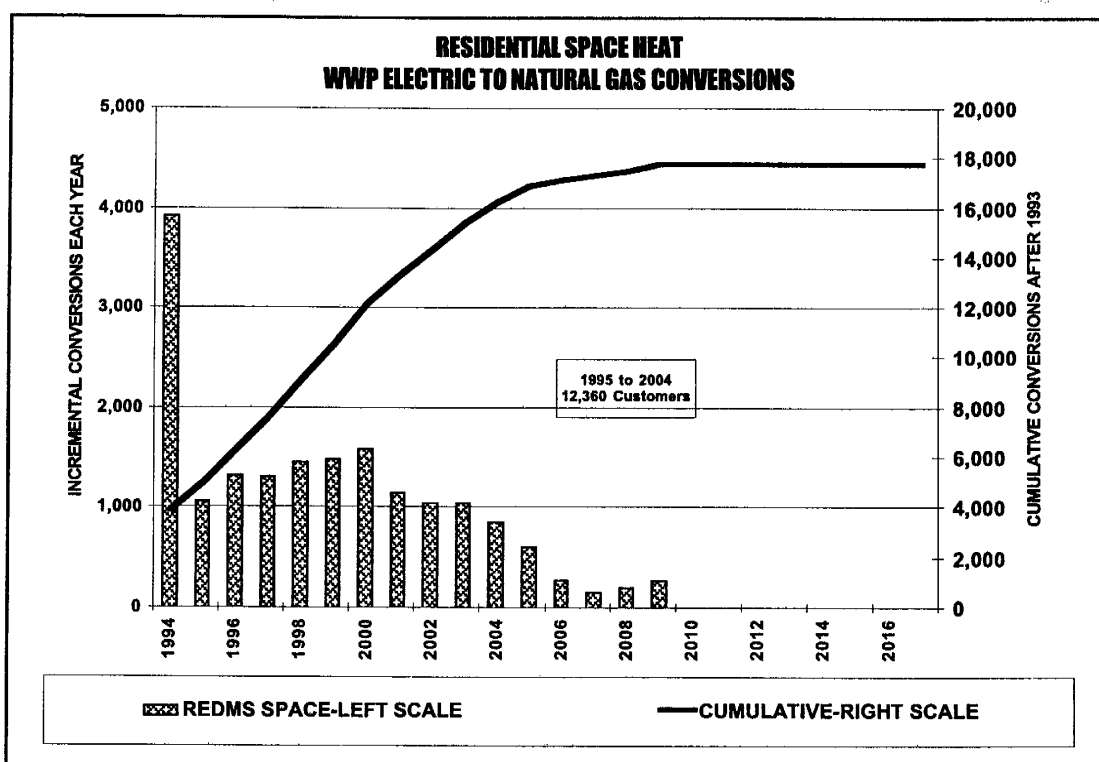


## Appendix G

Load  
Forecast  
(continued)

As mentioned in the Methodology section, REDMS produces forecasts of fuel choice for new and for existing household replacement of equipment. Figure 11G indicates the number of WWP residential space heat customers replacing their furnaces each year during the forecast period. As can be seen in the graph, the 1994 forecast includes the expected number of energy-exchanger participants. Post-1994, the number of converters is based on the vintage of equipment wearing out each year during the forecast period. By 2010, the number of converters will have reached equilibrium saturation. The electric consumption from these converters to natural gas has been accounted for in the residential sales forecast shown as Figure 7G. Water heat conversions are treated in a similar manner.

Figure 11G

Residential  
Space Heat  
Electric to  
Gas

## Elasticities

Both CEDMS and REDMS have price variables corresponding to schedules 1, 11, and 21 for both Washington and Idaho. Simulating the econometric model to estimate own-price elasticities produces a residential class elasticity range of -0.10 to -0.15, a small-commercial class elasticity of -0.20 to -0.30, and a medium-commercial class elasticity of -0.05 to -0.20. These levels are consistent with those reported in most elasticity studies. Cross price elasticities are modeled in CEDMS and REDMS. The number of new customers choosing either electric or natural gas space and water heat is calculated based on life-cycle present value lowest cost to consum-

ers through the previously mentioned microsimulation of customer payback distributions based on survey information from our customers. Presently, about 60 percent of all new customers are choosing natural gas, and that trend generally continues through the forecast period. The problem with elasticity estimates generally has been that it assumes homogeneity of customers, which we know is not the case. Small changes in prices as a test may not provide much useful information, since the alternative equipment costs tend to be lumpy, i.e., they are not smoothly distributed between or among customers' alternative choices. WWP intends to evaluate elasticity impacts more fully during the two-year action plan period.

Table 3G

**Resource  
Planning  
Model Inputs  
and  
Assumptions**

Year	Firm Energy			January Peak Demand		
	High	Medium	Low	High	Medium	Low
1994	886	871	834	1531	1506	1437
1995	934	906	865	1595	1550	1475
1996	948	913	868	1618	1559	1476
1997	962	920	873	1640	1569	1481
1998	975	929	876	1663	1583	1488
1999	990	937	879	1687	1598	1495
2000	1003	945	884	1712	1612	1502
2001	1015	952	887	1734	1624	1509
2002	1027	961	893	1754	1637	1518
2003	1040	968	898	1774	1651	1530
2004	1052	977	906	1800	1665	1542
2005	1065	985	911	1821	1680	1553
2006	1077	994	918	1840	1694	1564
2007	1089	1002	925	1863	1709	1576
2008	1103	1012	932	1886	1725	1590
2009	1115	1019	938	1907	1740	1600
2010	1128	1028	945	1930	1752	1611
2011	1143	1037	952	1954	1767	1623
2012	1159	1047	960	1978	1781	1633
2013	1177	1057	969	2007	1799	1647
Grow Rate: 1995-2013	1.29%	0.86%	0.63%	1.28%	0.83%	0.61%
Incremental Growth	14 aMW	8 aMW	6 aMW	23 MW	14 MW	10 MW
Cumulative Growth	243 aMW	151 aMW	104 aMW	412 MW	249 MW	172 MW

Notes:

1. Includes Sandpoint Area Load: 28 aMW and 54 MW peak in 1995.

## Appendix H

Resource  
Assessment

# Resource Assessment

Events that affect WWP's long-term resource picture are numerous and sometimes unexpected. A continual assessment of available resource alternatives helps WWP respond to constantly changing conditions. Potential new resources for WWP include:

- Resource proposals submitted under the Washington state competitive bidding process.
- Qualifying facilities under the Public Utilities Policies Act (PURPA) of 1978.
- Unsolicited proposals for new resource development or utility power purchase agreements.
- WWP programs to acquire demand-side resources.
- WWP efforts to upgrade existing facilities or construct new ones.
- Cooperative regional efforts to develop new conservation and supply-side resources or transmission opportunities.
- Existing or emerging technologies.

The bulk of this appendix discusses those demand-side and supply-side options WWP is currently pursuing and those that may be viable in the future. The following resource discussions include details about some or all of the following subject areas: opportunities, costs and critical resource management issues. The current status of any work WWP has conducted with regard to the resource is also included.

## Resource Criteria

While cost is the primary criteria used to screen potential alternatives, other factors help to select the best resources. The general description of WWP's resource criteria below helps identify these additional characteristics. WWP's portfolio of preferred options includes resources that:

- **Can be matched against customer needs.** Since different types of resources have different ratios of capital to operational costs, the nature of the resource requirement must be considered. For example, system energy and capacity needs may be met by different types of resources.
- **Add value to the existing system.** Options which are compatible with operation of the existing system are favored. A combustion turbine that could



be used to firm the company's nonfirm hydroelectric resources is an example of a resource that adds value to the existing system.

- **Represent a proven technology.** WWP monitors technology advances that improve the economy and availability of alternative energy supplies like wind and solar resources. In general, the company relies on other entities to support the research and development of these options.
- **Can be successfully licensed and permitted.** Any impacts due to resource development must fall within local, state and federal requirements. WWP's environmental and social responsibility extends from the stewardship of existing resources to the development of new ones.

## Renewables

The Random House Collegiate Dictionary lists one definition of the verb **renew** as: "to be restored to a former state; become new or as if new again." In our industry, the adjective **renewable** is used to describe those generating facilities that tap the inherent energy of a natural resource such as water or wind and return it to its "former state". While WWP has a long history of renewable stewardship in its hydro and biomass plants, the company continues to evaluate the feasibility of integrating more renewables into its resource mix.

### Hydro

#### Opportunities

Hydropower accounts for nearly one-half of all renewable energy produced in the U.S. Although new hydro projects are quite a challenge to license and build, there are numerous upgrades and improvements currently being completed at existing hydro sites throughout North America. Pumped storage facilities are very popular due to their ability to provide peak load generation from a high storage reservoir into which water has been pumped during low load periods. The amount of energy consumed to pump water to the higher reservoir is always more than the amount of energy generated.

WWP has had a long history in the use of hydro for generation. WWP's first plant, Monroe Street, was built in 1890. The company's total hydroelectric capability is about 955 MW. The company also purchases power from four mid-Columbia hydro facilities owned by PUDs and from six customer owned small hydro plants which

**Appendix H****Resource  
Assessment  
(continued)**

have a total of 19.4 MW.

Improvements to the efficiency of existing projects generally pose few environmental problems. At Monroe Street, WWP replaced five vintage above-ground turbines with a new single vertical Kaplan unit. The project essentially doubled the capacity of the plant from 6.0 MW nameplate to 13.0 MW. Other upgrades and improvements have now been completed at WWP's Nine Mile and Cabinet Gorge plants. These improvements added 17 MW to the system. WWP continues to analyze the feasibility of upgrades and/or efficiency improvements at its other hydroelectric sites.

**Costs**

The final cost of \$11, 027,944 was well under the \$12,140,000 budgeted for the Cabinet Gorge upgrade. Although final numbers are not yet available for Nine Mile, the project team feels they are still on target for the projected budget amount of \$20,865,000.

**Current Status****Cabinet Gorge Unit 1 Turbine Upgrade**

In July of 1993, the 40-year-old Unit 1 at Cabinet Gorge was placed out of service and removal of the old turbine runner began. This work was necessitated by cracks forming on the turbine blades which we were unable to effectively repair. The work included replacing the existing turbine runner with a new runner of modern design, which will increase the unit capacity by 6 MW.

In addition, a substantial upgrade of the electrical and control equipment was accomplished as part of this project. Unit 1 and all of its auxiliary equipment will have undergone a complete overhaul and is expected to provide another 40 years of reliable service. This installation work was completed in March of 1994. After testing and commissioning, the unit was placed in service on May 1, 1994.

**Nine Mile Redevelopment Project**

This work was initiated due to the economic benefits of the replacement of the 1908 vintage equipment. The condition of this equipment was demonstrated in June of 1993 when the shaft on Unit 4 failed, rupturing a bulkhead, and flooding the plant with about three inches of water. This caused the plant to be out of service for slightly more than two weeks. Fortunately, Unit 4 was one of the two units scheduled for replacement.

WWP intends to work with state fish and wildlife agencies to identify causes

WWP completed the process of replacing two of the four existing turbine-generator units at our Nine Mile HED. The new Units 3 and 4 went on-line for commercial operation June 30, 1994. WWP shut down the old Units 1 and 2 and began reconstruction of the intakes. Plant controls are also being replaced, but we are not replacing the units as we did on Units 3 and 4. When completed, the entire powerhouse will be controlled from a new computerized plant control system, similar to the system implemented at the new Monroe Street Powerhouse. This work has been completed and has increased plant capacity by 11 MW. The entire redevelopment project was completed on Dec. 15, 1994, which was the scheduled date of completion.

WWP went through an extensive public involvement process to include the installation of an inflatable rubber dam to replace the flashboards and raise the forebay level five feet. This work has been postponed due to public resistance associated with the proposed increase in the reservoir level.

## Issues

### Endangered Species Act (ESA)

Endangered Species Act (ESA) issues continue to dominate main stem Columbia River planning activities. The Northwest Power Planning Council in December 1994 amended the Anadromous Fish Sections of their Fish and Wildlife Program. A major reason for this amendment process is to account for matters resulting from National Marine Fisheries Service 1993 & 1994 Biological Opinions. The Northwest Power Planning Council and other governmental agencies are looking at a broad range of options from minor adjustments to current operation policy to radical changes to the operation and physical structure of main stem Columbia River and Snake River hydroelectric facilities. At this time, it is unknown what the results will be from these activities. WWP and other utilities that have shares in Mid-Columbia output will be impacted; however, at a much lesser extent than BPA and Mid-Columbia PUDs.

On June 10, 1994, the U.S. Fish and Wildlife Service announced their 12 month finding for bull trout which was petitioned on October 30, 1992. The service found that a listing of bull trout is warranted, but precluded due to other higher priority listing actions. This finding may have a direct impact on WWP operations since bull trout are native to areas on the Clark Fork where the Noxon Rapids and Cabinet Gorge hydroelectric projects are located.

## Appendix H

### Resource Assessment (continued)

of bull trout decline and develop programs to enhance these bull trout populations. The company is currently conducting an in-depth inventory of habitat and populations of bull trout in the Noxon and Cabinet reaches of the Clark Fork River. WWP is taking positive steps in trying to turn these weak stocks into a healthy and viable population.

### Relicensing

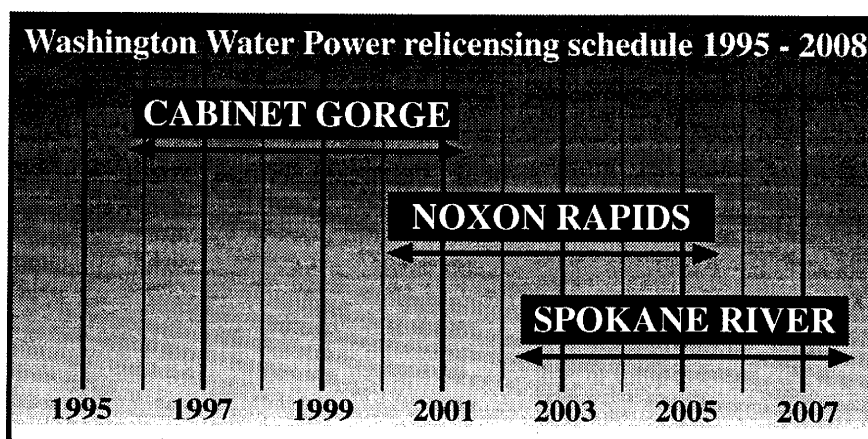
Over the next 10 to 15 years, WWP will be involved in relicensing its hydro-electric projects on the Spokane and Clark Fork rivers. WWP must conduct numerous environmental studies, solicit public consultation and participation, develop data reports, work with government agencies and submit filings with regulatory bodies such as FERC. To begin addressing the multi-faceted project of relicensing, WWP has formed an employee team comprised of a cross section of employees. The team is currently developing the company's relicensing strategy, timeline, implementation plans, budget and scope of external factors affecting the relicensing process.

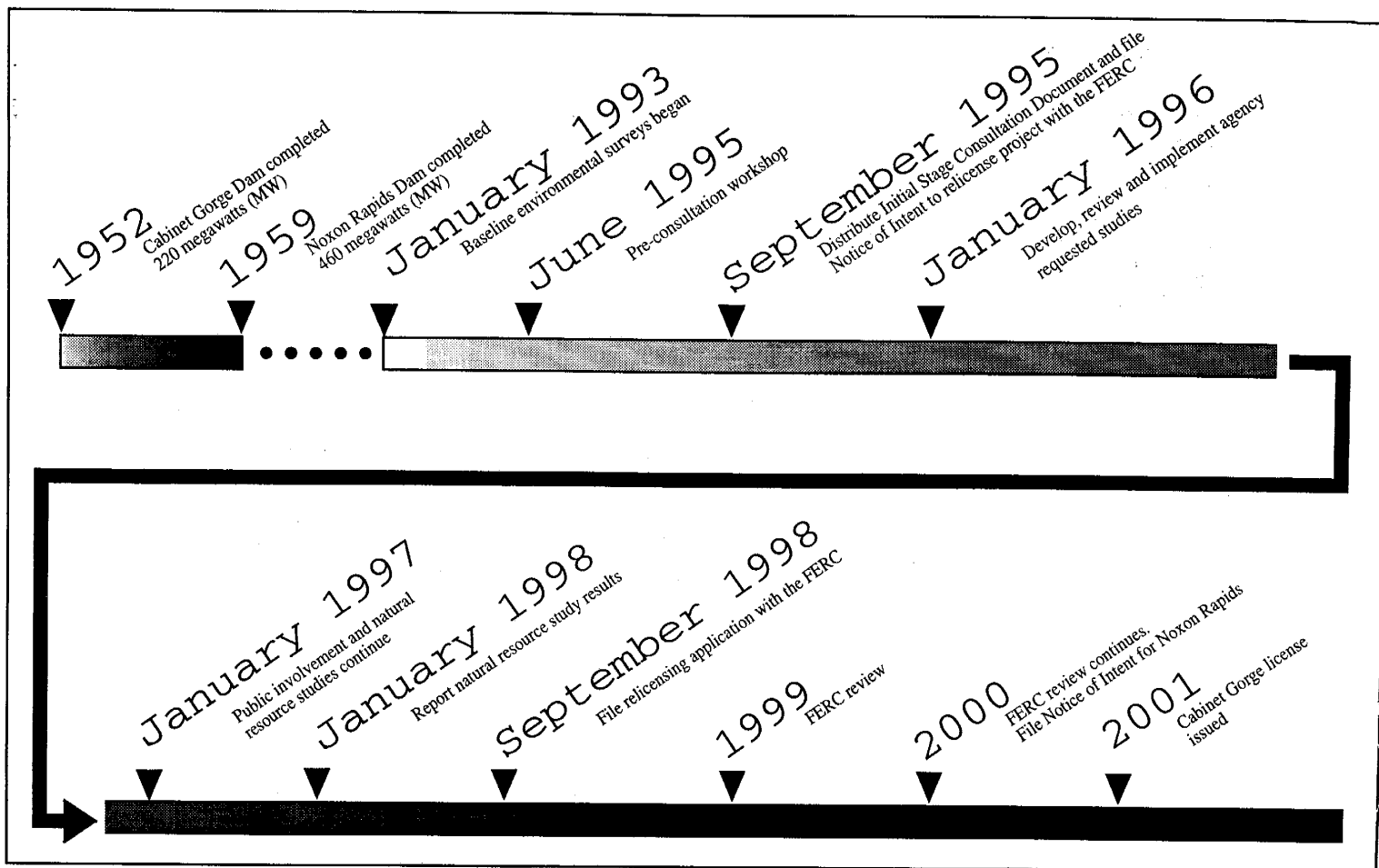
In the end, the relicensing team's mission is to renew WWP's FERC hydro licenses and to be the low-cost energy provider of choice by:

- maintaining the integrity and flexibility of our hydro resources;
- optimizing costs and benefits; and
- operating in a socially responsible manner.

**Figure 1H**

**Proposed  
Relicensing  
Schedule**





**Figure 2H Timetable for relicensing of Clark Fork River Projects--Cabinet Gorge and Noxon Rapids**

### Canadian Entitlements

Starting in 1998 and continuing to the year 2024, owners of main stem Columbia River hydro-electric projects will be required to return to Canada one-half of the storage benefits attributed to Canadian storage projects these projects receive. This payment back to Canada is an ongoing obligation of BPA and Mid-Columbia PUDs. WWP has this obligation as long as it participates in the Mid-Columbia projects. Estimates of the United States' obligation to Canada are 550 aMW of energy and 1400 MW of capacity. WWP's share of this obligation is 17 MW of capacity and 7 aMW of energy.

Currently, discussions are being held between Canada, BPA and Mid-Columbia owners on the methods which this entitlement will be returned to Canada. These discussions are scheduled to be finished by 1996.

### Mid-Columbia Contract Extensions

WWP currently has long-term purchase rights to power output from four mid-Columbia River hydroelectric plants owned by three Public Utility Districts. The company's purchase rights and contract termination dates are shown in Table X.

**Table 1H**

**Contract  
Termination  
Dates for WWP  
Mid-Columbia  
Contract  
Power  
Purchases**

Mid-Columbia Plant	Plant Owner	WWP Purchase Rights (MW/aMW)	Contract Termination Date
Priest Rapids	Grant Co. PUD	55 / 29	2005
Wanapum	Grant Co. PUD	75 / 36	2009
Rocky Reach	Chelan Co. PUD	37 / 17	2011
Wells	Douglas Co. PUD	33 / 14	2018

Each of the mid-Columbia contract purchases represents a very low-cost and flexible resource for WWP. Contracts with Grant County PUD are the first to expire. WWP is actively pursuing a Grant County offer to extend the sale of Priest Rapids and Wanapum output. Terms and conditions of a contract extension are currently being negotiated.

For planning purposes, WWP currently estimates that successful extension of the Grant County contracts will provide a resource with the following characteristics:

- Available long-term (estimated 20-30 years).
- Priced between current contract rates and new low-cost generating resource.
- Based on the fact that Grant County will "take back" power to serve their own loads, energy available to WWP in the model analysis is estimated to decline from the current 65 aMW to approximately 33 aMW in the year 2013.

(Note that these characteristics are for modeling purposes only and are not the result of real contract negotiations. Negotiations for the actual Grant County contract extension are expected to be completed sometime in 1995.)

**Appendix H****Resource  
Assessment  
(continued)****Other Hydroelectric Improvement Opportunities**

Prior to 1994, we had studied each of our hydroelectric projects for possible upgrade opportunities. This effort resulted in several opportunities for the company to evaluate. These studies range in level of detail and effort, but are sufficient for decision making purposes. We revised two previous studies to assess the most prudent course on two of our facilities. In early 1994, we again reviewed the Long Lake Second Powerhouse Study, to help guide the decision to replace the turbine shaft and runners in the four existing units, or to look at proceeding with the Second Powerhouse development. This effort was initiated due to the poor condition of the existing turbine shaft and runners. While the Second Powerhouse is still a viable option there is a lower cost to replace the existing equipment with modern designs.

