

# Action Plans

PSE's main objective is to pursue acquisition of both demand- and supply-side resources that will accrue long-term benefits to our customers. The short-term, two-year electric and gas plans presented in sections I and II of this chapter outline specific actions to be taken by the utility in implementing the long-range integrated resource plans discussed in this 2007 IRP. Section III reports on the efforts PSE has made to address the Action Plan items in the 2005 Least Cost Plan.

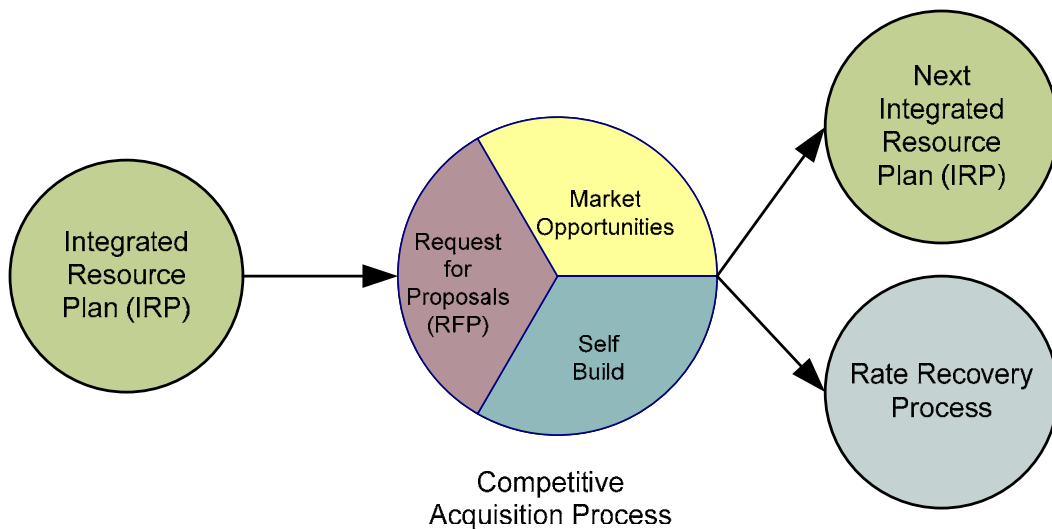
Developing the Integrated Resource Plan is an important exercise that gives PSE a structured opportunity to:

- *Think Broadly.* To consider different futures and understand implications those different futures might have on alternative resource strategies.
- *Consider Different Perspectives.* To obtain input from stakeholders that have a variety of experienced, informed perspectives about long-term energy markets, environmental issues, and other issues related to resource planning.
- *Make Reasoned Judgments.* To combine robust quantitative analysis and non-quantitative factors (reasoned qualitative analysis) into clear, well-supported conclusions that will help meet customer demands at the lowest reasonable cost.
- *Inform the Resource Acquisition Process.* To develop and refine analytical approaches and information that will assist the resource acquisition processes.
- *Communicate.* To describe the market conditions we face, and our thinking about the implications these conditions have for the resource decisions that must be made.

In some states, Integrated Resource Planning is nearly synonymous with resource acquisition analysis. In Washington state, the IRP informs the acquisition processes rather than providing a shopping list of resources to acquire. Analysis in this IRP relies on generic resources to explore strategic issues, such as the risk of coal-fired generation. Resource acquisition processes follow through with specific information about specific resources. The primary function of the IRP, beyond simply meeting regulatory requirements, is to inform our resource acquisition process.

Figure 9-1 illustrates the connection between the IRP and activity related to resource acquisitions. It shows how the IRP directly informs the formal RFP process. In Washington, the formal RFP process for demand-side and supply-side resources is just one source of information for making acquisition decisions. Market opportunities outside the RFP and self-build (or PSE demand-side resource programs) must also be considered when making prudent resource acquisition decisions. Figure 9-1 also illustrates that the acquisition process itself informs subsequent IRPs. As shown below, the IRP's primary purpose is to inform the acquisition process; it is not a substitute for the resource-specific analysis done to support specific acquisitions.

**Figure 9-1**  
**Relationship between the IRP and the Acquisition Process**



## *I. 2007 Electric Resources Action Plan*

The conclusions drawn from this Integrated Resource Plan analysis support the following actions with regard to electric resources.

### ***Demand-side Resources***

PSE will work toward significantly increasing our electric demand-side resource programs, mainly energy efficiency programs. We will work with external stakeholders in the CRAG process to develop program goals, targets, and tariff filings to implement this strategy. Such processes will rely on updated avoided cost inputs and more specific assessments of achievability based on specific programs that are designed.

### ***Wind and Other Renewables***

PSE will continue working toward meeting obligations under Washington's renewable portfolio standard. We will develop and begin implementing strategies to move deeper into the development process for renewables. Additionally, we will continue to remain active in exploring cost-effective opportunities as they appear during the formal RFP process and to other market opportunities that may present themselves.

### ***Base Load Thermal Resources***

PSE will take an opportunistic approach to filling the remaining resource needs with a combination of purchased power agreements and/or natural gas-fueled power plants. We will look to meet resource needs through the formal RFP process, seek opportunities to acquire resources through bilateral negotiations, and consider self-build natural gas alternatives. PSE will also actively monitor and participate in policy, regulatory, and technology developments affecting the viability of new coal resources.

## *II. 2007 Natural Gas Resources Action Plan*

The conclusions drawn from this Integrated Resource Plan analysis support the following actions with regard to gas resources.

### ***Gas Demand-side Resources***

PSE is looking for opportunities to increase our gas programs where it is feasible. We will work with external stakeholders in the CRAG process to develop program goals, targets, and tariff filings to acquire cost effective and achievable energy efficiency savings. Such processes will rely on updated avoided cost inputs and more specific assessments of achievability based on specific programs that are designed.