Because of the condition of the equipment and the need to maintain Long Lake's availability and reliability, we have subsequently begun this replacement work which is expected to be completed over the next three to four years. The net result of this effort will be an increase in plant efficiency, but no increase in capacity due to mechanical limitations of the existing equipment.

A second study which was revisited was the replacement of a second unit at our Cabinet Gorge facility. This work contemplates an effort similar to the Unit 1 replacement project described above. The results of this effort have identified an opportunity to replace the existing propeller type turbine runner with a new mixed flow type runner. This would result in higher efficiency and capacity for the plant, but would not increase hydraulic capacity through the project. A license amendment application to FERC is being prepared. If accepted, this project will provide an opportunity to schedule this resource sometime during the 1997-1999 time frame. This project will continue to be evaluated to determine the optimum schedule.

As discussed in other sections of this document, most of our hydro facilities are coming due for relicensing by FERC. Therefore, upgrade opportunities for our hydro system may be limited during the relicensing process. All current planning activities are being closely coordinated with the relicensing effort.

Table 2H

Fuel Cost  
Escalators

Fuel Type	1994 Price Range	Escalation Range	Baseline 1994 Price	Baseline Escalation
Coal	0.50 - 1.50 \$/MMBTU	3.60%-7.50% Nominal 0.00%-3.76% Real	1.06 \$/MMBTU	3.90 % Nominal 0.39 % Real
Natural Gas (Firm)	2.00 - 2.65 \$/MMBTU	3.60%-7.50% Nominal 0.00%-3.76% Real	2.32 \$/MMBTU	5.00 % Nominal 1.35 % Real
Natural Gas (Spot)	1.70 - 2.40 \$/MMBTU	3.60%-7.50% Nominal 0.00%-3.76% Real	2.00 \$/MMBTU	5.00 % Nominal 1.35 % Real

Table 3H

WWP Supply-  
Side Portfolio  
Summary

Resource Type	Geothermal	Wind Technologies	Wind
Capacity (MW)	50	50 - 300	100
Capacity Factor (%)	90	25 - 35	30
Annual Energy Production (aMW)	45	12 - 100	30
Construction Lead Time (Months)	36	24	24
Economic Life (Years)	30	40	30
Primary Fuel Type	Geothermal Steam	Wind	Wind
Heat Rate (BTU/kWh)	9,280	N/A	N/A
Capital Cost (\$/KW)	2,732	900 - 1300	1018
Fixed O&M Expense (\$/kW-Year)	122.92	8 - 20	7.94
Variable O&M Expense (mills/kWh)	5.91	6 - 15	9.07
Fuel Cost (\$/MMBTU)	0	0	0
Nominal Fuel Escalation (%/Year)	N/A	N/A	N/A
Mature Technology?	Yes	Yes	Yes
Dispatchability?	No	No	No
30-Year Nominal Levelized Cost (mills/kWh)	79.43	58 - 78	67.53

Table 3H

WWP Supply-  
Side Portfolio  
Summary

(continued)

Resource Type	Cabinet Gorge Unit 2 Upgrade	Cabinet Gorge Unit 3 Upgrade	Cabinet Gorge Unit 4 Upgrade	Noxon Rapids Unit 1 Upgrade	Noxon Rapids Unit 2 Upgrade
Capacity (MW)	6.2	8.9	8.9	10	10
Capacity Factor (%)	29	14	14	15	19
Annual Energy Production (aMW)	1.81	1.26	1.26	1.5	1.9
Construction Lead Time (Months)	24	24	24	24	24
Economic Life (Years)	35	35	35	35	35
Primary Fuel Type	Hydro	Hydro	Hydro	Hydro	Hydro
Heat Rate (BTU/kWh)	N/A	N/A	N/A	N/A	N/A
Capital Cost (\$/KW)	597	351	351	439	439
Fixed O&M Expense (\$/kW-Year)	0	0	0	0	0
Variable O&M Expense (mills/kWh)	0	0	0	0	0
Fuel Cost (\$/MMBTU)	0	0	0	0	0
Nominal Fuel Escalation (%/Year)	N/A	N/A	N/A	N/A	N/A
Mature Technology?	Yes	Yes	Yes	Yes	Yes
Dispatchability?	Yes	Yes	Yes	Yes	Yes
30-Year Nominal Levelized Cost (mills/kWh)	29.27	35.23	35.23	43.53	34.18



## Wind

### Opportunities

Wind turbines consist of two or three large blades which catch the wind and turn a generator to produce electricity. The turbines are mounted on towers to maximize the capture of wind energy. There are two types of wind turbine designs: the vertical-axis wind turbine, which resembles an upright eggbeater, and the horizontal-axis wind turbine, which resembles a windmill. Although wind turbines can be stand alone systems, there are operating advantages to siting wind turbines in a large array to form a windplant.

### Costs

Improved turbine designs and operation have contributed to a reduction in wind energy generation costs from 25 cents /kWh in 1980 to a range of 5 -7 cents /kWh for today's commercially built machines in the most favorable locations. Continued research and commercial demonstration of new class of wind turbines with advanced air foils and electronics, and some incorporating variable speed operation, are expected to further reduce the cost of wind energy to between 4 -5 cents /kWh.

### Issues

Wind power is appealing due to its low variable costs, zero air emissions, modularity, no fuel price escalation, and ease of siting. However, wind power lacks load shaping capability, therefore additional resources may be necessary as backup facilities to provide firm peaking capability. All energy from a wind project will have about the same value in a given hour because the energy will likely be used to displace a thermal resource. Some concerns with wind generation are transmission access to remote locations, aesthetics, noise, and bird mortality.

### Current Status

WWP will continue to monitor these wind development activities. Parts of WWP's service area have a moderate wind potential. The new generation of wind turbines could provide an economical source of power generation. The amount of participation in wind generation by WWP will depend on its resource needs and the cost of alternative resources. When environmental attributes are considered, wind projects may become the least-cost option for utilities seeking to expand capacity.

## Biomass

### Opportunities

Biomass resources use renewable organic matter, such as agricultural/wood waste, municipal waste, and landfill gas, to generate electricity. Biomass, in all its energy uses, currently supplies more than three percent of total U.S. energy needs. Wood is the leading biomass energy resource used for power generation, primarily because of its use as a boiler fuel in the lumber, pulp, and paper industries.

### Appendix H

#### Resource Assessment (continued)

The company has a long history of working with the forest products industry and purchasing electrical power from wood waste facilities. WWP has three contracts for the purchase of electrical energy totaling 69,250 kW (Potlatch, Woodpower and Vaagen) and has three contracts totalling 16,100 kW whose facilities are under development or in the planning stage. WWP will continue to pursue generation development at existing sawmills as they become available. In 1983 the company began operating the Kettle Falls wood-fired generating facility (47,000 kW). WWP maintains long term contract agreements for wood waste delivery with about 15 large lumber companies within a 100 mile radius of the plant, but also signs short term contracts to take advantage of competitive markets. This facility eliminated, in the northern part of WWP's service territory, a source of pollution from the burning of wood waste in wigwam style burners and the storage of wood waste in ground piles.

### Costs

Costs for new biomass facilities are very site specific. Costs for WWP's Kettle Falls plant, completed in 1983, are provided here for reference. The total capital cost of the plant, exclusive of financing, was about \$85.9 million or slightly more than \$2,000/kW based on the expected capability of 42.5 MW. The plant's availability factor has averaged about 95 percent. During 1989 and 1990, the station operated 247 consecutive days without an outage. The plant has also consistently operated at a power output of 47 MW.

### Issues

There are some advantages environmentally in using biomass fuels. Biomass power plants burn cleaner and reduce landfill problems when compared to other alternatives of waste disposal. For those biomass fuels that can be regrown, the net emission of carbon dioxide is zero. To secure future supplies of biomass fuel, a fast growing hybrid tree species has been developed and are being grown at nine tons per acre, compared to only one ton per acre naturally. If a dedicated feedstock (crop) is developed and conversion technology is improved, biomass could make significant inroads into electrical generation.

### Current Status

Spokane County has a large municipal waste electric generating plant, which sells the electrical output to Puget Sound Power & Light. WWP provides the transmission for this transaction. There is also some work being done, in the planning stages, to develop methane gas generating facilities from old landfill sites. WWP is involved in these preliminary efforts.

## Solar

### Issues

Solar energy is now competitive in several niche applications, and in some demand-side management programs. Solar is also a renewable resource and such does not have the perceived societal and environmental costs associated with fossil fuel generation. Solar energy may turn out to be unsuitable for the Northwest in any significant quantities because it is too cloudy where most of the population lives. Solar has more benefits for summer peaking systems than for winter peaking systems like WWP. The company does not view solar energy as an alternative to other electrical resource options. WWP has installed some solar facilities for individual customer needs and as the cost of solar energy continues to decrease, there will be other solar developments for specific applications in the company's service territory.

### Current Status

Solar thermal systems collect the thermal energy in solar radiation for direct use in low to high temperature thermal applications. For electricity generation, several types of collection systems (parabolic trough, central receiver, and parabolic dish) may be used to concentrate and convert the solar resource. Higher temperatures result in greater thermodynamic energy conversion efficiencies. Solar thermal technology offers significant potential for meeting utility peaking or intermediate electric power generation needs in sunny climates.

### Costs

Solar Photovoltaics (PV) energy technology employs a solid-state device to directly convert sunlight into electricity. PV cells represent one of the most benign forms of electricity generation available, because they can be used to make stand-alone systems with no fuel or cooling requirements and no operating emissions or noise. However, because much of the current PV cell technology uses crystalline semiconductor materials, production cost have been high. Even so, technology improvements have reduced PV generation costs from \$1.50 /kWh in 1980 to a range of \$0.20 -0.40 /kWh today. Projections are that by the late 1990s the cost will be between 8 -15 cents /kWh and for the long term less than six cents /kWh.

## Geothermal

### Issues

Geothermal resources can be used for power generation or for heating and exist as either steam or as hot water. Steam can be routed directly to a turbine to generate power. For power generation from hot water, there are two primary conversion technologies: flash plants (for resource temperatures >175 degrees C), which rely on flashing the hot water to steam, and binary plants (for resource temperatures of 100-175 degrees C), which use the heat of the hot water to boil a "working fluid," usually

**Appendix H****Resource  
Assessment  
(continued)**

an organic compound.

There are some concerns with geothermal electrical energy production. Geothermal water is sometimes heavily laden with salts and dissolved minerals that need disposal. Some geothermal fields have corrosive brines and gases present that can ruin equipment. Another problem is the decline of underground pressure, resulting in reduced production.

**Opportunities****Current Status**

Although there are estimates of significant amounts of geothermal resources in the Pacific Northwest, there are no potential geothermal sites in WWP's service territory. WWP did have a geothermal facility bid into its 1991 and 1994 RFPs, which were located in Nevada and Canada respectively. The bid facilities were rejected because of the high total price, which included wheeling costs from that location. WWP will continue to monitor and evaluate this renewable resource. There could be an opportunity to develop geothermal heat pump projects throughout the company's service territory that would reduce need for other types of generating facilities.

## Thermal

Those facilities which use fossil fuels to generate electricity are known as "thermal". WWP has ownership in two types of thermal electric generation: coal and natural gas.

### Coal

**Opportunities**

All evaluations regarding the economics of replacing the high-pressure and low pressure rotors on both units 3 and 4 at Colstrip presented evidence that these capital projects returned against equity invested very favorably. The primary issue surrounded inherent design problems with the existing rotors that had a failure rate that was inconsistent with prudent operation of the Colstrip units. The history of long blade failure in the low pressure rotors, the cracking problems that we have already experienced and other problems have resulted in several extended outages with the cost exceeding a million dollars in each event. The new ruggedized rotors have a ten year warranty from Westinghouse and have proven their reliability in the industry already. The need for bi-annual inspection of the new rotors has been eliminated and moved to a ten year cycle. The additional generation available annually is significant contributor to the economic evaluation.

The high pressure turbine replacement program was made possible by the availability of a pair of units that could be remanufactured to fit at Colstrip. Westinghouse put a very favorable offer together which was accepted by the owners. The first high pressure turbine was installed in Unit 4 during the last overhaul and has been operating very well. The schedule is for the new high pressure turbine to be installed in Unit 3 in 1997. The plant owners have already purchased this equipment.

## Current Status

Installation of the low pressure rotors (two per unit) will start with Unit 3 during the annual outage in the spring of 1995. The remaining two low pressure rotors will be installed in Unit 4 in 1996. We purchased the first rotors last year and have recently ordered the last two.

When all of the installations are complete we will realize significant reductions in maintenance costs during annual overhaul. The outages may be rescheduled to bi-annual which will allow for additional generation. The improved steam path through the new equipment and more efficient design will allow either additional generation capacity or improved fuel efficiency depending on the choice of operation and transmission availability.

## Issues

Phase I of the Clean Air Act Amendment limits SO<sub>2</sub> emissions at the Centralia plant take affect in 1995. Phase I requirements can be met by blending lower sulfur with the Centralia mine coal. Phase II takes affect in the year 2000 and is much more stringent. A Reasonable Available Control Technology (RACT) review must be completed to determine the technical and economically lowest limit of SO<sub>2</sub> emissions.

In 1994, a strategy to meet Phase II SO<sub>2</sub> emission controls was developed by PacifiCorp and reviewed by the non-operating owners. This strategy includes eight

**Table 4H**

**WWP Supply-Side Portfolio Summary**  
**(Coal)**

Resource Type	Coal Technologies	Pressurized Fluidized Bed Coal (PFB)	Pulverized Coal (PC)	Integrated Coal Gasification Combined Cycle (IGCC)
Capacity (MW)	150 - 525	197	500	419
Capacity Factor (%)	77 - 92	82	77	80
Annual Energy Production (aMW)	123 - 450	162	385	335
Construction Lead Time (Months)	30 - 63	63	60	39
Economic Life (Years)	40	40	40	40
Primary Fuel Type	Coal	Coal	Coal	Coal
Heat Rate (BTU/kWh)	8,000 - 11,000	9,885	11,005	9,455
Capital Cost (\$/kW)	1,400 - 2,500	2,161	2,054	2,395
Fixed O&M Expense (\$/kW-Year)	17 - 74	45.47	40.56	73.73
Variable O&M Expense (mills/kWh)	0.50 - 5.78	5.78	3.4	0.91
Fuel Cost (\$/MMBTU)	0.50 - 1.50	1.06	1.06	1.06
Nominal Fuel Escalation (%/Year)	3.60 - 5.00	3.90	3.90	3.90
Mature Technology?	No	No	Yes	No
Dispatchability?	Yes	Yes	Yes	Yes
30-Year Nominal Levelized Cost (mills/kWh)	51 - 77	72.23	76.97	75.91

**Appendix H****Resource  
Assessment  
(continued)**

different options for controlling emissions of SO<sub>2</sub>. These options include various fuel blending scenarios and/or post combustion flue gas treatment. The eight options have a wide range of compliance costs and effectiveness in controlling emissions.

These options were described in the RACT review document and submitted to the Southwest Air Pollution Control Authority (SWAPCA) in September 1994. At the time of this publication, SWAPCA has issued the RACT document and the owners are currently reviewing it.

**Natural Gas****Current Status**

WWP's 176-MW simple-cycle combustion turbine project at Rathdrum began commercial operation on Jan. 1, 1995. The plant consists of two General Electric gas turbine units that each produce about 88 megawatts of power using natural gas as fuel. Each unit can operate independent of the other.

**Issues**

Both primary and backup fuel arrangements have been successfully tested by WWP. The units have also successfully met the specified levels for electrical output, heat rate and air emissions. Sound emissions from the project during certain wind and weather conditions have created sound levels which are objectionable to surrounding residents. The company is collecting more data on sound emissions and has established a plan to work with the community as well as several sound experts in order to mitigate this concern.

**Project Purpose**

As a standby resource, the turbine power plant will operate primarily when WWP's base generating system cannot keep pace with peak demands, such as during periods of extremely cold weather or when streamflows are low. The facility will also back up existing hydroelectric and thermal generating plants during temporary outages.

### **Project Benefits**

**Low-Cost Resource** The Rathdrum CT will provide a clean and low cost source of electricity to meet peak-power needs of WWP's retail and wholesale customers.

**Maintain Rate Stability** Revenue from a long-term capacity exchange contract with Portland General Electric has financed construction of the plant. This contract will help keep rates low and stable for all WWP residential customers. Over the 22-year contract period, PGE is expected to provide a total benefit to WWP customers of about \$130 million.

**Tax Benefits** The plant will pay an estimated \$900,000 to \$1.1 million in property taxes each year. These tax dollars will benefit many services in Kootenai County including ambulance, highways, school districts, libraries, North Idaho College and the hospital.

**Infrastructure Improvements** The project added significant infrastructure improvements at no cost to the city of Rathdrum. It added about 2,000 gallons per minute of needed capacity to Rathdrum's municipal water system from an existing well located on the site. In addition, as part of the project, WWP paved at least 2.5 miles of gravel roads near the project site.

### **Permitting Process**

The Rathdrum CT project required a variety of licenses, permits and approvals. These included a Permit to Construct from the Idaho Division of Environmental Quality; a Critical Materials Compliance Certificate from the Panhandle Health District; a building permit from the City of Rathdrum; and a project review and issuance of a Certificate of Convenience and Necessity from the Idaho Public Utilities Commission.

On August 6, 1993, WWP received an Air Quality permit from the Idaho Department of Environmental Quality. One of the key operating parameters of that permit is that the generating facility may discharge only 240 tons of carbon monoxide (CO) per year. This means that the total operating hours from both units may total a maximum of 9056 hours each year. Calculating the annual generation potential from monthly numbers based on ambient temperatures results in 724,480 MWh or about 82 aMW, which is the number of average megawatts that the Rathdrum CTs may generate per year.

## Appendix H

Resource  
Assessment  
(continued)

WWP was committed to using the best available technology for the CTs at Rathdrum. The dry, low NOx units were purchased from General Electric because they provide the lowest emissions available in the generation marketplace. The addition of this technology has been estimated to reduce Rathdrum's capability by 24 MW--correspondingly increasing the cost of the facility in terms of dollars per kilowatt of output. The decision to incur this increased cost was part of WWP's commitment to provide the most advanced form of air quality protection for the surrounding environment.

Table 5H

WWP Supply-  
Side Portfolio  
Summary  
(Natural Gas)

Resource Type	Combined Cycle Combustion Turbine Technologies	Combined Cycle Combustion Turbine (CCCT)	Simple Cycle Combustion Turbine Technologies	Rathdrum Simple Cycle Combustion Turbine (SCCT)
Capacity (MW)	120 - 465	240	150 - 360	176
Capacity Factor (%)	80 - 90	88	25 - 85	51
Annual Energy Production (aMW)	96 - 420	211	40 - 306	82
Construction Lead Time (Months)	24 - 36	24	18 - 30	18
Economic Life (Years)	30	30	30	30
Primary Fuel Type	Natural Gas	Natural Gas	Natural Gas	Natural Gas
Heat Rate (BTU/kWh)	6,475 - 8,398	7,400	10,600 - 11,500	11,300
Capital Cost (\$/kW)	612 - 825	754	375 - 710	375
Fixed O&M Expense (\$/kW-Year)	5.87 - 10.00	10.00	2.00 - 5.00	4.15
Variable O&M Expense (mills/kWh)	0.43 - 2.00	2.00	0.10 - 2.50	2.00
Fuel Cost (\$/MMBTU)	2.00 - 2.64	2.32	1.70 - 2.40	2.05
Nominal Fuel Escalation (%/Year)	3.60 - 7.50	5.00	3.60 - 7.50	5.00
Mature Technology?	Yes	Yes	Yes	Yes
Dispatchability?	Yes	Yes	Yes	Yes
30-Year Nominal Levelized Cost (mills/kWh)	40 - 60	47.29	50 - 85	52.93



## **Demand-Side Management**

WWP has been involved with demand-side management since 1978. Following is a description of past WWP programs and associated energy savings through 1994.

### **Water Heater Insulation Kits**

The company provided installation of an R-11 vinyl covered fiberglass blanket free of charge on all customer-owned electric water heaters up to 82 gallons. Company employees canvassed customers' homes and solicited customers to call for appointments through door hangers, post cards and newspaper ads. Approximately 140,000 water heaters were wrapped over the period 1981 through 1983 resulting in estimated savings of 6.9 aMW. This program was operated under a conservation agreement with BPA.

### **Shower Flow Restrictor Packages**

The company distributed kits which contained shower flow restrictors and outlet and switch plate gaskets. Approximately 220,000 kits were distributed over the period 1981 through 1983 resulting in estimated energy savings of 1.3 aMW. This program was operated under a conservation agreement with BPA.

### **Street Light Retrofit**

The purpose of this program to convert mercury vapor street lamps to high pressure sodium lamps. During 1982 and 1983, 11,302 lamps were converted resulting in estimated energy savings of 0.7 aMW. This program was operated under a conservation agreement with BPA.

### **Low Flow Shower Head and Faucet Aerator Distribution**

During 1992 through 1994 energy efficient shower heads and faucet aerators were made available to all electric and gas water heating customers. Through 1994, 67,048 low flow shower head and aerator kits were distributed. The company estimates that the program resulted in savings of approximately 2.72 aMW of energy and 4.95 MW of peak capacity through 1994.

**Appendix H****Resource  
Assessment  
(continued)****Compact Fluorescent Light Bulb Rebates**

Under this program, customers who purchased compact fluorescent light bulbs could receive a rebate of up to \$7 in 1992 and 1993 and \$6 in 1994. Through 1994, 36,647 bulb rebates have been issued. The company estimates that the program resulted in savings of approximately 0.3 aMW of energy and 0.5 MW of peak capacity through 1994.

**Residential New Construction**

The residential construction program supports the implementation of the applicable Washington state residential energy codes. In Idaho, the program supports jurisdictions that have adopted the Northwest Energy Code. Through 1994, payments were provided to 1,458 units. The company estimates that the program resulted in net savings of approximately 0.34 aMW of energy and 0.68 MW of peak capacity through 1994.

**Manufactured Home Acquisition (MAP)**

The Manufactured Home Acquisition program is a regional program that supports manufactured home builders who produce and distribute energy-efficient, electrically heated homes. Through 1994, payments were provided for 812 units. The company estimates that the program resulted in savings of approximately 0.56 aMW of energy and 1.12 MW of peak capacity through 1994.

**Residential Fuel Efficiency****Switch Saver Program**

In the spring of 1991, WWP ran a test program to evaluate different approaches to encourage customers to replace electric space and water heating equipment with natural gas equipment. In Coeur d'Alene, electric space and water heat customers were given significant grants toward purchase and installation of new natural gas equipment. In Lewiston and Clarkston, the company offered financing but no cash grant for customers who choose to switch to natural gas. The company estimates that the program resulted in savings of approximately 1.0 aMW of energy and 3.0 MW of peak capacity.

### **Energy Exchanger Program**

The Energy Exchanger program was designed to encourage customers to replace their existing electric space and water heating equipment with natural gas equipment. This program was available to all customers who use WWP electricity as their primary energy for space and water heating. Through the program, 11,119 space heat conversions and 20,479 water heat conversion occurred over the period 1992 through 1994. The company estimates that the program resulted in savings of approximately 24.38 aMW of energy and 64.34 MW of peak capacity through 1994.

### **Residential Weatherization**

WWP has offered weatherization incentives to its electric space heat customers since 1978. The weatherization program offers customers grants toward the installation of many energy savings measures including insulation energy efficient windows and water heater wraps. A weatherization incentive has also been offered to customers who participated through the limited-income community action program (CAP) agencies. Through 1994, 34,315 units have been weatherized. The company estimates that the program resulted in savings of approximately 20.37 aMW of energy and 40.74 MW of peak capacity through 1994.

### **Commercial/Industrial Electric Efficiency**

This program targeted commercial and industrial customers who install energy-efficiency measures. The company estimates that the program resulted in savings of approximately 3.78 aMW of energy and 6.3 MW of peak capacity through 1994.

### **Commercial/Industrial Fuel Efficiency**

This program was designed to encourage commercial and industrial customers to replace electric end uses with natural gas end uses. The company estimates that the program resulted in savings of approximately 1.01 aMW of energy and 1.68 MW of peak capacity through 1994.

**Costs****Appendix H****Resource  
Assessment  
(continued)****Three-Year DSM Program Results**

The company originally estimated, as part of its 1992 DSM filing, that the planned three year program would result in 28 aMW acquired at an average cost of 3.7 cents/kWh. Through 1994, the company anticipates exceeding its planning estimate by achieving a projected 34 aMW of savings. Additionally, WWP was able to acquire this resource at a cost considerably lower than estimated—an average of 2.7 cents/kWh. WWP's total load growth during this three-year time period was 23 aMW.

These achieved energy savings were 120% of original estimates with a cost of 73% of anticipated budgets for the three year experiment. These totals include two mid-course adjustments approved by the Commission in 1993 and 1994.

Additionally, several other positive effects occurred. An increased customer awareness of DSM and electric-to-gas fuel conversions was achieved. The company supported the dealer network of DSM providers and, by working together, were successful in significantly increasing the level of conversion activity through this program. Significant ongoing discussions were held with regional DSM advocates, customer groups, and regulatory staffs.

Additionally, the DSM accounting treatment approved by the Commission (providing for certain kinds of lost margin recovery and deferral of DSM amortization) was an instrumental element allowing the company to aggressively pursue this DSM resource given the concerns expressed by the company at the time. In summary, the company's DSM acquisition was successful and it was acquired at a considerably lower cost than estimated.

**Measurement and Evaluation**

Measurement and evaluation (M&E) plans, which had agreement within the DIG, were developed and implemented for each of the programs included in the company's 1992 filing. Eighteen studies were performed by seven consulting firms specializing in DSM evaluation. The M&E studies documented savings estimates and recommended improvements to program delivery and design. The M&E studies indicated that the savings, on a per measure basis, were very close to those anticipated at the time of the 1992 filing. Additional savings came from higher than estimated conversions from electric to natural gas equipment.

## Issues

The DSM Issues Group discussed eleven issues presented to it by the Commissions at the time of the 1992 approvals. A high level of resolution was reached on some issues while other issues were “teed up” for resolution by the Commission.

Several questions, related to 1995 DSM acquisition, were directed to the company at the April 27, 1994 Washington Commission Public Meeting and in written comments related to the 1994 Idaho mid-course filing. Two Working Group meetings were held involving DIG and TAC members to discuss these issues, many of which related to resource acquisition.

## DSM Supply Curves

The company utilized its end-use forecasting models to develop supply curves for DSM savings over the planning period. The REDMS model was used to estimate future DSM savings potential in the residential sector while the CEDMS model was used to estimate savings potential in the commercial sector. The supply curves, shown in Table 6H, represent the amount of net savings achievable for a range of levelized utility incentives from 1¢/kWh to 5¢/kWh. Based on the supply curves, a total of 42.5 aMW of DSM savings are available to meet future resource requirements. It is assumed that this amount of savings can be acquired in even, annual increments over the planning period.

**Table 6H**

**Demand-Side  
Resource  
Supply Curve  
Input**

Residential Conservation			Commercial Conservation		
Incremental Savings	Cumulative Savings	Utility Cost	Incremental Savings	Cumulative Savings	Utility Cost
4.6 aMW	4.6 aMW	1.0 ¢/kWh	5.1 aMW	5.1 aMW	1.0 ¢/kWh
2.1 aMW	6.7 aMW	2.0 ¢/kWh	6.2 aMW	11.3 aMW	2.0 ¢/kWh
2.2 aMW	8.9 aMW	3.0 ¢/kWh	5.5 aMW	16.8 aMW	3.0 ¢/kWh
1.7 aMW	10.6 aMW	4.0 ¢/kWh	7.3 aMW	24.1 aMW	4.0 ¢/kWh
2.0 aMW	12.6 aMW	5.0 ¢/kWh	5.8 aMW	29.9 aMW	5.0 ¢/kWh
Average Ramp Rate		0.66 aMW/year	Average Ramp Rate		1.55 aMW/year

Notes:

1. Residential savings estimates based on results of WWP Residential End-Use Modeling System (REDMS).
2. Commercial savings estimates based on results of WWP Commercial End-Use Modeling System (CEDMS).
3. Supply curves based on REDMS/CEDMS forecast of DSM “Market Potential” as provided by WWP Demand-Side Planning and Evaluation.

**Current Status****Appendix H****Resource  
Assessment  
(continued)****1995-96 DSM Filing**

According to the company's latest demand forecast, WWP's current mix of gas and electric resources will continue to provide reliable energy and capacity for its customers until 2006. However, due to WWP's ongoing corporate commitment to promote the efficient use of energy by its customers, the company is moving forward with the continuation of some of its original programs coupled with the addition of several new pilot programs.

WWP's latest filing (approved in Washington on Dec. 14, 1994 and in Idaho on Dec. 20, 1994) includes a special tariff to help the company sustain its energy-efficiency programming for all customers into the future. The special tariff, called a "rider", is designed to generate a pool of funds which is set aside only for DSM program funding. Every dollar customers invest with the rider is spent on efficiency programs.

Financing efficiency programs in this manner allows the company to avoid capitalization of DSM expenses. With the rider, DSM costs are expensed in the year in which they were incurred and the company avoids the placement of a regulatory asset on its books.

**DSM Program Focus**

Given WWP's current resource picture, it is the company's belief that customers are best served by a long-term focus on energy efficiency through codes and market transformation gained through both local and regional efforts. Therefore, the company's 1995-1996 DSM programs focus on two areas: 1) continuation of selected existing programs available to broad customer classes; and 2) market transformation programs through participation in selected regional programs. These programs, while maintaining a residential electric weatherization program and fuel efficiency awareness programs, puts a greater emphasis on commercial and industrial programs. The 1995-1996 programs include the following:

**Continuation of Selected Existing Programs**

- Residential electric weatherization
- Low-income electric energy efficiency
- Commercial and industrial electric efficiency
- Commercial and industrial natural gas efficiency

**Market Transformation Programs**

- Residential new construction (residential code)
- Manufactured housing acquisition program (MAP)
- Gas alternative to MAP
- Non-residential energy code
- Compact fluorescent lighting
- Natural gas awareness
- High efficiency appliance education
- Pilot or regional program participation as appropriate

Within the "pilot or regional program participation" category, three experimental programs are included. These pilots are the Resource Conservation Manager (RCM) program, commercial/industrial trade ally program, and commercial industrial building commissioning program. These pilots are intended to demonstrate that effective DSM can occur by identifying and removing barriers to implementing conservation.

**Summary**

The tariffs supporting the company's DSM programs are proposed to be in effect at least through December 31, 1996 which will provide stability to the programs and increase administrative efficiency as compared to proposing programs for one year at a time.

The company will continue to apply the total resource cost test (TRC), approved by the Commission in 1993, as the primary means to screen cost-effectiveness. The purpose of the TRC test is to insure that the total price paid for benefits, by all parties, does not exceed the value of the benefits. These benefits may include the energy related benefits as well as non-energy related benefits.

**Appendix H****Resource  
Assessment  
(continued)**

## General Resource Management Issues

Many specific resource management issues have been raised previously, e.g., hydro relicensing, Endangered Species Act, etc. However, there are several issues that are not specific to one kind of resource. WWP continues to track these issues and provides the following summaries.

### Environmental Externalities

Within its 1994 critical review of the issue, the Edison Electric Institute defines environmental externalities as, "the societal costs or benefits of production or consumption which are not borne or received through the price system by the firm or household which produces or consumes it." In the case of production of electricity, they are the environmental effects that are not directly reflected in the final cost of that produced electricity. Specific effects include occupational risk, pollution-related health and safety issues as well as a host of external benefits resulting from the use of electricity. Environmental costs include reduced visibility, reduction of crop and timber yields, acidification of lakes and streams, damage to equipment and structures and reduction in fish and wildlife populations.

WWP has been involved in the analysis and use of various methods to try to account for the effects of externalities in the evaluation, ranking and acquisition of electrical resources. In the ranking process for WWP's 1994 RFP, conservation/DSM resources were given a 10% cost credit which is consistent with the Northwest Power Act. An additional eight percent cost credit was allowed for transmission and distribution benefits over generation resource proposals. This resulted in an 18% total cost credit for conservation resources during the ranking process. Renewables were given a 10% cost credit to recognize the environmental benefits of these resources.

WWP has identified the following concerns with regard to the externalities issue. Before externalities can be calculated with any degree of confidence, these items must be addressed:

- Externality costs must be considered not just for electricity, but for other forms of energy as well such as natural gas, gasoline and heating oil.
- State-level adoption of environmental externalities could create a patchwork of inconsistent regulation. Some utilities could end up at a competitive disadvantage if they were located in a state with aggressive externality charges. Some externalities are global in scope, e.g., global warming, ozone layer, etc.



- Air pollutants emitted by power plants impose “hidden” costs on society, some of which have already been internalized through federal legislative and regulatory measures, e.g., the Clean Air Act Amendments of 1990.

The current focus on environmental externalities presents additional challenges for WWP in maintaining the delicate balance between economics and the environment. The consideration of environmental impacts has always been a significant element of WWP’s resource planning activities and the company’s assessment of future resources will continue to include them. WWP is also continuing to monitor and participate in state and regional efforts to clarify the externalities issue.

### **Proposed National Energy Tax**

President Clinton proposed a national energy tax in early 1994 designed to provide revenues for infrastructure improvement. WWP had several concerns with regard to the implementation of tax--among them were:

- the ability to pass the Btu tax through to customers;
- the total effect on coal prices; and
- the tax rate on hydropower.

WWP estimates that the energy tax would have cost WWP energy customers approximately \$41 million per year of which \$30 million would be on electric customers and \$11 million on the natural gas customers. In addition, the impact of state and local piggy-back taxes would add another \$5 to \$6 million per year.

WWP joined with other utilities and energy developers in opposing the Btu energy tax. President Clinton gave up on the proposed Btu energy tax proposal after major opposition by Senator David Boren, D-Oklahoma and others.

### **Avoided Cost**

In general, avoided cost is meant to represent the incremental cost of new electric resources available to a utility. Avoided cost rates reflect the price of power from the avoided resource or resource mix. These rates are often applied to the purchase of energy from PURPA qualifying facilities. In some cases, the avoided cost is used to determine the cost-effectiveness of potential resource alternatives.

Avoided costs are one indicator of the incremental cost of new resources. WWP’s Strategic Resource Planning Model (SRPM) produces another type of indicator. The

SRPM calculates the incremental cost of new resources weighted by resource type for potential resource strategies. Unlike the avoided costs based on a surrogate resource, the SRPM calculates a rate based on actual resources selected to meet projected load. For WWP's preferred strategy, SRPM calculates a 20-year levelized cost of new resources of approximately 2.85 cents/kWh.

In 1993, WWP filed revised avoided costs rates with the utility commissions in both Washington and Idaho. The WUTC approved the revised rates in April 1994. In Idaho, a motion to consolidate the filing together with PacifiCorp and Idaho Power Company was granted in January 1994. Hearings on the consolidated cases was completed November 30-December 1, 1994.

The IPUC on January 31, 1995, issued an order which changes the method for setting avoided cost. One of the changes was adopting an IRP-based method of setting rates for larger projects. The commission also asked WWP to refile its avoided cost rates to reflect current utility specific and generic variables. WWP plans to fulfill this request during March of 1995.

In both states, new rates are approximately 30% lower than the previous ones and better represent the market price of energy available to the company.

### **Electric and Magnetic Fields (EMF)**

In recent years, increasing attention has been paid to concerns whether exposure to extremely low frequency (60 Hertz) electric and magnetic fields (EMF) could result in adverse effects to human health. These fields are present virtually everywhere in our society--they are present in operation of electrical transmission and distribution facilities as well as in the use of home appliances and office equipment. As a result, we are exposed to these fields in varying intensities on a daily basis whether at home or in the work place.

For more than 25 years, scientists have conducted thousands of studies to examine these questions. Numerous expert panels from over 20 major scientific organizations and independent regulatory advisory groups, composed of scientists independent from the utility industry, have periodically reviewed the evolving scientific evidence. The overall consensus of these reviews to date is that the available scientific research has not provided any conclusive evidence that exposure to extremely low frequency (60 Hertz) electric or magnetic fields result in any type of adverse effect on human health. Even in the three latest epidemiology studies conducted to determine the possible existence of an association with EMF and brain cancer and/or leukemia among

**Appendix H****Resource  
Assessment  
(continued)**

electric utility workers, the inconsistent results seem to reaffirm that the uncertainty surrounding this issue will remain for some time to come.

The first study, completed in 1993, by Jack Sahl, senior researcher for the Southern California Edison Company, found no increased risk of brain cancer or leukemia among the 36,000 workers at Edison. In 1994, Gilles Theriault of McGill University in Quebec, Canada completed a study that included 223,000 electric utility workers at two Canadian utilities (Ontario Hydro and Hydro Quebec) and the national electric utility of France (Electricite de France). The French/Canadian study found no increased risk for brain cancer, but did show a slight association between magnetic field exposure and acute non-lymphocytic leukemia. The third study, published in 1995, was conducted by David Sanitz and Dana Loomis of the University of North Carolina under sponsorship by the Electric Power Research Institute and involved 139,000 male electric utility workers at five U.S. utilities. The study found that men in electric utility occupations appear to have no increased risk for leukemia for any level of magnetic field exposure, but electrical workers exposed to high levels of magnetic fields have a higher risk of dying of brain cancer (approximately double) than similar workers who have lower exposure to magnetic fields. The inconsistency of these results demonstrates the need for a better understanding of the elements of exposure to electric and magnetic fields as well as the resulting biological effects.

In the current environment of concern, WWP recognizes its obligation to its employees, its customers, and the public to continue to monitor and support EMF health research and proceedings, to lend our resources and support to the collection and distribution of comprehensive and up to date information, to conduct magnetic field measurements upon request, and to develop responsible public policies related to the issue of EMF.

WWP is committed to providing safe and reliable electric service for its customers and a safe work environment for its employees. Construction and operation of company electric facilities will continue to adhere to all state and federal standards for public and worker safety.

## **New Technology**

WWP believes that the application of advanced technology within new and existing energy production facilities is one of the keys for sustaining low-cost, reliable energy services into the future. Currently, within the industry, there are dozens of research and development efforts being conducted for improved electric energy production and transmission. WWP has chosen to participate in two of these efforts—one in the hydroelectric generation area and the other in the development of the fuel cell.

### **Advanced Hydropower Turbine Program**

The development of more environmentally friendly and efficient hydroelectric turbines is the goal of the Advanced Hydropower Turbine (AHT) program.

Initiated in 1993, the AHT is sponsored by the Department of Energy, the National Hydro Association and EPRI along with several utilities and turbine vendors. WWP is one of the dozen electric utilities which has committed to the program. Monies initially contributed by WWP and the other utilities has now been matched by the Department of Energy to provide a total of \$1 million to begin the first of three phases of research.

The first phase of the AHT project, named conceptual engineering designs, is already underway with request-for-proposals going out at the end of 1994; all of the largest turbine vendors are expected to return the RFP. Bidders are being asked to describe the proposed concept in sufficient detail to be understood and evaluated by a group of knowledgeable reviewers. They are also being asked to provide an estimated budget and schedule for conceptual design development and to identify their proposed industry partnerships and teaming arrangements.

Bidders are being encouraged to discard conventional thinking and search out innovative solutions. A new perspective is needed which looks at the entire “turbine system” from intake to tailrace. These next generation turbines should use state-of-the-art advances in environmental technology, materials, computer-aided design programs, precision machining and manufacturing techniques. Awards will be based upon environmental and technical feasibility, economics, bidder’s capabilities and the likelihood of achieving program goals and objectives.

**Appendix H****Resource  
Assessment  
(continued)**

The second and third phases of the AHT include the building and testing of fully engineered models of the most promising designs; and the building and testing (to scale) of prototypes of the most promising models in actual operating hydropower plants. The decision to continue each additional phase will be based on the results of the previous phase.

**Fuel Cells**

WWP research indicates that fuel cell technology has an initial market niche in the 200 kW to 10 MW range providing that plant efficiencies exceed 40 percent and cost/kW falls below \$1500. With distinct advantages over traditional electric energy production including: efficiency, modularity/size, extremely low environmental intrusion and reliability, fuel cell plants will find extensive application in distributed generation, premium power (UPS replacement) and cogeneration. The fuel cell industry predicts plant capacities of 500 + MW with in the next 10 to 14 years. If such a progression occurs, fuel cell technology could be utilized very cost effectively to re-engine old thermal power plants.

Fuel cells incorporate electrochemical processes which react hydrogen rich gas with oxygen (usually from air) to produce electricity and heat. Fuel cells are combined to form stacks, which in turn are modularized with a plant. Fuel cell stacks produce electricity with no combustion at conversion efficiencies exceeding 55%. With extremely low emissions, fuel cell stacks are described as "environmentally benign".

In the absence of a hydrogen infrastructure, all stationary fuel cells plants will incorporate fuel processing sections to derive hydrogen gas from a source fuel such as natural gas, coal gas, biogas, etc. This process, known as reforming, is about 70% efficient using conventional methods. In addition to producing hydrogen, reforming also produces carbon oxides, some of which are emitted from the plant.

There are five fuel cell technologies which are characterized by their respective electrolyte--they are: Phosphoric Acid, Solid Polymer, Alkaline, Molten Carbonate and Solid Oxide. Each of these fuel cell types has its own unique operating regime (different temperature, catalyst, etc.)

To date, the only commercialized fuel cell plants in the world are of the Phosphoric Acid type. A U.S. group called IFC/ONSI is currently marketing a 200 kW Phosphoric Acid fuel cell plant, completely self contained, and fueled by natural gas. The unit produces 700,000 BTU/hour heat output suitable for hot water applications. Its plant electrical efficiency is rated at 40%; however, overall efficiency can exceed 80% for applications which utilize the thermal output. This plant can be located

at the load site and runs at very low noise levels. Net cost/kW is about \$3,000 under a new government rebate program and can be operated in the five to nine cents/kWh range depending on the cost of natural gas. Data on nearly 100 installations indicate high levels of reliability.

### **Fuel Cell Commercialization Groups**

In order to expedite the development of certain fuel cell types, some fuel cell manufacturers, and other entities, have organized commercialization groups. These groups coordinate a number of efforts for the companies including facilitation of demonstration projects, providing needed plant specifications and arranging future buyer contracts. Essentially the groups are ensuring successful target market entry for the fuel cell manufacturers. These groups provide these values in return for first access to the technology once it is available. WWP is an active participant in three fuel cell commercialization efforts.

1. WWP is a member of the Fuel Cell Commercialization Group (FCCG) which is guiding the efforts of Energy Research Corporation (ERC) and its subsidiary the Fuel Cell Engineering Company (FCE). The companies are working to commercialize 2 MW direct reforming molten carbonate fuel cell plants. The consortium is currently constructing a natural gas demonstration plant in Santa Clara, California.
2. WWP is also a member of Alliance to Commercialize Carbonate Technology (ACCT) which is guiding the efforts of MC-Power Corporation. The company is working to commercialize 1 MW internally manifolded molten carbonate fuel cell plants. The consortium is participating in a 250 kW natural gas fueled demonstration plant currently under construction at UNOCAL in Brea, California.
3. WWP has formed a preliminary working relationship with Ballard Power Corporation of Vancouver, B.C. and Dow Chemical to commercialize Ballard's 250 kW, natural gas fueled, Solid Polymer (also called Proton Exchange Membrane) fuel cell plant.

WWP is closely monitoring the activities of Westinghouse Corporation in development of the Solid Oxide fuel cell plant. This technology has a longer development time frame than other technologies due to its high temperature operation and design constraints. However, Solid Oxide technology has some distinct advantages which could be extremely beneficial and cost effective.

**Appendix I****Resource  
Analysis**

# Resource Analysis

WWP follows a systematic process to determine which potential resources best meet customer needs. It is designed to be flexible enough to allow the company to adequately respond to constantly changing load and resource conditions. At minimum, the resource strategy is reviewed annually, coinciding with the development of the company's latest load forecast. The process is also initiated whenever significant changes to the existing conditions are foreseen. The company's resource acquisition decision process is described below:

- 1. Resource Needs** Forecast of energy and peak customer demand are combined with contractual obligations to determine an estimate of the company's long-term resource requirements.
- 2. Resource Assessment** WWP's review of resource options includes an assessment of demand-side and supply-side resources.
- 3. Resource Screening** The resource portfolio contains low-cost alternatives that are compatible with existing system operation, have acceptable environmental impacts and can be matched against the resource need.
- 4. Resource Evaluation and Analysis** WWP's Strategic Resource Planning Model (SRPM) is used to compare the performance of various resource strategies.
- 5. Resource Plan Recommendation** The preferred plan represents a low-cost and flexible plan for the company and its customers. It meets forecasted needs and addresses many of the issues and uncertainties associated with resource management.
- 6. Resource Plan Approval** Internal and public review is used to finalize the resource plan.
- 7. Resource Plan Implementation** Short-term action plans outline the steps and responsibilities required to accomplish the final resource plan.

In this appendix, the company's SRPM is used to compare the performance of various resource strategies. First the model is introduced and described, then the various assumptions and scenarios are outlined.

## Strategic Resource Planning Model (SRPM)

The SRPM is an analytical model used by WWP to facilitate long-term integrated resource planning. SRPM calculates the economic and financial implications of utility resource acquisition decisions. Using an analytical technique called Monte Carlo simulation, SRPM also explicitly accounts for key planning uncertainties and allows for examination of tradeoffs between expected costs and risk. For any given set of planning assumptions and resource decisions, the model provides outcome indicators such as rates, revenue requirements, new resource costs, plus other key financial indicators. For the 1995 IRP, SRPM evaluated different resource strategies to serve the firm energy needs over the planning horizon 1994 through 2013.

SRPM is not intended to be an optimization model. The purpose of the model is to examine the implications of selecting a specific resource mix under varying conditions. SRPM will, if allowed, choose new resource based on lowest lifecycle cost. SRPM will build the minimum cost discretionary resource when planned load exceeds planned resources, and will operate power plants in accordance to minimum run constraints, maximum availability factors, variable costs, and the price of secondary energy.

Most of the resource scenarios evaluated using the SRPM represent a single exogenous event, such as the loss of a resource or higher natural gas and secondary energy prices, but not loss of resource capability and higher gas and energy prices. The results of each scenario show the magnitude and direction of the impacts on revenue requirement and retail rates. For comparison purposes, the company modeled a scenario called "Reference Case" that includes no specific resource decisions, using only purchases at expected rates to meet load requirements. For this IRP, the company treated DSM differently than in past IRP modelling. While the model incorporates DSM supply curves that represent the amount of DSM savings available for a range of costs, DSM was not modeled as a discretionary resource that the model could choose or not choose. A primary reason to not model DSM as a discretionary resource is that the supply curves that WWP developed are time dependent, that is the amount of DSM available changes over time, even if no DSM is acquired. Therefore supply curves that represent future DSM potential starting in 1994 are no longer accurate in the year 2000 if no DSM activity has occurred in the interim. Because of this complexity, which is unique to DSM, the company modeled DSM as a discrete decision for the entire planning period. The modelling was performed so that a resource scenario either had DSM activity at a steady level throughout the entire planning horizon or it had no DSM.

Under most scenarios, implementation of DSM throughout the planning horizon leads to levelized retail rates that are about .08¢/kWh higher than the same scenario without



DSM. The inclusion of DSM, however, usually results in lower revenue requirements over the planning horizon and therefore lower average utility bills for customers. The model calculates the trade-off of lower revenue requirements versus higher rates under various conditions.

## **New Marginal Production Costing Tool**

In 1994, WWP purchased a marginal production cost tool to assess various effects such as reliability, expected production costs and variable O&M of alternative resource plans. The tool will allow WWP to continue its short, mid and long-term planning activities within a common planning framework. WWP plans to use the model to help answer questions for specific resource changes such as:

- What will be the best way to operate WWP's system to mitigate impacts resulting from changes in Columbia River operations?
- How will Resources West Energy operate its power resources to respond to an unsettled industry?
- What is the value of power products that WWP develops to address open access and retail wheeling opportunities?

By looking at regional production costs, the tool will give us a better understanding of our competition--both their needs and capabilities. It will add value by allowing us to make better decisions by assessing regional market effects and synergies between our own resources more efficiently and precisely.

## SRPM Input Assumptions

All assumptions required for the SRPM are found in the following section.

### Cost Escalation - Annual Cost Escalation

General Inflation	3.6%
Power Plant O&M Escalation	3.2%
Power Plant Capital Escalation	1.9%

### Load Growth - Annual Average Growth Rate

Low	0.63%
Expected	0.86%
High	1.29%

### Power Plant Natural Gas Cost - Nominal Annual Price Escalation

Low	2.5%
Expected	5.0%
High	7.5%

### Power Plant Coal Cost - Nominal Annual Price Escalation

Low	
Expected	3.9%
High	

### Secondary Energy Purchase Cost - Percentage Relative to Expected

Low	90%
Expected	100%
High	125%

### 50 aMW Secondary Purchase Planning Rule

All scenarios except the "No 50 MW Planning Rule" scenario incorporate the company's 50 aMW planning rule. This means that the company will rely on up to 50 aMW of nonfirm secondary purchases to meet its resource needs.

## Resource Dispatchability

In all scenarios, resources are assumed to be dispatched against the secondary market. That is if the cost of purchased power is lower than the operating cost of the plants then purchases will be made in place of operating the plant. The opposite is also true that if the cost of operating plants is less than the market price then resources not needed to meet retail loads will be operated and sold.

**Table 11**  
**Purchased**  
**Power Cost**  
**Assumptions**

	BPA NR Purchase Demand (\$/kW/mo.)	BPA NR Purchase Energy (\$/MWh)	Avoided Cost (WA) Energy (\$/MWh)	Mid-Columbia Extension Energy (\$/MWh)	Secondary Purchase Energy
1994	\$5.63	\$28.58	\$22.40		\$20.20
1995	\$5.63	\$28.58	\$23.30		\$19.50
1996	\$6.65	\$33.73	\$25.30		\$18.10
1997	\$7.05	\$35.79	\$28.20		\$18.90
1998	\$7.46	\$37.85	\$29.44		\$19.60
1999	\$7.90	\$40.07	\$30.99		\$20.50
2000	\$8.22	\$41.73	\$40.78		\$21.50
2001	\$8.54	\$43.31	\$43.14		\$22.40
2002	\$8.99	\$45.61	\$45.66		\$23.40
2003	\$9.35	\$47.43	\$48.36		\$24.50
2004	\$9.60	\$48.70	\$51.23		\$25.60
2005	\$9.99	\$50.68	\$54.29	\$23.61	\$26.80
2006	\$10.55	\$53.53	\$57.54	\$24.46	\$28.00
2007	\$10.91	\$55.35	\$61.02	\$25.34	\$29.30
2008	\$11.49	\$58.28	\$64.73	\$26.25	\$30.60
2009	\$12.06	\$61.21	\$68.69	\$27.20	\$31.90
2010	\$12.95	\$65.72	\$72.92	\$28.18	\$33.20
2011	\$13.87	\$70.39	\$77.45	\$29.19	\$34.40
2012	\$14.34	\$72.77	\$82.28	\$30.24	\$35.60
2013	\$14.94	\$75.78	\$87.44	\$31.33	\$36.90

**Table 21**  
**New Plant**  
**Assumptions**

Plant	Rathdrum SCT	CCCT	Residential Conservation	Commercial Conservation	Cabinet 2	Cabinet 3
Maximum Availability Factor	51%	88%	100%	100%	15%	20%
Load Reduction Measure? (Y/N)	No	No	Y	Y	No	No
Coal/Gas Fired Resource? (C/G/O)	G	G	O	O	O	O
Supply Curve Resource? (Y/N)	N	N	Y	Y	N	N
Capital Cost/Installed KW		\$778	\$0	\$0	\$568	\$405
Real Capital Cost Escalation	0.00%	-1.64%	0.00%	0.00%	-1.64%	-1.64%
Total Required Lead Time (Years)	0	2	1	1	3	3
Capacity Factor in SRPM	51%	50%	100%	100%	15%	20%
Economic Life	30	30	20	20	30	30
Max. Amount of New Resource in Mix (aMW)	82	500	~	~	0.91	1.8
Minimum Incremental Size (aMW)	82	50	0.25	0.25	0.91	1.8
Fixed O & M (\$/kW)	\$7.47	\$9.69	\$0.00	\$0.00	\$0.00	\$0.00
Fixed Real O & M Escalation	-0.39%	-0.39%	0.00%	0.00%	0.00%	0.00%
Variable O & M (mills/kWh)	22.06	18.29	0.00	0.00	0.00	0.00
Variable Real O & M Escalation	1.35%	1.35%	0.00%	0.00%	0.00%	0.00%
Supply Curve Maximum	na	na	12.6	29.9	na	na
Maximum DSM Ramp Rate	na	na	0.63	1.5	na	na

**Table 2I**  
**New Plant**  
**Assumptions**  
 (continued)

Plant	Cabinet 4	Noxon 1	Noxon 3	Wind
Maximum Availability Factor	8%	15%	19%	30%
Load Reduction Measure? (Y/N)	No	No	N	N
Coal/Gas Fired Resource? (C/G/O)	O	O	O	O
Supply Curve Resource? (Y/N)	N	N	N	N
Capital Cost/Installed KW	\$727	\$464	\$464	\$999
Real Capital Cost Escalation	-1.64%	-1.64%	-1.64%	-1.64%
Total Required Lead Time (Years)	3	3	3	2
Capacity Factor in SRPM	8%	15%	19%	30%
Economic Life	30	30	30	30
Max. Amount of New Resource in Mix (aMW)	0.68	1.5	1.9	50
Minimum Incremental Size (aMW)	0.68	1.5	1.9	10
Fixed O & M (\$/kW)	\$0.00	\$0.00	\$0.00	\$2.93
Fixed Real O & M Escalation	0.00%	0.00%	0.00%	-0.39%
Variable O & M (mills/kWh)	0.00	0.00	0.00	8.79
Variable Real O & M Escalation	0.00%	0.00%	0.00%	-0.39%
Supply Curve Maximum	na	na	na	na
Maximum DSM Ramp Rate	na	na	na	na

**Table 3I****Existing Plant Assumptions**

Plant	Centralia	Colstrip	Hydro
Nameplate Capacity (MW)	201	216	908
Maximum Availability Factor	88%	80%	36%
Minimum Run Capacity Factor	88%	80%	36%
Net Energy Output (aMW)	177	173	323
Original (Gross) Cost (\$000,000)	\$53	\$263	\$218
Current Book Value (\$000,000)	\$23	\$190	\$183
Economic Life	35	35	80
Remaining Economic Life	21	27	66.65
Purchase Resource? (Y/N)	N	N	N
Coal/Gas Fired Resource? (C/G/O)	C	C	O
Base Year Fixed O&M Expense (\$/kW)	\$20.16	\$36.97	\$9.16
Real Fixed O&M Escalation	-0.39%	-0.39%	-0.39%
Base Year Variable O&M Expense (mills/kWh)	13.07	7.08	0.00
Variable O&M Cost Escalation	0.29%	0.29%	0.00%

**Table 3I****Existing Plant Assumptions****(continued)**

Plant	NECT	Kettle Falls
Nameplate Capacity (MW)	69	47
Maximum Availability Factor	79%	93%
Minimum Run Capacity Factor	79%	93%
Net Energy Output (aMW)	54	44
Original (Gross) Cost (\$000,000)	\$11	\$91
Current Book Value (\$000,000)	\$5	\$66
Economic Life	25	35
Remaining Economic Life	21	25
Purchase Resource? (Y/N)	N	N
Coal/Gas Fired Resource? (C/G/O)	G	O
Base Year Fixed O&M Expense (\$/kW)	\$0.07	\$59.69
Real Fixed O&M Escalation	-0.39%	-0.39%
Base Year Variable O&M Expense (mills/kWh)	24.18	7.72
Variable O&M Cost Escalation	1.35%	1.35%

**Appendix I****Resource  
Analysis  
(continued)**

## **Resource Scenarios**

### **Preferred Case**

The company's preferred resource plan includes a steady level of DSM through the entire planning and renegotiation of Mid-Columbia power purchases as the existing contracts expire. These two resource additions provide more adequate firm energy capability to serve WWP's expected needs through the planning horizon.

Under the preferred plan, average rates are expected to grow at a nominal rate of 1.11%. Adjusted for inflation, this is a decrease in real dollars of around 2.5% per year. The projected levelized nominal retail rate over the planning horizon is 4.97/kWh.

The SRPM projects the preferred plan to be among the lowest cost strategies, although not the single lowest cost strategy. Resource acquisitions under the preferred plan, however, do not preclude the company from pursuing other cost-effective or revenue enhancing resources such as hydro upgrades or wholesale power sales. These other resource options can further lower the company's resource costs and future retail rates and would be considered as part of a preferred resource strategy when they are available.

### **Reference Case**

This scenario assumes that resource needs are met with existing resources and purchases, with no new resources constructed during the planning period other than a small amount of hydro plant upgrades. The first resources added are hydro upgrades beginning in the year 2010. Remaining resource needs are met with avoided cost purchases of 9 aMW, 31 aMW and 42 aMW in the years 2011, 2012, and 2013 respectively.

### **No-loss of Capability Scenarios**

#### **Demand-Side Management**

DSM is the only resource option that is evaluated as a new resource that has supply curves where costs change by the amount of resource. Every scenario is evaluated with and without DSM. When DSM is included it is acquired in even increments over the planning horizon. The cost of the DSM is based on the DSM supply curves that were developed for the IRP process.

The DSM supply curves include 12.6 aMW of residential conservation and 29.9 aMW of commercial conservation at levelized utility prices ranging from 1¢/kWh to 5¢/kWh. The DSM savings was assumed to occur equally, at 2.24 aMW, for the years 1995 through 2013.

The 2.24 aMW of net DSM that was modeled in the SRPM compares to the total DSM of around 5.5 aMW that WWP expects to save based on the DSM programs that will be operated in 1995 and 1996. The reason for the difference in DSM savings levels is because part of the savings that WWP's DSM programs are designed to capture are already incorporated in the planning forecast. These programs, whose savings are in the planning forecast, include residential fuel conversion, the manufactured home acquisition program, residential new construction and non-residential energy code savings. These programs make up more than one-half of the planned DSM program savings over the period 1995 through 1996. Since the savings from these programs are included in the planning forecast in the SRPM they are not included in the DSM supply curve in the model.

### **High Gas and Secondary Purchase Prices**

This scenario assumes that both natural gas prices and secondary purchase prices are high. High gas prices affects the operating cost of the existing Rathdrum and Northeast combustion turbines and a new combined cycle combustion turbine resource option.

### **50 MW Planning Rule**

This scenario assumes that WWP does not incorporate its 50 aMW planning rule where any resource deficit up to 50 aMW is met with secondary purchases before other resources are added. All other scenarios assume that the 50 aMW planning rule is utilized.

## **Loss of Capability Scenarios**

### **Retire Centralia in 2003**

This scenario assumes that the Centralia coal plant is retired in 2003. This accelerates the cost recovery of the plant so that all costs are recovered by the end of 2002. No decommissioning or other costs associated with the Centralia plant are assumed in this scenario.



**Appendix I****Resource  
Analysis  
(continued)****Loss of 10% of Hydro Capability in 2001**

This scenario assumes that in the re-licensing process or for other reasons WWP loses 10% of its company owned hydro firm energy production capabilities in 2001. This scenario does not affect the amount of nonfirm energy available under normal water conditions nor does it affect the energy capabilities of the hydro upgrades new resource options.

**Loss of Centralia in 1998**

This scenario assumes that WWP loses the entire capability of the Centralia coal plant in 1998. This scenario assumes that WWP is allowed to recover its investment in Centralia. No decommissioning or other costs associated with the Centralia plant are assumed in this scenario.

**Change in Load Growth Scenarios****High Load Growth**

High load growth was run with a Reference Case and a High Secondary Purchase and Natural Gas Price scenarios. Loads in the high load growth scenario are approximately 120 aMW higher in 2013 than in the expected load growth scenario. Two scenarios were prepared with high load growth conditions. One included expected natural gas and secondary energy purchase prices and the other included high prices for natural gas and secondary energy purchases.

**Low Load Growth**

Low load growth was run only with a Reference Case. Loads in the low load growth scenario are approximately 130 aMW lower in 2013 than in the expected load growth scenario. In the low load growth case no additional resources, other than DSM and a small amount of secondary purchases, are required through the planning horizon.

## SRPM Key Outputs

Key outputs of the SRPM are shown in Figures 1I and 2I and on Table 4I (located on the following pages). Two key financial results, net present value of revenue requirement and levelized retail rate, are shown for each resource scenario. The net present value of revenue requirement represents the total utility cost of the resource scenario over the entire planning horizon. The levelized rate represents a discounted nominal average retail rate over the planning period.

In general, it is desirable to have a resource scenario that has both a low net present value of revenue requirement and low levelized retail rates. As shown on Figure 1I, the majority of the resource scenarios evaluated have relatively small differences in revenue requirement and rates. Only in scenarios where the service of a large generating facility, in this Centralia, is lost does the costs in terms of revenue requirement and rates significantly increase.

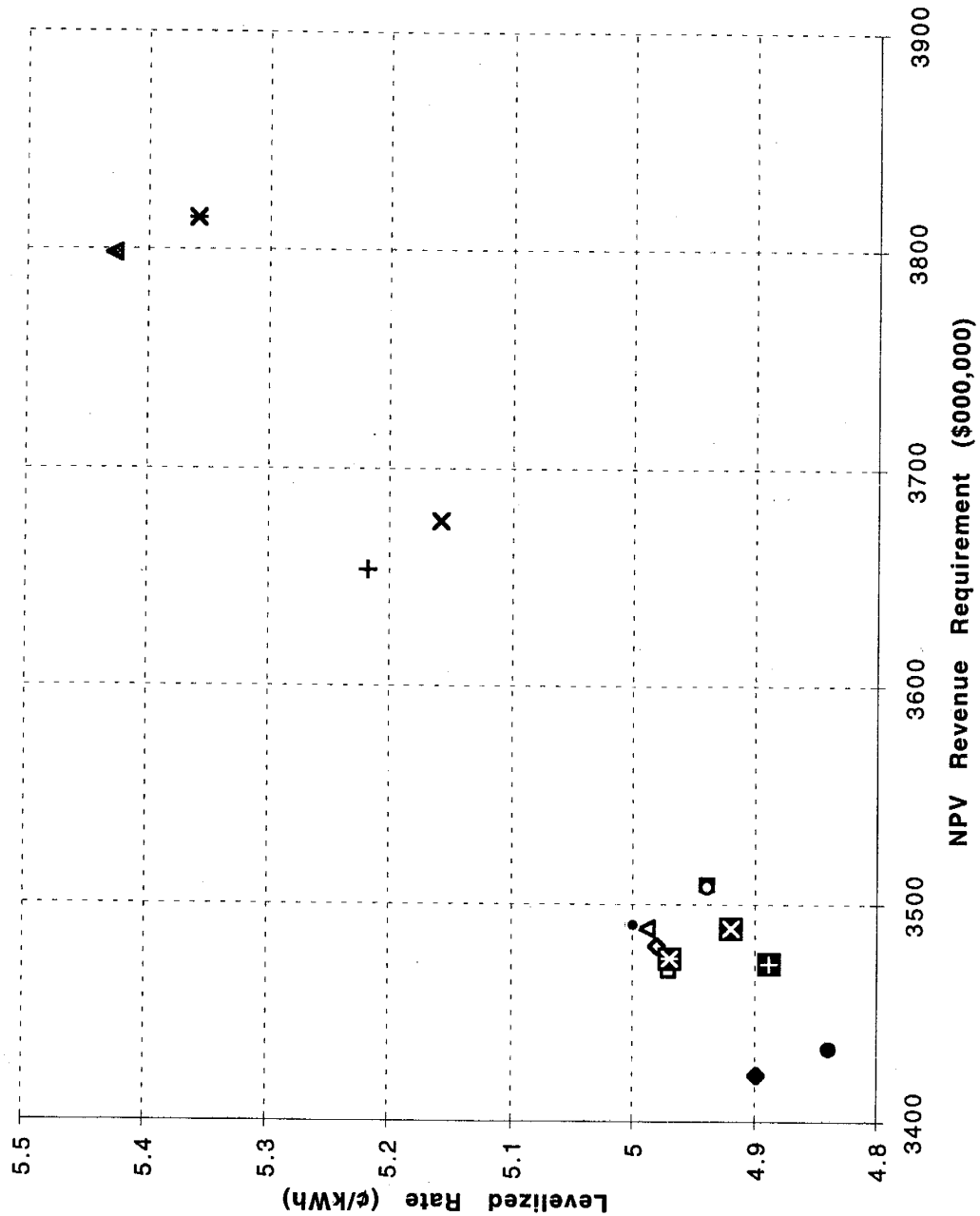
Each scenario is shown with and without DSM. In most cases DSM lowers the present value of revenue requirements and increases the levelized retail rate. Acquiring DSM has a greater effect at lowering revenue requirements in scenarios that require a higher level of new resource acquisition such as high load growth scenarios or scenarios with a loss of a major existing resource. Acquiring DSM has a lesser effect at lowering revenue requirements when little or no new resources are required or when new resources can be acquired at very low cost.

**The more detailed annual outputs for each scenario are available at the end of this plan, pages 149-192.**

Figure 11

Expected  
Loads  
Scenario

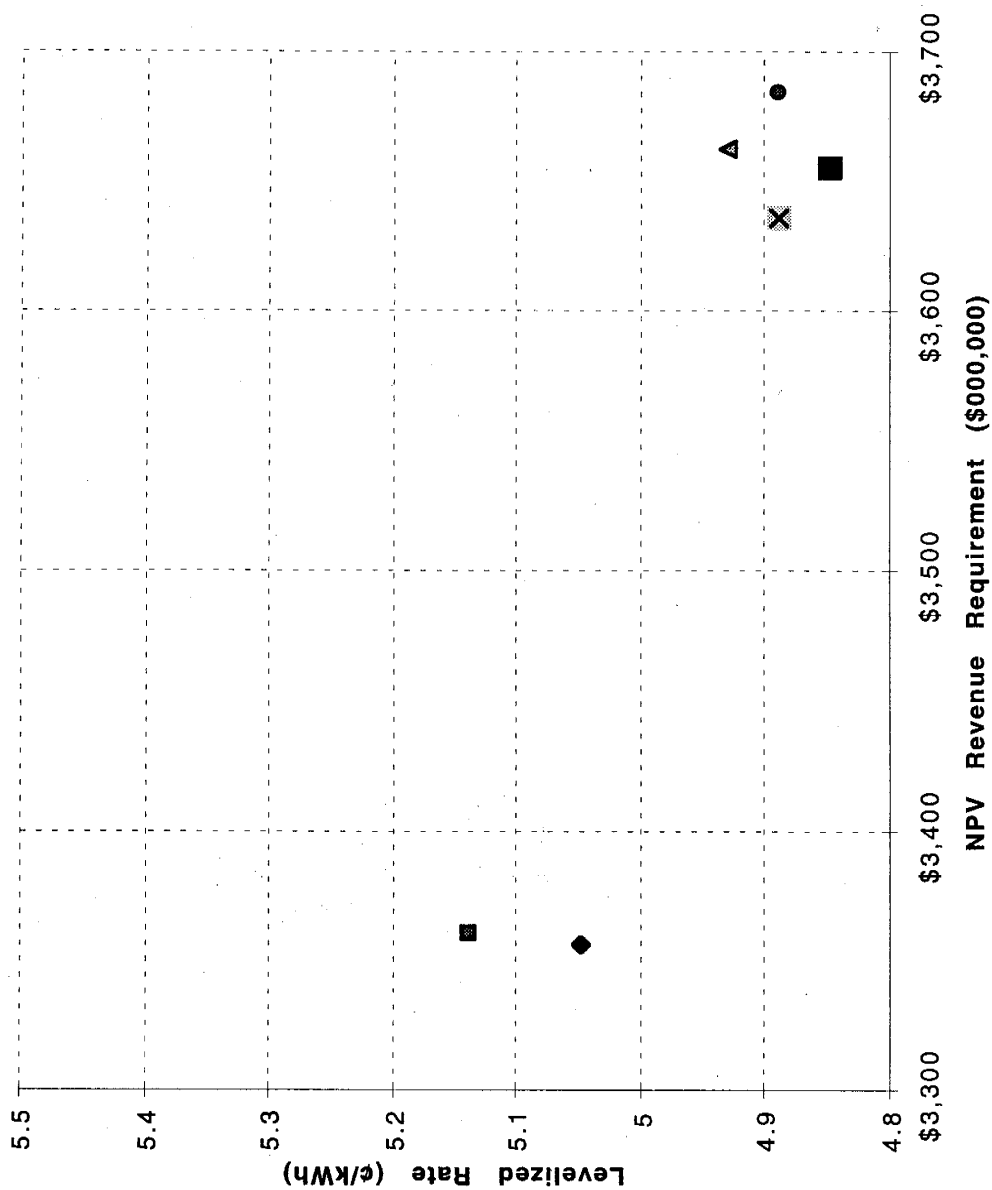
Washington Water Power  
1995 IRP Scenarios, Expected Loads



# Washington Water Power Company 1995 IRP Scenarios, Low & High Loads

Figure 21

Low & High  
Load  
Scenario



# Washington Water Power Company

## 1995 IRP Summary of Resource Scenarios

Load Growth	Scenario	DSM	NPV Revenue Requirement (\$000,000)	Levelized Retail Rate (¢/kWh)	Resources Added
Expected	Reference Case	No	\$3,472	4.89¢	Hydro Upgrades, Sec. & AC Purchases
	Reference Case	Yes	\$3,470	4.97¢	DSM, Hydro Upgrades, Sec. Purchases
	High Gas & Secondary Prices	No	\$3,489	4.92¢	Hydro Upgrades, Sec. & AC Purchases
	High Gas & Secondary Prices	Yes	\$3,481	4.98¢	DSM, Hydro Upgrades, Sec. Purchases
	No 50 MW Planning Rule	No	\$3,508	4.94¢	Hydro Upgrades, AC Purchases, Wind, CCCT
	No 50 MW Planning Rule	Yes	\$3,491	5.00¢	DSM, Hydro Upgrades, AC Purchases, Wind
	Retire Centralia in 2003	No	\$3,675	5.16¢	Hydro Upgrades, Sec. & AC Purchases, Wind, CCCT
	Retire Centralia in 2003	Yes	\$3,653	5.22¢	DSM, Hydro Upgrades, Sec. & AC Purchases, Wind, CCCT
	Loss of 10% Hydro in 2001	No	\$3,510	4.94¢	Hydro Upgrades, Sec. & AC Purchases, Wind
	Loss of 10% Hydro in 2001	Yes	\$3,488	4.99¢	DSM, Hydro Upgrades, Sec. & AC Purchases, Wind
	Loss of Centralia in 1998	No	\$3,814	5.36¢	Hydro Upgrades, Sec. & AC Purchases, Wind, CCCT
	Loss of Centralia in 1998	Yes	\$3,798	5.43¢	DSM, Hydro Upgrades, Sec. & AC Purchases, Wind, CCCT
	100 MW Wholesale Power Sale	No	\$3,434	4.84 ¢	Hydro Upgrades, Sec. & AC Purchases
	100 MW Wholesale Power Sale	Yes	\$3,421	4.90 ¢	DSM, Hydro Upgrades, Sec. & AC Purchases
High	Preferred Plan	No	\$3,468	4.89 ¢	Hydro Upgrades, Mid-Columbia & Sec. Purchases
	Preferred Plan	Yes	\$3,475	4.97 ¢	DSM, Mid-Columbia & Sec. Purchases
Low	Reference Case	No	\$3,652	4.84¢	Hydro Upgrades, Sec. & AC Purchases, Wind, CCCT
	Reference Case	Yes	\$3,634	4.89¢	DSM, Hydro Upgrades, Sec. & AC Purchases, Wind, CCCT
	High Gas & Secondary Prices	No	\$3,682	4.88¢	Hydro Upgrades, Sec. & AC Purchases, Wind, CCCT
	High Gas & Secondary Prices	Yes	\$3,661	4.93¢	DSM, Hydro Upgrades, Sec. & AC Purchases, Wind, CCCT
Low	Reference Case	No	\$3,356	5.05¢	Sec. Purchases
	Reference Case	Yes	\$3,361	5.14¢	DSM

**Notes:** DSM - market potential DSM of 42.5 aMW in the residential and commercial sectors  
 Sec. Purchases - spot market nonfirm purchases up to 50 aMW  
 AC Purchases - firm purchases at Washington Avoided Cost rates  
 Hydro Upgrades - Cabinet Gorge units 2,3 and 4, Noxon units 1 and 3  
 Wind - wind resource in 10 aMW increments up to 50 aMW  
 CCCT - combined cycle combustion turbine units of 50 aMW up to 500 aMW

**Table 4I**  
**Summary of Resource Scenarios**

# Glossary of Terms, Abbreviations & Acronyms

## Appendix K

### Glossary of Terms

**Average Megawatt (aMW)**

A measure of the average rate of energy delivered. One aMW equals 8,760,000 kWh per year.

**Avoided Costs**

Costs determined by a public utility commission process that are intended to represent the costs a utility would otherwise incur to generate or purchase power if not acquired from another source.

**B.C. Hydro**

British Columbia Hydro and Power Authority.

**Base Loaded**

A resource which operates more efficiently without being cycled to meet daily load changes.

**BPA**

Bonneville Power Administration, the federal power marketing agency for the Pacific Northwest.

**Capacity**

The maximum load a generator, power plant, or power system can produce or carry under specified conditions.

**Capacity Constrained**

A condition where a system adds resources for capacity needs rather than energy needs.

**Capital Costs**

Cost of investment in a new resource, installed \$ per kW.

**CF (Capacity Factor)**

The percentage of a resource's maximum generation capacity that is actually used.

**Cogeneration**

The sequential production of electricity and useful thermal energy.

**CO<sub>2</sub> (Carbon Dioxide)**

An emission from fossil fuel burning.

**CPUC**

California Public Utilities Commission.

**CT (Combustion turbine)**

Generation facility that burns natural gas to produce electricity.

**Conservation**

Reducing electrical consumption with measures that increase the energy efficiency of appliances, motors, building shells, etc.

**Critical Period**

The historical period of water conditions during which the region's hydro power system would generate the least amount of energy while drafting storage reservoirs from full to empty.

**Data Resources Inc. (DRI)**

WWP's national economic forecasting contractor.

**Demand**

The instantaneous rate at which electric energy is delivered to or used by a system.

**Demand-Side Management (DSM)**

The activity of acquiring demand-side resources.

**Demand-Side Resources**

Resources that can be added to a utility system to reduce customer electric usage, or control the timing or shaping of such usage.

**DIG**

Demand-Side Issues Group.

**Dispatchability**

The ability to operate or not operate a resource for economic reasons.

**DSI**

Direct Service Industries (certain industrial customers of BPA).

**Electrical Energy**

The amount of electrical usage or output average over a specified period, e.g. kWh.

**Energy Policy Act (EPAAct)**

House Referendum #776 passed in 1992, encouraged competition among bulk power producers.

**EMF**

Invisible lines of electric and magnetic fields surrounding an electric conductor, commonly referred to as Electro-Magnetic Fields.

**EWG**

Exempt Wholesale Generator (of electricity). They are exempt from certain regulations which traditional utilities must follow.

**End-Use**

The final use of electricity by customers (e.g. lighting, cooking, etc.).

**Environmental Externalities**

Environmental effects, including environmental benefits, that are not directly reflected in the cost of electricity.

**Existing Resources**

Those resources that are currently in use, or being developed under contract but not yet in operation.

**FERC**

Federal Energy Regulatory Commission.

**Firm Load**

Customer load served by a utility without a contractual provision for curtailment.

**Fixed Costs**

Costs that do not vary in relation to change in plant output.

**Fossil Fuels**

Coal, oil, natural gas and other fuels deriving from fossilized geologic deposits.

**Fuel Efficiency**

Utilizing fuels in applications that produce the greatest end-use efficiency (e.g. conversion of electric space and water heating to natural gas).

**Fuel Mix**

The make-up of resources used to serve load by fuel type.

**GWh**

1 gigawatt-hour = 1 million kilowatt-hours.

**Inland Northwest**

The area of eastern Washington, northern Idaho and western Montana.

**Appendix K****Glossary of  
Terms  
(continued)****IOU**

Investor-Owned Utility.

**IPPs**

Independent Power Producers.

**IPUC**

Idaho Public Utilities Commission.

**IRP**

Integrated Resource Plan or integrated resource planning.

**kW**

1 kilowatt = 1000 watts.

**kWh**

1 kilowatt-hour = 1000 watt-hours.

**Levelized Cost**

The present value of a cost stream converted into a stream of equal annual payments.

**Load Forecast**

The predicted demand for electric power for planning purposes.

**Lost Opportunities**

Resources, which if not acquired or developed within a certain time, could be lost.

**MCS**

Model Conservation Standards.

**Mill/kWh**

One mill equals one-tenth of a cent. Frequently used as a monetary measure when referring to the cost of producing or conserving electricity.

**Monte Carlo Simulation**

Monte Carlo refers to the traditional method of sampling random variables in simulation modeling. Samples are chosen randomly across the range of the distribution.

**MW**

1 megawatt = 1000 kilowatts.

**MWh**

1 megawatt-hour = 1000 kilowatt-hours.

**Net System Load**

The total load of a system, including both firm and interruptible, within a utilities service area.

**Nominal**

Rates or costs that include the effects of inflation.

**Nonfirm Interruptible Load**

Load which can be curtailed in response to a system emergency.

**Nonfirm/Secondary Energy**

Electric energy having limited or no assured availability.

**Nonutility Generation**

Generation by producers other than electric utilities.

**NWPP**

Northwest Power Pool, an organization of electrical utilities.

**NWPPC**

Northwest Power Planning Council. A federally chartered council comprising Idaho, Oregon, Montana and Washington that establishes policy on Northwest electrical energy, fish and wildlife issues.



**O&M**

Operation and Maintenance Costs.

**Pacific Northwest Coordination Agreement (PNCA)**

An agreement signed in 1964 by the federal government and Northwest utilities to agree to operate generating projects as a single entity to make optimum use of the water and storage resources in the region.

**Peak**

The greatest amount of demand occurring during a specified period of time.

**PNUCC**

Pacific Northwest Utilities Conference Committee.

**Present Value**

The worth of future returns or costs in terms of their value now.

**PUHCA**

Public Utility Holding Company Act.

**PURPA**

Public Utility Regulatory Policies Act

**QFs**

Qualifying Facilities under PURPA (co-generation and small power production facilities).

**Real**

Costs or rates that are corrected for the effects of inflation.

**Redesign or Reengineering**

Process corporations utilize to eliminate non-value added work and handoffs.

**Regional Transmission Group (RTG)**

New forum for energy service providers within a specific geographic area to agree on operating parameters and resolve issues.

**Reliability**

A measurement of the availability over a defined period regarding the delivery of power to a customer.

**Renewable Resource**

Resources such as wind, solar, hydro, etc., in which their availability is not limited by use.

**Resource Clearinghouse**

WWP's internal employee group responsible for overall integration of resource acquisition activities.

**Resources West Energy (RWE)**

Proposed name of new company to be created when WWP and Sierra Pacific merge.

**Retail Wheeling**

An alternative to traditional energy service where customers are able to choose any electric provider they want.

**Seasonal Output**

Electrical output from a resource which varies in amount according to the season.

**Sierra Pacific Power Company**

WWP's merger partner headquartered in Reno, Nevada.

**Supply-Side Resources**

Resources that generate an electrical output into the utility system.

**TAC**

Technical Advisory Committee.

**Tariff**

A schedule filed by a utility with a regulatory agency describing transactions between the utility and customers in terms of type of service, conditions of service, rates charged and means of payment.

**Appendix K****Glossary of  
Terms  
(continued)****Tariff Rider**

A separate schedule of rates, in addition to general tariff, intended to collect payment for specific programs or services such as DSM.

**Transmission Availability**

Transmission capability between electric utilities available to deliver or receive power .

**Variable Costs**

Costs that vary in direct proportion with plant output.

**Watt**

A basic unit of electric power equal to 0.00134 horsepower.

**Weatherization**

A process of making buildings more energy efficient such as the Home Insulation Program.

**Wheeling**

The use of one utility system's transmission facilities to transmit power of and for another system.

**WNP**

Washington Public Power Supply System Nuclear Project.

**WSCC**

Western System Coordinating Council.

**WUTC**

Washington Utilities and Transportation Commission.

**WWP**

The Washington Water Power Company.

**For further information or additional copies of this IRP report, please contact:**

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Doug graduated from the University of Idaho in 1965 with a Bachelor of Science Degree in Electrical Engineering. In December 1967 he was employed by WWP as an assistant electrical engineer, with responsibilities in load and resource projections of the company. In 1974 he received an advancement to Power Resource Engineer and became involved with coordination of utility operation under the Pacific Northwest Coordination Agreement, and with the development and publication of company and regional publications of long-range load and resource planning. He was promoted to Supervisor of Planning and Contracts in 1982, and in 1988 received his present title of Contracts and Resource Administrator.

# WASHINGTON WATER POWER COMPANY

SCENARIO - REFERENCE CASE		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - Expected											
Fuel Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Cedarap		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kendall Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	905	930	948
NEW RESOURCES											
Rathdrum SCT		0	82	82	82	82	82	82	82	82	82
COCT		0	0	0	0	0	0	0	0	0	0
Rat Conservation		0	0	0	0	0	0	0	0	0	0
Cum Conservation		0	0	0	0	0	0	0	0	0	0
Cabinnet 2		0	0	0	0	0	0	0	0	0	0
Cabinnet 3		0	0	0	0	0	0	0	0	0	0
Cabinnet 4		0	0	0	0	0	0	0	0	0	0
Nason 1		0	0	0	0	0	0	0	0	0	0
Nason 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/s)		0	0	0	0	0	0	0	0	0	0
WA RPP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)		0	82	82	82	82	82	82	82	82	82
FIRM ENERGY RESOURCE BALANCE (MWs)		72	31	35	38	72	58	30	35	52	62
MWs SOLD		7,629,960	7,933,056	7,997,004	8,062,704	8,136,288	8,210,748	8,275,918	8,341,146	8,415,192	8,480,538
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,472									
AVG GROWTH/YR: REV REQMENTS (nominal)		2.07%									
AVG GROWTH/YR: RATES (NOMINAL)		1.08%									
LEVELIZED NOMINAL RATES (nom/kWh)		4.89¢									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)		\$1,443									

# WASHINGTON WATER POWER COMPANY

SCENARIO - REFERENCE CASE		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - Expected											
Fuel Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MW <sub>a</sub> )											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Columbia		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		936	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	0	0	0	0	0	0	0	0	0
Com Conservation		0	0	0	0	0	0	0	0	0	0
Cabinet 2		0	0	0	0	0	0	0	0	0	0
Cabinet 3		0	0	0	0	0	0	0	0	0	0
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Norton 1		0	0	0	0	0	0	0	0	0	0
Norton 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W <sub>a</sub> )		0	0	0	0	0	0	0	0	0	0
W/A RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MW <sub>a</sub> )		82	82	82	82	86	98	136	148	170	181
FIRM ENERGY RESOURCE BALANCE (MW <sub>a</sub> )		62	44	14	5	0	0	1	0	0	0
MW <sub>h</sub> SOLD		8,554,704	8,628,932	8,703,222	8,777,575	8,860,752	8,936,474	9,001,022	9,084,397	9,167,840	9,260,112
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMENTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (nominal/W <sub>h</sub> )											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - DSM CASE		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
All DSM, Hydro Upgrades, Short-term Purchase											
ASSUMPTIONS											
Loads - Expected											
Fuel Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWa)											
EXISTING RESOURCES											
Columbia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kootenai Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	905	930	948
NEW RESOURCES											
Rethelium SCT		0	82	82	82	82	82	82	82	82	82
COCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	1	1	2	3	3	4	5	5	6
Com Conservation		0	2	3	5	6	8	9	11	13	14
Cabinet 2		0	0	0	0	0	0	0	0	0	0
Cabinet 3		0	0	0	0	0	0	0	0	0	0
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Norton 1		0	0	0	0	0	0	0	0	0	0
Norton 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/a)		0	0	0	0	0	0	0	0	0	0
W/A RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWa)		0	84	86	89	91	93	95	98	100	102
FIRM ENERGY RESOURCE BALANCE (MWa)		72	33	40	65	81	69	43	51	70	82
MWa SOLD		7,629,960	7,913,461	7,957,815	8,003,920	8,057,909	8,112,774	8,158,350	8,203,983	8,258,434	8,304,185
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,470									
AVG GROWTH/YR: REV REQMENTS (nominal)		1.94%									
AVG GROWTH/YR: RATES (NOMINAL)		1.17%									
LEVELIZED NOMINAL RATES (cents/kWh)		4.97¢									
LEVELIZED AVERAGE RETAIL: CUSTOMER BILL (\$/YR)		\$1,442									

# WASHINGTON WATER POWER COMPANY

SCENARIO - DSM CASE		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All DSM, Hydro Upgrades, Short-term Purchase											
ASSUMPTIONS											
Loads - Expected											
Fuel Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MW <sub>e</sub> )											
EXISTING RESOURCES											
Controlle		177	177	177	177	177	177	177	177	177	177
Collecip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		956	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
OCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		7	7	8	9	9	10	11	11	12	13
Conn Conservation		16	17	19	20	22	24	25	27	28	30
Cabinet 2		0	0	0	0	0	0	0	0	0	1
Cabinet 3		0	0	0	0	0	0	0	0	0	2
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Naton 1		0	0	0	0	0	0	0	0	0	2
Naton 3		0	0	0	0	0	0	0	0	0	2
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W <sub>e</sub> )		0	0	0	0	0	0	0	0	0	0
WA RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	17	28	48	50
CUMULATIVE NEW RESOURCES (MW <sub>e</sub> )		104	107	109	111	113	116	135	148	170	181
FIRM ENERGY RESOURCE BALANCE (MW <sub>e</sub> )		84	69	41	34	27	18	0	0	0	0
MW <sub>e</sub> SOLD		8,558,757	8,413,390	8,468,085	8,522,843	8,586,425	8,632,533	8,687,506	8,751,286	8,815,135	8,887,812
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQOMTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH GAS & SECONDARY PRICE CASE No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - High											
Secondary Power Cost - High											
NET CAPACITY ON-LINE (MW <sub>e</sub> )											
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
EXISTING RESOURCES											
Columbia	177	177	177	177	177	177	177	177	177	177	
Columbia	173	173	173	173	173	173	173	173	173	173	
Hydro	323	323	323	323	323	323	323	323	323	323	
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54	
Kettle Falls	44	44	44	44	44	44	44	44	44	44	
Existing Net Contracts	173	84	96	126	148	143	160	135	160	178	
SUM	943	854	866	896	918	913	892	903	930	948	
NEW RESOURCES											
Redmond SCT	0	82	82	82	82	82	82	82	82	82	
COCT	0	0	0	0	0	0	0	0	0	0	
Res Conservation	0	0	0	0	0	0	0	0	0	0	
Cons Conservation	0	0	0	0	0	0	0	0	0	0	
Cabinet 2	0	0	0	0	0	0	0	0	0	0	
Cabinet 3	0	0	0	0	0	0	0	0	0	0	
Cabinet 4	0	0	0	0	0	0	0	0	0	0	
Norton 1	0	0	0	0	0	0	0	0	0	0	
Norton 3	0	0	0	0	0	0	0	0	0	0	
Wind	0	0	0	0	0	0	0	0	0	0	
NR PURCH	0	0	0	0	0	0	0	0	0	0	
Avoided Cost (W <sub>e</sub> )	0	0	0	0	0	0	0	0	0	0	
W/A RPP	0	0	0	0	0	0	0	0	0	0	
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0	
Short-Term Purchase	0	0	0	0	0	0	0	0	0	0	
CUMULATIVE NEW RESOURCES (MW <sub>e</sub> )	0	82	82	82	82	82	82	82	82	82	
FIRM ENERGY RESOURCE BALANCE (MW <sub>e</sub> )	72	31	35	58	72	58	30	35	52	62	
MW <sub>e</sub> SOLD	7,629,960	7,933,056	7,997,004	8,062,704	8,136,288	8,210,748	8,275,918	8,341,146	8,415,192	8,480,538	
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	\$3,489										
AVG GROWTH/YR: REV REQMTS (nominal)	2.16%										
AVG GROWTH/YR: RATES (NOMINAL)	1.17%										
LEVELIZED NOMINAL RATES (cents/kWh)	4.92¢										
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	\$1,450										



# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH GAS & SECONDARY PRICE CASE											
No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - High											
Secondary Power Cost - High											
NET CAPACITY ON-LINE (MWs)											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
EXISTING RESOURCES											
Centralia	177	177	177	177	177	177	177	177	177	177	177
Colstrip	173	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	186	177	155	155	155	151	122	119	106	106	106
SUM	956	947	925	925	925	921	892	889	876	876	876
NEW RESOURCES											
Radium SCT	82	82	82	82	82	82	82	82	82	82	82
COCT	0	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	0	0	0	0	0	0	0	0	0	0
Corn Conservation	0	0	0	0	0	0	0	0	0	0	0
Cabinet 2	0	0	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	0	0	0	0	0
Cabinet 4	0	0	0	0	0	0	0	0	0	0	0
Norton 1	0	0	0	0	0	0	0	0	0	0	0
Norton 3	0	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)	0	0	0	0	0	0	0	0	0	0	0
WA RFP	0	0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0	0
Short-Term Purchases	0	0	0	0	4	16	50	50	50	50	50
CUMULATIVE NEW RESOURCES (MWs)	82	82	82	82	86	98	136	148	170	181	181
FIRM ENERGY RESOURCE BALANCE (MWs)											
	62	44	14	5	0	0	1	0	0	0	0
MWts SOLD	8,254,704	8,628,932	8,705,222	8,777,575	8,860,752	8,926,474	9,001,022	9,084,397	9,167,840	9,260,112	9,260,112
NOMINAL NPV REVENUE REQUIREMENTS (\$400,000)											
AVG GROWTH/YR: REV REQMTS (nominal)											
AVG GROWTH/YR: RATES (nominal)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH GAS & SECONDARY PRICES		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
All DSM, Hydro Upgrades, Secondary Purchases											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Calaver		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	905	930	948
NEW RESOURCES											
Radisson SCT		0	82	82	82	82	82	82	82	82	82
OCCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	1	1	2	3	3	4	5	5	6
Com Conservation		0	2	3	5	6	8	9	11	13	14
Cabinet 2		0	0	0	0	0	0	0	0	0	0
Cabinet 3		0	0	0	0	0	0	0	0	0	0
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Norton 1		0	0	0	0	0	0	0	0	0	0
Norton 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/s)		0	0	0	0	0	0	0	0	0	0
WA RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)		0	84	86	89	91	93	95	98	100	102
FIRM ENERGY RESOURCE BALANCE (MWs)		72	33	40	65	81	69	43	51	70	82
MWHs SOLD		7,629,960	7,913,461	7,957,815	8,003,920	8,057,909	8,112,774	8,158,350	8,203,983	8,258,434	8,304,185
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,481									
AVG GROWTH/YR: REV REQMENTS (nominal)		2.04%									
AVG GROWTH/YR: RATES (NOMINAL)		1.26%									
LEVELIZED NOMINAL RATES (cents/kWh)		4.98¢									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)		\$1,447									

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH GAS & SECONDARY PRICES		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All DSM, Hydro Upgrades, Secondary Purchases											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NB Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		956	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		7	7	8	9	9	10	11	11	12	13
Com Conservation		16	17	19	20	22	24	25	27	28	30
Cabaret 2		0	0	0	0	0	0	0	0	0	1
Cabaret 3		0	0	0	0	0	0	0	0	0	2
Cabaret 4		0	0	0	0	0	0	0	0	0	0
Nexcon 1		0	0	0	0	0	0	0	0	0	2
Nexcon 3		0	0	0	0	0	0	0	0	0	2
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH											
Avoided Cost (W/s)		0	0	0	0	0	0	0	0	0	0
W/A RPP		0	0	0	0	0	0	0	0	0	0
Mid-Cst. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	17	28	48	50
CUMULATIVE NEW RESOURCES (MWs)		104	107	109	111	113	116	135	148	170	181
FIRM ENERGY RESOURCE BALANCE (MWs)		84	69	41	34	27	18	0	0	0	0
MWs SOLD		8,358,757	8,413,390	8,468,085	8,522,843	8,586,425	8,632,553	8,687,506	8,751,286	8,815,135	8,887,812
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMENTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - NO 50 MW PLANNING RULE		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
No DSM, Hydro Upgrades, Wind, COCT											
Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWa)											
EXISTING RESOURCES											
Columbia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Burling Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	905	930	948
NEW RESOURCES											
Rathdrum SCT		0	82	82	82	82	82	82	82	82	82
COCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	0	0	0	0	0	0	0	0	0
Com Conservation		0	0	0	0	0	0	0	0	0	0
Cabint 2		0	0	0	0	0	0	0	0	0	0
Cabint 3		0	0	0	0	0	0	0	0	0	0
Cabint 4		0	0	0	0	0	0	0	0	0	0
Norton 1		0	0	0	0	0	0	0	0	0	0
Norton 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)		0	0	0	0	0	0	0	0	0	0
WA RPP		0	0	0	0	0	0	0	0	0	0
Mid-Cst. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWa)		0	82	82	82	82	82	82	82	82	82
FIRM ENERGY RESOURCE BALANCE (MWa)		72	31	35	58	72	58	30	35	52	62
MWa SOLD		7,629,960	7,933,056	7,997,004	8,062,704	8,136,288	8,210,748	8,275,918	8,341,146	8,415,192	8,480,538
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,508									
AVG GROWTH/YR: REV REQMTS (nominal)		2.39%									
AVG GROWTH/YR: RATES (NOMINAL)		1.40%									
LEVELIZED NOMINAL RATES (cents/kWh)		4.94¢									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)		\$1,457									

# WASHINGTON WATER POWER COMPANY

SCENARIO - NO 50 MW PLANNING RULE		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
No DSM, Hydro Upgrades, Wind, CCCT											
Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		956	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Bathrum SCT		82	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	0	0	0	0	0	0	0	0	0
Cons Conservation		0	0	0	0	0	0	0	0	0	0
Cabinet 2		0	0	0	0	0	1	1	1	1	1
Cabinet 3		0	0	0	0	0	2	2	2	2	2
Cabinet 4		0	0	0	0	0	1	1	1	1	1
Nixon 1		0	0	0	0	0	2	2	2	2	2
Nixon 3		0	0	0	0	0	2	2	2	2	2
Wind		0	0	0	0	0	10	50	50	50	50
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/s)		0	0	0	0	0	0	0	9	0	0
WA RPP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)		82	82	82	82	86	99	139	148	189	189
FIRM ENERGY RESOURCE BALANCE (MWs)		62	44	14	5	0	1	4	0	19	8
MWs SOLD		8,554,704	8,628,932	8,703,222	8,777,575	8,860,752	8,926,474	9,001,022	9,084,397	9,167,840	9,260,112
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - NO 50 MW PLANNING RULE		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
All DSM, Hydro Upgrades, Wind											
Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Cedarrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	905	930	948
NEW RESOURCES											
Rathdrum SCT		0	82	82	82	82	82	82	82	82	82
OCCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	1	1	2	3	3	4	5	5	6
Com Conservation		0	2	3	5	6	8	9	11	13	14
Cabaret 2		0	0	0	0	0	0	0	0	0	0
Cabaret 3		0	0	0	0	0	0	0	0	0	0
Cabaret 4		0	0	0	0	0	0	0	0	0	0
Nexcon 1		0	0	0	0	0	0	0	0	0	0
Nexcon 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/s)		0	0	0	0	0	0	0	0	0	0
W/A RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)		0	84	86	89	91	93	95	98	100	102
FIRM ENERGY RESOURCE BALANCE (MWs)		72	33	40	65	81	69	43	51	70	82
MWs SOLD		7,629,960	7,913,461	7,957,815	8,003,920	8,057,909	8,112,774	8,158,350	8,203,983	8,258,434	8,304,185
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,491									
AVG GROWTH/YR: REV REQMTS (nominal)		2.34%									
AVG GROWTH/YR: RATES (NOMINAL)		1.56%									
LEVELIZED NOMINAL RATES (nom/MWh)		5.00%									
LEVELIZED AVERAGE RETAIL: CUSTOMER BILL (\$/YR)		\$1,451									

# WASHINGTON WATER POWER COMPANY

SCENARIO - NO 50 MW PLANNING RULE		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All DSM, Hydro Upgrades, Wind											
Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MW <sub>e</sub> )											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Columbia		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		936	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		7	7	8	9	9	10	11	11	12	13
Corm Conservation		16	17	19	20	22	24	25	27	28	30
Cabinet 2		0	0	0	0	0	0	1	1	1	1
Cabinet 3		0	0	0	0	0	0	2	2	2	2
Cabinet 4		0	0	0	0	0	0	1	1	1	1
Nexcon 1		0	0	0	0	0	0	2	2	2	2
Nexcon 3		0	0	0	0	0	0	2	2	2	2
Wind		0	0	0	0	0	0	10	20	40	50
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W <sub>e</sub> )		0	0	0	0	0	0	1	1	1	0
W/A RPP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MW <sub>e</sub> )		104	107	109	111	113	116	135	148	170	181
FIRM ENERGY RESOURCE BALANCE (MW <sub>e</sub> )		84	69	41	34	27	18	0	0	0	1
MW <sub>e</sub> SOLD		8,358,757	8,413,390	8,468,085	8,522,843	8,586,425	8,652,553	8,687,506	8,751,286	8,815,135	8,887,812
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMENTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (nominal/W <sub>e</sub> )											
LEVELIZED AVERAGE RETAIL, CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - RETIRE CENTRALIA IN 2003										
No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases										
CCCT, Wind										
ASSUMPTIONS										
Loads - Expected										
Gas Cost - Expected										
Secondary Power Cost - Expected										
NET CAPACITY ON-LINE (MWs)										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EXISTING RESOURCES										
Centralia	177	177	177	177	177	177	177	177	177	0
Cedarap	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	84	96	126	148	143	122	135	160	178
SUM	943	854	866	896	918	913	892	905	930	772
NEW RESOURCES										
Rathdrum SCT	0	82	82	82	82	82	82	82	82	82
CCCT	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	0	0	0	0	0	0	0	0	0
Cam Conservation	0	0	0	0	0	0	0	0	0	0
Cabinnet 2	0	0	0	0	0	0	0	0	0	1
Cabinnet 3	0	0	0	0	0	0	0	0	0	2
Cabinnet 4	0	0	0	0	0	0	0	0	0	1
Norton 1	0	0	0	0	0	0	0	0	0	2
Norton 3	0	0	0	0	0	0	0	0	0	2
Wind	0	0	0	0	0	0	0	0	0	50
NR PURCH	0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)	0	0	0	0	0	0	0	0	0	0
WA RFP	0	0	0	0	0	0	0	0	0	0
Mid-Cd. Extension	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0	50
CUMULATIVE NEW RESOURCES (MWs)	0	82	82	82	82	82	82	82	82	197
FIRM ENERGY RESOURCE BALANCE (MWs)										
	72	31	35	38	72	38	30	35	52	0
MWHS SOLD										
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	7,629,960	7,933,036	7,997,004	8,062,704	8,136,288	8,210,748	8,273,918	8,341,146	8,415,192	8,480,538
AVG GROWTH/YR. REV REQMENTS (nominal)	\$3,675									
AVG GROWTH/YR. RATES (NOMINAL)	2.82%									
LEVELIZED NOMINAL RATES (cents/WWh)	1.82%									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	5.16¢									
	\$1,523									



# WASHINGTON WATER POWER COMPANY

SCENARIO - RETIRE CENTRALIA IN 2003										
No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases										
CCCT, Wind										
ASSUMPTIONS										
Loads - Expected										
Gas Cost - Expected										
Secondary Power Cost - Expected										
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
NET CAPACITY ON-LINE (MWs)										
EXISTING RESOURCES										
Centralia	0	0	0	0	0	0	0	0	0	0
Colstrip	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	186	177	155	155	155	151	122	119	106	106
SUM	780	771	749	749	749	745	716	713	700	700
NEW RESOURCES										
Rainierum SCT	82	82	82	82	82	82	82	82	82	82
CCCT	0	50	50	50	50	100	100	150	150	150
Res Conservation	0	0	0	0	0	0	0	0	0	0
Com Conservation	0	0	0	0	0	0	0	0	0	0
Cabinet 2	1	1	1	1	1	1	1	1	1	1
Cabinet 3	2	2	2	2	2	2	2	2	2	2
Cabinet 4	1	1	1	1	1	1	1	1	1	1
Norton 1	1	1	1	1	1	1	1	1	1	1
Norton 3	2	2	2	2	2	2	2	2	2	2
Wind	2	2	2	2	2	2	2	2	2	2
	50	50	50	50	50	50	50	50	50	50
NR PURCH	0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/s)	8	0	6	15	24	0	23	0	8	19
WA RPP	0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)	197	239	245	254	263	289	312	339	347	358
FIRM ENERGY RESOURCE BALANCE (MWs)										
	0	24	0	0	0	14	0	14	0	0
MWh SOLD	8,554,704	8,628,932	8,703,222	8,777,575	8,860,752	8,926,474	9,001,022	9,084,397	9,167,840	9,260,112
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)										
AVG GROWTH/YR: REV REQMENTS (nominal)										
AVG GROWTH/YR: RATES (NOMINAL)										
LEVELIZED NOMINAL RATES (cents/kWh)										
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)										

# WASHINGTON WATER POWER COMPANY

SCENARIO - RETIRE CENTRALIA IN 2003		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
All DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
Wind, COCT											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	0
Colstrip		173	173	173	173	173	173	173	173	173	0
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	905	930	772
NEW RESOURCES											
Rathdrum SCT		0	82	82	82	82	82	82	82	82	82
COCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	1	1	2	3	3	4	5	5	6
Carn Conservation		0	2	3	5	6	8	9	11	13	14
Cabint 2		0	0	0	0	0	0	0	0	0	1
Cabint 3		0	0	0	0	0	0	0	0	0	2
Cabint 4		0	0	0	0	0	0	0	0	0	1
Nexcon 1		0	0	0	0	0	0	0	0	0	2
Nexcon 3		0	0	0	0	0	0	0	0	0	2
Wind		0	0	0	0	0	0	0	0	0	40
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/a)		0	0	0	0	0	0	0	0	0	0
W/A RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	50
CUMULATIVE NEW RESOURCES (MWs)		0	84	86	89	91	93	95	98	100	199
FIRM ENERGY RESOURCE BALANCE (MWs)		72	33	40	65	81	69	43	51	70	2
MWs SOLD		7,629,960	7,913,461	7,957,815	8,003,920	8,057,909	8,112,774	8,158,350	8,203,983	8,258,434	8,304,185
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,653									
AVG GROWTH/YR: REV REQMENTS (nominal)		2.89%									
AVG GROWTH/YR: RATES (NOMINAL)		2.11%									
LEVELIZED NOMINAL RATES (cents/kWh)		5.22¢									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)		\$1,514									

# WASHINGTON WATER POWER COMPANY

SCENARIO - RETIRE CENTRALIA IN 2003										
All DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases										
Wind, COCT										
ASSUMPTIONS										
Loads - Expected										
Gas Cost - Expected										
Secondary Power Cost - Expected										
NET CAPACITY ON-LINE (MWs)										
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EXISTING RESOURCES										
Centralia	0	0	0	0	0	0	0	0	0	0
Colstrip	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	186	177	155	155	155	151	122	119	106	106
SUM	780	771	749	749	749	745	716	713	700	700
NEW RESOURCES										
Rahdrum SCT	82	82	82	82	82	82	82	82	82	82
COCT	0	0	50	50	50	50	100	100	100	150
Res Conservation	7	7	8	9	9	11	11	11	12	13
Com Conservation	16	17	19	20	22	24	25	27	28	30
Cabinet 2	1	1	1	1	1	1	1	1	1	1
Cabinet 3	2	2	2	2	2	2	2	2	2	2
Cabinet 4	1	1	1	1	1	1	1	1	1	1
Norton 1	2	2	2	2	2	2	2	2	2	2
Norton 3	2	2	2	2	2	2	2	2	2	2
Wind	40	50	50	50	50	50	50	50	50	50
NR PURCH	0	0	0	0	0	0	0	0	0	0
Avoided Cost (W <sub>s</sub> )	0	1	0	0	0	2	0	0	18	0
WA RFP	0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)	201	215	266	268	270	274	325	327	347	381
FIRM ENERGY RESOURCE BALANCE (MWs)										
	4	0	21	14	7	0	13	2	0	24
MW/s SOLD	8,358,757	8,413,390	8,468,085	8,522,843	8,586,425	8,632,553	8,687,506	8,751,286	8,815,135	8,887,812
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)										
AVG GROWTH/YR: REV REQNTS (nominal)										
AVG GROWTH/YR: RATES (NOMINAL)										
LEVELIZED NOMINAL RATES (cents/kWh)										
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)										

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOSS OF 10% OF HYDRO IN 2001										
No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases										
Wind										
ASSUMPTIONS										
Loads - Expected										
Gas Cost - Expected										
Secondary Power Cost - Expected										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
NET CAPACITY ON-LINE (MWs)										
EXISTING RESOURCES										
Centralia	177	177	177	177	177	177	177	177	177	177
Cougar	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	291	291	291
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	84	96	126	148	143	122	135	160	178
SUM	943	854	866	896	918	913	892	873	898	916
NEW RESOURCES										
Rathdrum SCT	0	82	82	82	82	82	82	82	82	82
COCT	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	0	0	0	0	0	0	0	0	0
Com Conservation	0	0	0	0	0	0	0	0	0	0
Cabinet 2	0	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	0	0	0	0
Cabinet 4	0	0	0	0	0	0	0	0	0	0
Norton 1	0	0	0	0	0	0	0	0	0	0
Norton 3	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/s)	0	0	0	0	0	0	0	0	0	0
WA RPP	0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)	0	82	82	82	82	82	82	82	82	82
FIRM ENERGY RESOURCE BALANCE (MWs)	72	31	35	58	72	58	30	3	20	30
MW/s SOLD	7,629,960	7,933,056	7,997,004	8,062,704	8,136,288	8,210,748	8,275,918	8,341,146	8,415,192	8,480,538
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	\$3,510									
AVG GROWTH/YR: REV REQ/MTS (nominal)	2.44%									
AVG GROWTH/YR: RATES (NOMINAL)	1.45%									
LEVELIZED NOMINAL RATES (cent/kWh)	4.94¢									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	\$1.458									

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOSS OF 10% OF HYDRO IN 2001 No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases												
ASSUMPTIONS												
Load - Expected												
Gas Cost - Expected												
Secondary Power Cost - Expected												
NET CAPACITY ONLINE (MWs)												
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013		
EXISTING RESOURCES												
Centralia	177	177	177	177	177	177	177	177	177	177	177	177
Colstrip	173	173	173	173	173	173	173	173	173	173	173	173
Hydro	291	291	291	291	291	291	291	291	291	291	291	291
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54	54	54
Kenite Falls	44	44	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	186	177	155	155	155	151	122	119	106	106	106	106
SUM	924	915	893	893	893	889	860	857	844	844	844	844
NEW RESOURCES												
Rathdrum SCT	82	82	82	82	82	82	82	82	82	82	82	82
CCCT	0	0	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	0	0	0	0	0	0	0	0	0	0	0
Com Conservation	0	0	0	0	0	0	0	0	0	0	0	0
Cabinet 2	0	0	0	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	1	1	1	1	1	1
Cabinet 4	0	0	0	0	0	0	2	2	2	2	2	2
Norcon 1	0	0	0	0	0	0	1	1	1	1	1	1
Norcon 3	0	0	0	0	0	0	2	2	2	2	2	2
Wind	0	0	0	0	0	0	2	2	2	2	2	2
NR PURCH	0	0	0	0	0	0	30	40	50	50	50	50
Avoided Cost (Wa)	0	0	0	0	0	0	0	0	0	0	0	0
WA RFP	0	0	0	0	0	0	0	0	13	24	24	24
Mid-Coal Extension	0	0	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)	82	82	100	109	118	130	169	180	202	213	213	213
FIRM ENERGY RESOURCE BALANCE (MWs)												
	30	12	0	0	0	0	2	0	0	0	0	0
MWts SOLD												
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	8,554,704	8,628,932	8,703,222	8,777,575	8,860,752	8,926,474	9,001,022	9,084,397	9,167,840	9,260,112	9,260,112	9,260,112
AVG GROWTH/YR: REV REQMTS (nominal)												
AVG GROWTH/YR: RATES (NOMINAL)												
LEVELIZED NOMINAL RATES (cents/kWh)												
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)												

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOSS OF 10% OF HYDRO IN 2001									
All DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases									
ASSUMPTIONS									
Wind	1994	1995	1996	1997	1998	1999	2000	2001	2002
Loads - Expected	177	177	177	177	177	177	177	177	177
Gas Cost - Expected	173	173	173	173	173	173	173	173	173
Secondary Power Cost - Expected	323	323	323	323	323	323	323	291	291
	54	54	54	54	54	54	54	54	54
	44	44	44	44	44	44	44	44	44
	173	84	96	126	148	143	122	135	160
SUM	943	854	866	896	918	913	892	873	898
NET CAPACITY ON-LINE (MW <sub>a</sub> )									
EXISTING RESOURCES									
Centralia	177	177	177	177	177	177	177	177	177
Colstrip	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	291	291
NE Combustion Turbine	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	84	96	126	148	143	122	135	160
SUM	943	854	866	896	918	913	892	873	898
NEW RESOURCES									
Rathdrum SCT	0	82	82	82	82	82	82	82	82
COCT	0	0	0	0	0	0	0	0	0
Res Conservation	0	1	1	2	3	3	4	5	6
Corn Conservation	0	2	3	5	6	8	9	11	13
Cabinet 2	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	0	0	0
Cabinet 4	0	0	0	0	0	0	0	0	0
Nexon 1	0	0	0	0	0	0	0	0	0
Nexon 3	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0
Avoided Cost (W <sub>a</sub> )	0	0	0	0	0	0	0	0	0
W/A RFP	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MW <sub>a</sub> )	0	84	86	89	91	93	95	98	100
FIRM ENERGY RESOURCE BALANCE (MW <sub>a</sub> )									
	72	33	40	65	81	69	43	19	38
MW <sub>h</sub> SOLD	7,629,960	7,913,461	7,957,815	8,003,920	8,057,909	8,112,774	8,158,350	8,203,983	8,258,434
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	\$3,488								
AVG GROWTH/YR: REV REQMENTS (nominal)	2.29%								
AVG GROWTH/YR: RATES (NOMINAL)	1.52%								
LEVELIZED NOMINAL RATES (cents/kWh)	4.99%								
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	\$1,449								

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOSS OF 10% OF HYDRO IN 2001											
All DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Load - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MW <sub>e</sub> )											
EXISTING RESOURCES											
Centralia	177	177	177	177	177	177	177	177	177	177	177
Columbia	173	173	173	173	173	173	173	173	173	173	173
Hydro	291	291	291	291	291	291	291	291	291	291	291
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	186	177	155	155	155	155	155	155	155	155	155
SUM	924	915	893	893	893	893	893	893	893	893	893
NEW RESOURCES											
Rathdrum SCT	82	82	82	82	82	82	82	82	82	82	82
CCCT	0	0	0	0	0	0	0	0	0	0	0
Res Conservation	7	7	8	9	9	9	9	9	9	9	9
Com Conservation	16	17	19	20	22	24	25	27	28	28	30
Cabinet 2	0	0	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	0	0	0	0	0
Cabinet 4	0	0	0	0	0	0	0	0	0	0	0
Norton 1	0	0	0	0	0	0	0	0	0	0	0
Norton 3	0	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0	0	0
Avoided Cost (W <sub>e</sub> )	0	0	0	0	0	0	0	0	0	0	0
W/A RFP	0	0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MW <sub>e</sub> )	104	107	109	111	118	124	130	137	144	150	157
FIRM ENERGY RESOURCE BALANCE (MW <sub>e</sub> )											
	52	37	9	2	0	0	0	0	0	0	0
MW <sub>e</sub> SOLD	8,358,757	8,413,390	8,468,085	8,522,843	8,586,425	8,632,553	8,687,506	8,751,286	8,815,135	8,887,812	8,951,135
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMENTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOSS OF CENTRALIA IN 1998		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
Wind, CCGT											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	0	0	0	0	0	0
Columbia		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbines		54	54	54	54	54	54	54	54	54	54
Korido Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	741	736	715	728	753	771
NEW RESOURCES											
Rathburn SCT		0	82	82	82	82	82	82	82	82	82
CCGT		0	0	0	0	0	0	50	50	50	50
Ren Conservation		0	0	0	0	0	0	0	0	0	0
Com Conservation		0	0	0	0	0	0	0	0	0	0
Cabinnet 2		0	0	0	0	1	1	1	1	1	1
Cabinnet 3		0	0	0	0	2	2	2	2	2	2
Cabinnet 4		0	0	0	0	1	1	1	1	1	1
Norton 1		0	0	0	0	2	2	2	2	2	2
Norton 3		0	0	0	0	2	2	2	2	2	2
Wind		0	0	0	0	50	50	50	50	50	50
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (WAs)		0	0	0	0	0	12	0	0	0	0
WA RFP		0	0	0	0	0	0	0	0	0	0
Mid-Cd. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	50	50	50	50	50	50
CUMULATIVE NEW RESOURCES (MWs)		0	82	82	82	189	201	239	239	239	239
FIRM ENERGY RESOURCE BALANCE (MWs)		72	31	35	58	1	0	9	15	32	42
MWs SOLD		7,629,960	7,933,056	7,997,004	8,062,704	8,136,288	8,210,748	8,275,918	8,341,146	8,415,192	8,480,538
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,814									
AVG GROWTH/YR: REV REQMENTS (nominal)		2.80%									
AVG GROWTH/YR: RATES (NOMINAL)		1.81%									
LEVELIZED NOMINAL RATES (cents/kWh)		5.36¢									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)		\$11.582									



# WASHINGTON WATER POWER COMPANY

SCENARIO - LOSS OF CENTRALIA IN 1998									
No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases									
Wind, CCGT									
ASSUMPTIONS									
Loads - Expected									
Gas Cost - Expected									
Secondary Power Cost - Expected									
NET CAPACITY ON-LINE (MWs)									
	2004	2005	2006	2007	2008	2009	2010	2011	2012
EXISTING RESOURCES									
Centralia	0	0	0	0	0	0	0	0	0
Colstrip	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44
Existing Net Contracts	186	177	155	155	155	151	122	119	106
SUM	779	770	748	748	748	744	715	712	699
NEW RESOURCES									
Rathdrum SCT	82	82	82	82	82	82	82	82	82
CCGT	50	50	50	50	50	100	100	150	150
Res Conservation	0	0	0	0	0	0	0	0	0
Cern Conservation	0	0	0	0	0	0	0	0	0
Cabint 2	1	1	1	1	1	1	1	1	1
Cabint 3	2	2	2	2	2	2	2	2	2
Cabint 4	1	1	1	1	1	1	1	1	1
Nexcon 1	2	2	2	2	2	2	2	2	2
Nexcon 3	2	2	2	2	2	2	2	2	2
Wind	50	50	50	50	50	50	50	50	50
NR PURCH	0	0	0	0	0	0	0	0	0
Avoided Cost (Wt)	0	0	6	15	24	0	23	0	8
WA RFP	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0
Short-Term Purchase	50	50	50	50	50	50	50	50	50
CUMULATIVE NEW RESOURCES (MWs)	239	239	245	254	263	289	312	339	347
FIRM ENERGY RESOURCE BALANCE (MWs)									
	42	24	0	0	0	14	0	14	0
MWs SOLD									
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	8,554,704	8,628,932	8,705,222	8,777,575	8,860,752	8,936,474	9,001,022	9,084,397	9,167,840
AVG GROWTH/YR: REV REQMTS (nominal)									
AVG GROWTH/YR: RATES (NOMINAL)									
LEVELIZED NOMINAL RATES (nom/MWh)									
LEVELIZED AVERAGE RETAIL: CUSTOMER BILL (\$/YR)									

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOSS OF CENTRALIA IN 1998									
All DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases									
Wind, COCT									
ASSUMPTIONS									
Losses - Expected									
Gas Cost - Expected									
Secondary Power Cost - Expected									
NET CAPACITY ON-LINE (MW <sub>e</sub> )									
EXISTING RESOURCES									
Coaltrain	177	177	177	177	177	177	177	177	177
Colstrip	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54
Kootenai Falls	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	173	173	173	173	173	173	173	173
SUM	943	854	866	741	736	715	728	753	771
NEW RESOURCES									
Redbluff SCT	0	82	82	82	82	82	82	82	82
COCT	0	0	0	0	0	0	0	0	0
Rest Conservation	0	1	1	3	3	4	5	5	6
Com Conservation	0	2	3	5	8	9	11	13	14
Cabinet 2	0	0	0	0	1	1	1	1	1
Cabinet 3	0	0	0	0	2	2	2	2	2
Cabinet 4	0	0	0	0	1	1	1	1	1
Nucem 1	0	0	0	0	2	2	2	2	2
Nucem 3	0	0	0	0	2	2	2	2	2
Wind	0	0	0	0	50	50	50	50	50
NR PURCH	0	0	0	0	0	0	0	0	0
Avoided Cost (WA)	0	0	0	0	0	0	0	0	0
WA RPP	0	0	0	0	0	0	0	0	0
Mid-Cd. Extension	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MW <sub>e</sub> )	0	84	86	89	201	252	254	257	259
FIRM ENERGY RESOURCE BALANCE (MW <sub>e</sub> )									
	72	33	40	65	0	23	31	49	62
MW <sub>e</sub> SOLD	7,629,960	7,913,461	7,957,815	8,003,920	8,057,909	8,112,774	8,203,983	8,258,434	8,304,185
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	\$3,798								
AVG GROWTH/YR: REV REQMENTS (nominal)	2.81%								
AVG GROWTH/YR: RATES (NOMINAL)	2.03%								
LEVELIZED NOMINAL RATES (nominal)	5.43¢								
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	\$1.575								

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOSS OF CENTRALIA IN 1998									
All DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases									
Wind, CCCT									
ASSUMPTIONS									
Loads - Expected									
Gas Cost - Expected									
Secondary Power Cost - Expected									
NET CAPACITY ON-LINE (MW)									
	2004	2005	2006	2007	2008	2009	2010	2011	2012
EXISTING RESOURCES									
Centralia	0	0	0	0	0	0	0	0	0
Colstrip	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44
Existing Net Contracts	186	177	155	155	155	151	122	119	106
SUM	779	770	748	748	748	744	715	712	699
NEW RESOURCES									
Rainbow SCT	82	82	82	82	82	82	82	82	82
CCCT	50	50	50	50	50	50	100	100	100
Res Conservation	7	7	8	9	9	10	11	11	12
Cons Conservation	16	17	19	20	22	24	25	27	28
Cabinet 2	1	1	1	1	1	1	1	1	1
Cabinet 3	2	2	2	2	2	2	2	2	2
Cabinet 4	1	1	1	1	1	1	1	1	1
Norcon 1	2	2	2	2	2	2	2	2	2
Norcon 3	2	2	2	2	2	2	2	2	2
Wind	50	50	50	50	50	50	50	50	50
NR PURCH	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)	0	0	0	0	0	0	0	0	0
WA RPP	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MW)	261	263	266	268	270	275	325	327	381
FIRM ENERGY RESOURCE BALANCE (MW)									
	64	49	21	14	7	0	12	2	0
MWHE SOLD									
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	8,358,757	8,413,390	8,468,085	8,522,843	8,586,425	8,632,553	8,687,506	8,751,286	8,815,135
AVG GROWTH/YR: REV REQMENTS (nominal)									
AVG GROWTH/YR: RATES (NOMINAL)									
LEVELIZED NOMINAL RATES (cents/kWh)									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)									

# WASHINGTON WATER POWER COMPANY

SCENARIO - 100MW 10 YEAR POWER SALE		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	905	930	948
NEW RESOURCES											
Rathdrum SCT		0	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	0	0	0	0	0	0	0	0	0
Com Conservation		0	0	0	0	0	0	0	0	0	0
Cabinert 2		0	0	1	1	1	1	1	1	1	1
Cabinert 3		0	0	2	2	2	2	2	2	2	2
Cabinert 4		0	0	1	1	1	1	1	1	1	1
Nexcon 1		0	0	2	2	2	2	2	2	2	2
Nexcon 3		0	0	2	2	2	2	2	2	2	2
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/s)		0	0	8	0	0	0	0	0	0	0
Wholesale Power Sale		0	0	-100	-100	-100	-100	-100	-100	-100	-100
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	50	35	22	35	50	50	41	31
CUMULATIVE NEW RESOURCES (MWs)		0	82	47	24	10	24	52	47	50	20
FIRM ENERGY RESOURCE BALANCE (MWs)		72	31	0	0	0	0	0	0	0	0
MWs SOLD		7,629,960	7,933,056	7,997,004	8,062,704	8,136,288	8,210,748	8,275,918	8,341,146	8,415,192	8,480,538
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,434									
AVG GROWTH/YR: REV REQMENTS (nominal)		2.04%									
AVG GROWTH/YR: RATES (NOMINAL)		1.06%									
LEVELIZED NOMINAL RATES (cents/kWh)		4.84¢									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)		\$1,427									

# WASHINGTON WATER POWER COMPANY

SCENARIO - 100MW 10 YEAR POWER SALE No DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
ASSUMPTIONS	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia	177	177	177	177	177	177	177	177	177	177	177
Colstrip	173	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	186	177	155	155	155	151	122	119	106	106	106
SUM	956	947	925	925	925	921	892	889	876	876	876
NEW RESOURCES											
Radium SCT	82	82	82	82	82	82	82	82	82	82	82
COCT	0	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	0	0	0	0	0	0	0	0	0	0
Com Conservation	0	0	0	0	0	0	0	0	0	0	0
Cabinet 2	1	1	1	1	1	1	1	1	1	1	1
Cabinet 3	2	2	2	2	2	2	2	2	2	2	2
Cabinet 4	1	1	1	1	1	1	1	1	1	1	1
Noxon 1	2	2	2	2	2	2	2	2	2	2	2
Noxon 3	2	2	2	2	2	2	2	2	2	2	2
Wind	0	0	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0	0	0
Avoided Cost (Ws)	0	0	0	0	0	0	0	0	0	0	0
Wholesale Power Sale	-100	-100	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	31	49	0	0	0	9	46	50	50	50	50
CUMULATIVE NEW RESOURCES (MWs)	20	38	89	89	89	98	135	148	170	170	181
FIRM ENERGY RESOURCE BALANCE (MWs)											
	0	0	21	12	3	0	0	0	0	0	0
MWts SOLD	8,554,704	8,628,932	8,703,222	8,777,575	8,860,752	8,926,474	9,001,022	9,084,397	9,167,840	9,167,840	9,260,112
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQNTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - 100MW 10 YEAR POWER SALE											
All DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWa)											
EXISTING RESOURCES											
Centralia	177	177	177	177	177	177	177	177	177	177	177
Colstrip	173	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	84	96	126	148	143	122	135	160	178	178
SUM	943	854	866	896	918	913	892	905	930	948	948
NEW RESOURCES											
Radium SCT	0	82	82	82	82	82	82	82	82	82	82
COCT	0	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	1	1	2	3	3	4	5	5	6	6
Com Conservation	0	2	3	5	6	8	9	11	13	14	14
Cabinet 2	0	0	1	1	1	1	1	1	1	1	1
Cabinet 3	0	0	2	2	2	2	2	2	2	2	2
Cabinet 4	0	0	1	1	1	1	1	1	1	1	1
Nexcon 1	0	0	2	2	2	2	2	2	2	2	2
Nexcon 3	0	0	2	2	2	2	2	2	2	2	2
Wind	0	0	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)	0	0	3	0	0	0	0	0	0	0	0
Wholesale Power Sale	0	0	-100	-100	-100	-100	-100	-100	-100	-100	-100
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	29	29	13	24	50	42	24	11	11
CUMULATIVE NEW RESOURCES (MWa)	0	84	47	24	10	24	52	47	30	20	20
FIRM ENERGY RESOURCE BALANCE (MWa)											
	72	33	0	0	0	0	0	0	0	0	0
MWtS SOLD	7,629,960	7,913,461	7,957,815	8,003,920	8,057,909	8,112,774	8,158,350	8,203,983	8,258,434	8,304,185	8,304,185
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	\$3,421										
AVG GROWTH/YR: REV REQMTS (nominal)	1.93%										
AVG GROWTH/YR: RATES (NOMINAL)	1.15%										
LEVELIZED NOMINAL RATES (cents/kWh)	4.90%										
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	\$1,422										

# WASHINGTON WATER POWER COMPANY

SCENARIO - 100MW 10 YEAR POWER SALE		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All DSM, Hydro Upgrades, Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Cannalia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NB Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		956	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		7	7	8	9	9	10	11	11	12	13
Cons Conservation		16	17	19	20	22	24	25	27	28	30
Cabinet 2		1	1	1	1	1	1	1	1	1	1
Cabinet 3		2	2	2	2	2	2	2	2	2	2
Cabinet 4		1	1	1	1	1	1	1	1	1	1
Norton 1		2	2	2	2	2	2	2	2	2	2
Norton 3		2	2	2	2	2	2	2	2	2	2
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/s)		0	0	0	0	0	0	0	0	0	0
Wholesale Power Sale		-100	-100	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchases		9	24	0	0	0	0	11	21	41	49
CUMULATIVE NEW RESOURCES (MWs)		20	36	116	118	120	122	135	148	170	181
FIRM ENERGY RESOURCE BALANCE (MWs)		0	0	48	41	34	25	0	0	0	0
MWs SOLD		8,358,757	8,413,390	8,468,085	8,522,843	8,586,425	8,632,553	8,687,506	8,751,286	8,815,135	8,887,812
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMENTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - PREFERRED PLAN		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
No DSM, Mid-Columbia Purchases, Hydro Upgrades											
Short-term Purchases											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MW <sub>e</sub> )											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Columbia		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	903	930	948
NEW RESOURCES											
Redrum SCT		0	82	82	82	82	82	82	82	82	82
COCT		0	0	0	0	0	0	0	0	0	0
Rest Conservation		0	0	0	0	0	0	0	0	0	0
Corn Conservation		0	0	0	0	0	0	0	0	0	0
Cabinet 2		0	0	0	0	0	0	0	0	0	0
Cabinet 3		0	0	0	0	0	0	0	0	0	0
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Norton 1		0	0	0	0	0	0	0	0	0	0
Norton 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W <sub>e</sub> )		0	0	0	0	0	0	0	0	0	0
WA NFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MW <sub>e</sub> )		0	82	82	82	82	82	82	82	82	82
FIRM ENERGY RESOURCE BALANCE (MW <sub>e</sub> )		72	31	35	58	72	58	30	35	52	62
MW <sub>e</sub> SOLD		7,629,960	7,933,056	7,997,004	8,062,704	8,136,288	8,210,748	8,275,918	8,341,146	8,415,192	8,480,538
NOMINAL NPV REVENUE REQUIREMENTS (\$4000,000)		\$3,468									
AVG GROWTH/YR: REV REQMENTS (nominal)		1.89%									
AVG GROWTH/YR: RATES (NOMINAL)		0.91%									
LEVELIZED NOMINAL RATES (cents/kWh)		4.89%									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)		\$1,442									



# WASHINGTON WATER POWER COMPANY

SCENARIO - PREFERRED PLAN		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
No DSM, Mid-Columbia Purchases, Hydro Upgrades											
ASSUMPTIONS											
Short-term Purchases											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWa)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		956	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	0	0	0	0	0	0	0	0	0
Corm Conservation		0	0	0	0	0	0	0	0	0	0
Cabinet 2		0	0	0	0	0	0	0	0	0	0
Cabinet 3		0	0	0	0	0	0	0	0	0	0
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Nexcon 1		0	0	0	0	0	0	0	0	0	0
Nexcon 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/a)		0	0	0	0	0	0	0	0	0	0
WA RPP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	15	15	15	15	33	33	42	42	42
Short-Term Purchase		0	0	0	0	0	0	20	24	46	50
CUMULATIVE NEW RESOURCES (MWa)		82	97	97	97	97	115	135	148	170	181
FIRM ENERGY RESOURCE BALANCE (MWa)		62	59	29	20	11	17	0	0	0	0
MWa SOLD		8,554,704	8,628,932	8,703,222	8,777,575	8,860,752	8,926,474	9,001,022	9,084,397	9,167,840	9,260,112
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - PREFERRED PLAN									
All DSM, Mid-Columbia Purchases									
ASSUMPTIONS									
Loads - Expected									
Gas Cost - Expected									
Secondary Power Cost - Expected									
NET CAPACITY ON-LINE (MWs)									
EXISTING RESOURCES									
Centralia	177	177	177	177	177	177	177	177	177
Columbia	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	173	173	173	173	173	173	173	173
SUM	943	854	866	918	913	892	905	930	948
NEW RESOURCES									
Rehderum SCT	0	82	82	82	82	82	82	82	82
COCT	0	0	0	0	0	0	0	0	0
Res Conservation	0	1	1	3	3	4	5	5	6
Com Conservation	0	2	3	6	8	9	11	13	14
Cabinet 2	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	0	0	0
Cabinet 4	0	0	0	0	0	0	0	0	0
Norton 1	0	0	0	0	0	0	0	0	0
Norton 3	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0
Avoided Cost (Wt)	0	0	0	0	0	0	0	0	0
WA RPP	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)	0	84	86	91	93	95	98	100	102
FIRM ENERGY RESOURCE BALANCE (MWs)									
	72	33	40	81	69	43	51	70	82
MWts SOLD	7,629,960	7,913,461	7,957,815	8,057,909	8,112,774	8,158,350	8,203,983	8,258,434	8,304,185
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	\$3,475								
AVG GROWTH/YR. REV REQMTS (nominal)	1.89%								
AVG GROWTH/YR. RATES (NOMINAL)	1.11%								
LEVELIZED NOMINAL RATES (cents/kWh)	4.97¢								
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	\$1,444								

# WASHINGTON WATER POWER COMPANY

SCENARIO - PREFERRED PLAN		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All DSM, Mid-Columbia Purchases											
Short-term Purchases											
ASSUMPTIONS											
Loads - Expected											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MW)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		956	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		7	7	8	9	9	10	11	11	12	13
Com Conservation		16	17	19	20	22	24	25	27	28	30
Cabinet 2		0	0	0	0	0	0	0	0	0	0
Cabinet 3		0	0	0	0	0	0	0	0	0	0
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Norton 1		0	0	0	0	0	0	0	0	0	0
Norton 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)		0	0	0	0	0	0	0	0	0	0
WA RPP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	15	15	15	15	33	33	42	42	42
Short-Term Purchase		0	0	0	0	0	0	0	0	6	14
CUMULATIVE NEW RESOURCES (MW)		104	122	124	126	128	149	151	162	170	181
FIRM ENERGY RESOURCE BALANCE (MW)		84	84	56	49	42	51	16	14	0	0
MWh SOLD		8,358,757	8,413,390	8,468,085	8,522,843	8,586,425	8,632,553	8,687,506	8,751,286	8,815,135	8,887,812
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH LOAD GROWTH		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
No DSM, Hydro Upgrades, Wind, CCCT											
Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Cedarap		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	905	930	948
NEW RESOURCES											
Rainbow SCT		0	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	0	0	0	0	0	0	0	0	0
Com Conservation		0	0	0	0	0	0	0	0	0	0
Cabinet 2		0	0	0	0	0	0	0	0	0	0
Cabinet 3		0	0	0	0	0	0	0	0	0	0
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Norton 1		0	0	0	0	0	0	0	0	0	0
Norton 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)		0	0	0	0	0	0	0	0	0	0
WA RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	29	28	15	10
CUMULATIVE NEW RESOURCES (MWs)		0	82	82	82	82	82	111	110	97	92
FIRM ENERGY RESOURCE BALANCE (MWs)		57	2	0	16	25	5	0	0	0	0
MWHs SOLD		7,761,360	8,181,840	8,304,480	8,427,120	8,541,000	8,672,400	8,786,280	8,891,400	8,996,520	9,110,400
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,652									
AVG GROWTH/YR. REV REQMTS (nominal)		2.83%									
AVG GROWTH/YR. RATES (NOMINAL)		1.38%									
LEVELIZED NOMINAL RATES (cents/kWh)		4.84¢									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)		\$1.515									

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH LOAD GROWTH		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
No DSM, Hydro Upgrades, Wind, CCCT											
Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MW <sub>a</sub> )											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		956	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	0	0	0	0	0	0	0	0	0
Com Conservation		0	0	0	0	0	0	0	0	0	0
Cabinet 2		0	0	1	1	1	1	1	1	1	1
Cabinet 3		0	0	2	2	2	2	2	2	2	2
Cabinet 4		0	0	1	1	1	1	1	1	1	1
Norcon 1		0	0	2	2	2	2	2	2	2	2
Norcon 3		0	0	2	2	2	2	2	2	2	2
Wind		0	0	10	20	40	50	50	50	50	50
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W <sub>a</sub> )		0	0	3	5	0	5	0	15	0	12
WA RPP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		14	36	50	50	50	50	50	50	50	50
CUMULATIVE NEW RESOURCES (MW <sub>a</sub> )		96	118	152	164	179	194	239	254	289	301
FIRM ENERGY RESOURCE BALANCE (MW <sub>a</sub> )											
MW <sub>th</sub> SOLD		0	0	0	0	1	0	3	0	6	0
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		9,215,520	9,329,400	9,434,520	9,539,640	9,662,280	9,767,400	9,881,280	10,012,680	10,152,840	10,310,520
AVG GROWTH/YR: REV REQMENTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH LOAD GROWTH										
All DSM, Hydro Upgrades, Wind, CCCT										
Short-term & Avoided Cost Purchases										
ASSUMPTIONS										
Loads - High										
Gas Cost - Expected										
Secondary Power Cost - Expected										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
NET CAPACITY ON-LINE (MWs)										
EXISTING RESOURCES										
Centralia	177	177	177	177	177	177	177	177	177	177
Colstrip	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	84	96	126	148	143	122	135	160	178
SUM	943	854	866	896	918	913	892	905	930	948
NEW RESOURCES										
Rathdrum SCT	0	82	82	82	82	82	82	82	82	82
CCCT	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	1	1	2	3	3	4	5	5	6
Com Conservation	0	2	3	5	6	8	9	11	13	14
Cabinet 2	0	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	0	0	0	0
Cabinet 4	0	0	0	0	0	0	0	0	0	0
Norton 1	0	0	0	0	0	0	0	0	0	0
Norton 3	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0	0
Avoided Cost (Ws)	0	0	0	0	0	0	0	0	0	0
WA RPP	0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	15	12	12	12
CUMULATIVE NEW RESOURCES (MWs)	0	84	86	89	91	93	111	110	112	114
FIRM ENERGY RESOURCE BALANCE (MWs)										
	57	5	5	23	34	17	0	0	15	22
MWs SOLD										
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	7,761,360	8,162,245	8,265,291	8,368,336	8,462,621	8,574,426	8,668,712	8,754,237	8,839,762	8,934,047
AVG GROWTH/YR: REV REQMENTS (nominal)	\$3,634									
AVG GROWTH/YR: RATES (NOMINAL)	279%									
LEVELIZED NOMINAL RATES (cents/kWh)	1.53%									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	\$1,508									

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH LOAD GROWTH		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All DSM, Hydro Upgrades, Wind, CCCT											
Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWa)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		936	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Bathurst SCT		82	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		7	7	8	9	9	10	11	11	12	13
Com Conservation		16	17	19	20	22	24	25	27	28	30
Cabinet 2		0	0	0	1	1	1	1	1	1	1
Cabinet 3		0	0	0	2	2	2	2	2	2	2
Cabinet 4		0	0	0	0	1	1	1	1	1	1
Norton 1		0	0	0	0	2	2	2	2	2	2
Norton 3		0	0	0	0	2	2	2	2	2	2
Wind		0	0	0	0	10	20	50	50	50	50
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)		0	0	0	0	0	0	0	0	0	0
WA RPP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		12	11	43	50	50	50	50	50	50	50
CUMULATIVE NEW RESOURCES (MWa)		116	118	152	164	180	194	236	277	283	301
FIRM ENERGY RESOURCE BALANCE (MWa)		21	0	0	0	2	0	0	0	0	0
MWa SOLD		9,019,573	9,113,858	9,199,383	9,284,908	9,387,954	9,473,479	9,567,764	9,679,569	9,800,135	9,938,220
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH LOAD, HIGH GAS & SEC. PRICES											
No DSM, Hydro Upgrades, Wind, CCGT											
Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - High											
Secondary Power Cost - High											
NET CAPACITY ON-LINE (MWs)											
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
EXISTING RESOURCES											
Centralia	177	177	177	177	177	177	177	177	177	177	177
Colasp	173	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	84	96	126	148	143	122	135	160	178	178
SUM	943	854	866	896	918	913	892	905	930	948	948
NEW RESOURCES											
Rathdrum SCT	0	82	82	82	82	82	82	82	82	82	82
CCGT	0	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	0	0	0	0	0	0	0	0	0	0
Com Conservation	0	0	0	0	0	0	0	0	0	0	0
Cabinet 2	0	0	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	0	0	0	0	0
Cabinet 4	0	0	0	0	0	0	0	0	0	0	0
Norton 1	0	0	0	0	0	0	0	0	0	0	0
Norton 3	0	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)	0	0	0	0	0	0	0	0	0	0	0
WA RFP	0	0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)	0	82	82	82	82	82	111	110	15	92	92
FIRM ENERGY RESOURCE BALANCE (MWs)											
	37	2	0	16	25	5	0	0	0	0	0
MW's SOLD	7,761,360	8,181,840	8,304,480	8,427,120	8,541,000	8,672,400	8,786,280	8,891,400	8,996,520	9,110,400	9,110,400
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	\$3,682										
AVG GROWTH/YR: REV REQMENTS (nominal)	2.96%										
AVG GROWTH/YR: RATES (NOMINAL)	1.50%										
LEVELIZED NOMINAL RATES (cents/kWh)	4.88¢										
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	\$1,527										



# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH LOAD, HIGH GAS & SEC. PRICES		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
No DSM, Hydro Upgrades, Wind, COCT											
Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - High											
Secondary Power Cost - High											
NET CAPACITY ON-LINE (MWa)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NB Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		936	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
COCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	0	0	0	0	0	0	0	0	0
Cons Conservation		0	0	0	0	0	0	0	0	0	0
Cabinet 2		0	0	1	1	1	1	1	1	1	1
Cabinet 3		0	0	2	2	2	2	2	2	2	2
Cabinet 4		0	0	1	1	1	1	1	1	1	1
Nexcon 1		0	0	2	2	2	2	2	2	2	2
Nexcon 3		0	0	2	2	2	2	2	2	2	2
Wind		0	0	10	20	40	50	50	50	50	50
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)		0	0	3	5	0	5	0	15	0	12
WA RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		14	36	50	50	50	50	50	50	50	50
CUMULATIVE NEW RESOURCES (MWa)		96	118	152	164	179	194	239	254	289	301
FIRM ENERGY RESOURCE BALANCE (MWa)		0	0	0	0	1	0	3	0	6	0
MWa SOLD		9,215,520	9,329,400	9,434,520	9,539,640	9,662,280	9,767,400	9,881,280	10,012,680	10,152,840	10,310,520
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQMTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL - CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH LOAD, HIGH GAS & SEC. PRICES										
All DSM, Hydro Upgrades, Wind, CCCT										
Short-term & Avoided Cost Purchases										
ASSUMPTIONS										
Loads - High										
Gas Cost - High										
Secondary Power Cost - High										
NET CAPACITY ON-LINE (MWs)										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EXISTING RESOURCES										
Centralia	177	177	177	177	177	177	177	177	177	177
Colstrip	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	84	96	126	148	143	122	135	160	178
SUM	943	854	866	896	918	913	892	905	930	948
NEW RESOURCES										
Rathdrum SCT	0	82	82	82	82	82	82	82	82	82
CCCT	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	1	1	2	3	3	4	5	5	6
Cons Conservation	0	2	3	5	6	8	9	11	13	14
Cabinet 2	0	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	0	0	0	0
Cabinet 4	0	0	0	0	0	0	0	0	0	0
Norton 1	0	0	0	0	0	0	0	0	0	0
Norton 3	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)	0	0	0	0	0	0	0	0	0	0
WA RPP	0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	15	12	12	12
CUMULATIVE NEW RESOURCES (MWs)	0	84	86	89	91	93	111	110	112	114
FIRM ENERGY RESOURCE BALANCE (MWs)										
	57	5	5	23	34	17	0	0	15	22
MWs SOLD										
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	7,761,360	8,162,245	8,265,291	8,368,336	8,462,621	8,574,426	8,668,712	8,754,237	8,839,762	8,934,047
AVG GROWTH/YR: REV REQMTS (nominal)	\$3,661									
AVG GROWTH/YR: RATES (NOMINAL)	2.89%									
LEVELIZED NOMINAL RATES (cents/kWh)	1.62%									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	4.934									
	\$1,518									

# WASHINGTON WATER POWER COMPANY

SCENARIO - HIGH LOAD, HIGH GAS & SEC. PRICES		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All DSM, Hydro Upgrades, Wind, CCGT											
Short-term & Avoided Cost Purchases											
ASSUMPTIONS											
Loads - High											
Gas Cost - High											
Secondary Power Cost - High											
NET CAPACITY ON-LINE (MW <sub>a</sub> )											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NB Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		956	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
CCGT		0	0	0	0	0	0	0	0	0	0
Res Conservation		7	7	8	9	9	10	11	11	12	13
Com Conservation		16	17	19	20	22	24	25	27	28	30
Cabinert 2		0	0	0	1	1	1	1	1	1	1
Cabinert 3		0	0	0	2	2	2	2	2	2	2
Cabinert 4		0	0	0	0	1	1	1	1	1	1
Nixon 1		0	0	0	0	2	2	2	2	2	2
Nixon 3		0	0	0	0	2	2	2	2	2	2
Wind		0	0	0	0	10	20	50	50	50	50
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (W <sub>a</sub> )		0	0	0	0	0	1	11	0	4	19
WA RPP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		12	11	43	50	50	50	50	50	50	50
CUMULATIVE NEW RESOURCES (MW <sub>a</sub> )		116	118	152	164	180	194	236	277	283	301
FIRM ENERGY RESOURCE BALANCE (MW <sub>a</sub> )		21	0	0	0	2	0	0	23	0	0
MW <sub>h</sub> SOLD		9,019,573	9,113,858	9,199,383	9,284,908	9,387,954	9,473,479	9,567,764	9,679,569	9,800,135	9,938,220
NOMINAL NPV REVENUE REQUIREMENTS (\$100,000)											
AVG GROWTH/YR: REV REQMENTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL - CUSTOMER BILL (\$/YR)											

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOW LOAD GROWTH CASE										
No DSM, Short-Term Purchases										
ASSUMPTIONS										
Loads - Low										
Gas Cost - Expected										
Secondary Power Cost - Expected										
NET CAPACITY ON-LINE (MWs)										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EXISTING RESOURCES										
Centralia	177	177	177	177	177	177	177	177	177	177
Cascap	173	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323	323
NB Combustion Turbine	54	54	54	54	44	44	44	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44	44
Existing Net Contracts	173	84	96	126	148	143	122	135	160	178
SUM	943	854	866	896	918	913	892	905	930	948
NEW RESOURCES										
Radium SCT	0	82	82	82	82	82	82	82	82	82
CCCT	0	0	0	0	0	0	0	0	0	0
Res Conservation	0	0	0	0	0	0	0	0	0	0
Corn Conservation	0	0	0	0	0	0	0	0	0	0
Cabinet 2	0	0	0	0	0	0	0	0	0	0
Cabinet 3	0	0	0	0	0	0	0	0	0	0
Cabinet 4	0	0	0	0	0	0	0	0	0	0
Norton 1	0	0	0	0	0	0	0	0	0	0
Norton 3	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0	0
Avoided Cost (W/s)	0	0	0	0	0	0	0	0	0	0
WA RPP	0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0	0
Short-Term Purchase	0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)	0	82	82	82	82	82	82	82	82	82
FIRM ENERGY RESOURCE BALANCE (MWs)										
	109	71	80	105	124	116	90	100	119	132
MWs SOLD										
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)	7,305,840	7,577,400	7,603,680	7,647,480	7,673,760	7,700,040	7,743,840	7,770,120	7,822,680	7,866,480
AVG GROWTH/YR: REV REQMTS (nominal)	\$3,356									
AVG GROWTH/YR: RATES (NOMINAL)	1.67%									
LEVELIZED NOMINAL RATES (cents/kWh)	0.91%									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)	5.05¢									
	\$1,386									

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOW LOAD GROWTH CASE									
No DSM, Short-Term Purchases									
ASSUMPTIONS									
Loads - Low									
Gas Cost - Expected									
Secondary Power Cost - Expected									
NET CAPACITY ON-LINE (MWs)									
EXISTING RESOURCES									
Centralia	177	177	177	177	177	177	177	177	177
Columbia	173	173	173	173	173	173	173	173	173
Hydro	323	323	323	323	323	323	323	323	323
NE Combustion Turbine	54	54	54	54	54	54	54	54	54
Kettle Falls	44	44	44	44	44	44	44	44	44
Existing Net Contracts	186	177	155	155	155	151	119	106	106
SUM	956	947	925	925	925	921	889	876	876
NEW RESOURCES									
Rothblum SCT	82	82	82	82	82	82	82	82	82
OCCT	0	0	0	0	0	0	0	0	0
Res Conservation	0	0	0	0	0	0	0	0	0
Cons Conservation	0	0	0	0	0	0	0	0	0
Cabinest 2	0	0	0	0	0	0	0	0	0
Cabinest 3	0	0	0	0	0	0	0	0	0
Cabinest 4	0	0	0	0	0	0	0	0	0
Norcon 1	0	0	0	0	0	0	0	0	0
Norcon 3	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0
NR PURCH	0	0	0	0	0	0	0	0	0
Avoided Cost (Wt)	0	0	0	0	0	0	0	0	0
WA RPP	0	0	0	0	0	0	0	0	0
Mid-Col. Extension	0	0	0	0	0	0	0	0	0
Short-Term Purchases	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)	82	82	82	82	82	82	82	84	93
FIRM ENERGY RESOURCE BALANCE (MWs)	132	118	88	82	82	75	65	29	0
MWHS SOLD	7,936,560	7,980,360	8,041,680	8,103,000	8,164,320	8,216,880	8,339,520	8,409,600	8,488,440
NOMINAL NPV REVENUE REQUIREMENTS (\$600,000)									
AVG GROWTH/YR: REV REQNTS (nominal)									
AVG GROWTH/YR: RATES (NOMINAL)									
LEVELIZED NOMINAL RATES (cents/kWh)									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)									

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOW LOAD GROWTH		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
All DSM											
ASSUMPTIONS											
Load - Low											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWa)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Columbia		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		173	84	96	126	148	143	122	135	160	178
SUM		943	854	866	896	918	913	892	905	930	948
NEW RESOURCES											
Rethedrum SCT		0	82	82	82	82	82	82	82	82	82
CCCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		0	1	1	2	3	3	4	5	5	6
Com Conservation		0	2	3	5	6	8	9	11	13	14
Cabinet 2		0	0	0	0	0	0	0	0	0	0
Cabinet 3		0	0	0	0	0	0	0	0	0	0
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Nexcon 1		0	0	0	0	0	0	0	0	0	0
Nexcon 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH		0	0	0	0	0	0	0	0	0	0
Avoided Cost (Wa)		0	0	0	0	0	0	0	0	0	0
WA RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWa)		0	84	86	89	91	93	95	98	100	102
FIRM ENERGY RESOURCE BALANCE (MWa)		109	74	85	112	133	128	104	116	137	153
MWs SOLD		7,305,840	7,557,805	7,564,491	7,588,696	7,595,381	7,602,066	7,626,272	7,632,957	7,665,922	7,690,127
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)		\$3,361									
AVG GROWTH/YR: REV REQMTS (nominal)		1.72%									
AVG GROWTH/YR: RATES (NOMINAL)		1.19%									
LEVELIZED NOMINAL RATES (cents/kWh)		5.14¢									
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)		\$1,398									

# WASHINGTON WATER POWER COMPANY

SCENARIO - LOW LOAD GROWTH		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All DSM											
ASSUMPTIONS											
Loads - Low											
Gas Cost - Expected											
Secondary Power Cost - Expected											
NET CAPACITY ON-LINE (MWs)											
EXISTING RESOURCES											
Centralia		177	177	177	177	177	177	177	177	177	177
Colstrip		173	173	173	173	173	173	173	173	173	173
Hydro		323	323	323	323	323	323	323	323	323	323
NE Combustion Turbine		54	54	54	54	54	54	54	54	54	54
Kettle Falls		44	44	44	44	44	44	44	44	44	44
Existing Net Contracts		186	177	155	155	155	151	122	119	106	106
SUM		956	947	925	925	925	921	892	889	876	876
NEW RESOURCES											
Rathdrum SCT		82	82	82	82	82	82	82	82	82	82
COCT		0	0	0	0	0	0	0	0	0	0
Res Conservation		7	7	8	9	9	10	11	11	12	13
Com Conservation		16	17	19	20	22	24	25	27	28	30
Cabinet 2		0	0	0	0	0	0	0	0	0	0
Cabinet 3		0	0	0	0	0	0	0	0	0	0
Cabinet 4		0	0	0	0	0	0	0	0	0	0
Norton 1		0	0	0	0	0	0	0	0	0	0
Norton 3		0	0	0	0	0	0	0	0	0	0
Wind		0	0	0	0	0	0	0	0	0	0
NR PURCH											
Avoided Cost (W/s)		0	0	0	0	0	0	0	0	0	0
WA RFP		0	0	0	0	0	0	0	0	0	0
Mid-Col. Extension		0	0	0	0	0	0	0	0	0	0
Short-Term Purchase		0	0	0	0	0	0	0	0	0	0
CUMULATIVE NEW RESOURCES (MWs)		104	107	109	111	113	116	118	120	122	125
FIRM ENERGY RESOURCE BALANCE (MWs)		155	143	116	111	107	99	65	57	39	32
MWHs SOLD		7,740,613	7,764,818	7,806,543	7,848,268	7,889,994	7,922,959	7,964,584	8,006,409	8,056,895	8,116,140
NOMINAL NPV REVENUE REQUIREMENTS (\$000,000)											
AVG GROWTH/YR: REV REQNTS (nominal)											
AVG GROWTH/YR: RATES (NOMINAL)											
LEVELIZED NOMINAL RATES (cents/kWh)											
LEVELIZED AVERAGE RETAIL CUSTOMER BILL (\$/YR)											