### ***Capacity Alternatives***

PSE will continue working with others in the region to identify and more fully define regional LNG peaking opportunities. We will also continue to monitor transportation capacity alternatives that are tied to potential regional LNG import facilities. Additionally, we will monitor potential pipeline alternatives that could increase supply diversity.

### ***Supply Alternatives: Imported LNG***

PSE will work with other regional market participants to help determine if an LNG import facility in the region would be commercially viable, cost effective, and otherwise desirable for the market. If so, we will take reasonable actions to help encourage and/or participate in such development to benefit our customers.

### ***Generation Fuel Planning***

Increasing reliance on natural gas-fired generation creates issues, some of which may be quite different than concerns for meeting needs of gas sales customers. PSE will define and prioritize these issues, develop plans for investigating potential solutions, and commence implementation of such solutions as appropriate. We will discuss such activity with our IRPAG members and other stakeholders to the extent that such discussions do not compromise our ability to achieve commercial benefits for our customers.

### *III. Report on 2005 Action Plan*

This section reviews the efforts PSE has made to address the Action Plan items included in the Company's 2005 Least Cost Plan. Those items are shown in bold type, subsequent PSE efforts appear below in regular type

#### ***A. Electric Resource Acquisition Activities***

Actions related to resources expected to come online between 2006 and 2011 are designated "near-term," and those related to resources expected to come online between 2012 and 2025 are designated "long-term."

##### *Energy Efficiency (Near-term)*

**Develop new electric and gas energy efficiency savings targets for 2006-2007 informed by Least Cost Plan analyses, and file new program tariffs with the Washington Utilities and Transportation Commission (WUTC) by the end of 2005.**

In our April 2005 Least Cost Plan Update, PSE presented an extensive analysis of energy efficiency savings potential and its contribution to the Company's electric portfolio. In collaboration with key external stakeholders represented by the Conservation Resource Advisory Group (CRAG) and Integrated Resource Plan Advisory Group (IRPAG), these results were used to develop energy efficiency program targets for 2006 and 2007. A two-year stretch goal for contributions of approximately 40 aMW by the end of 2007 was adopted.

**Initiate an energy efficiency resource acquisition Request for Proposal (RFP) process that complies with regulatory requirements. This RFP will address the following: 1) long lead times due to 2006-2007 targets and program commitments needing to be made before the RFP process can be completed; and 2) development of a "targeted" RFP, focused on specific markets and/or technologies that complement PSE's programs.**

In November 2005, PSE issued an "all-comers" RFP for acquisition of energy efficiency resources, consistent with 2005 Least Cost Plan findings of a short-term need for electric

energy resources (with energy efficiency included as a least-cost option), as well as with WAC 480-107 requirements. The Energy Efficiency RFP process was run in parallel with the RFPs for wind and all generation resources.

In December 2005, PSE received bids for 18 efficiency projects, of which 12 involved electric energy efficiency totaling 6.7 aMW, and two involved electric demand response programs. These bids underwent an extensive evaluation process, focusing on cost-effectiveness, technical merits, compatibility with existing PSE programs, and the risk of not delivering projects as proposed. The evaluation process was completed in March 2006, resulting in the selection of a short list of six proposed projects. The results of this evaluation process have been reviewed with the CRAG. Below is a brief summary of the status for each of the short-listed electric projects.

- *Multi-Family Comprehensive Energy Efficiency* provides weatherization, lighting, and water heating measures to multifamily complexes. The project contract was awarded to ECOS Consulting and program implementation began in August 2006.
- *Refrigerator Recycling* proposal is on hold pending further review.
- *Manufactured Home Heat Pump Replacement* project is no longer being considered due to cost effectiveness concerns.
- *Two Demand Response* programs (one residential, one commercial) will be pursued in collaboration with the CRAG, as agreed upon by PSE, WUTC staff, and other parties in PSE's 2006 General Rate Case (Docket No. UE-060266 and UG-060267)

### *Fuel Conversion (Near-term)*

**Complete evaluation of single-family and multi-family fuel choice pilots, and explore the feasibility of further developing fuel conversion programs, with input from regulators and stakeholders.**

PSE completed a pilot study of single family home fuel conversion in 2005. Evaluation of the pilot yielded favorable results for cost-effective savings for nearly all measures in the program. However, the magnitude of energy savings was not significant enough to defer investments in electrical distribution infrastructure due to capacity reduction. PSE's research into fuel conversion for existing multi-family structures found it was not cost-

effective except in some larger units on a case by case basis. However, fuel-choice for new construction may hold more promise.

### *Demand Management (Near-term)*

**Explore the feasibility of implementing one or more demand-response pilots, with input from regulators and stakeholders.**

PSE proposed four demand response pilot programs in its 2006 rate case filing and, per agreement with Commission staff and other stakeholders, agreed to withdraw these proposed pilots from the rate case filing. In the agreement demand response pilots would be pursued through the CRAG. We are currently in the process of working with the CRAG to develop appropriate pilots.

### *Green Power Program and Small-scale Renewable Generation (Near-term)*

**By the end of 2005, develop a two-year goal for the Green Power program covering the 2006-2007 period.**

The 2006 goal for the Green Power Program was to sell 120,000 MWh of green power to customers in the same year. The program exceeded the goal, selling 131,000 MWh of green power in 2006. The 2007 goal is to sell 200,000 MWh of green power to customers.

**Continue to encourage small-scale solar or other renewable energy demonstration projects.**

PSE has continued to support the installation of small-scale solar projects through net metering arrangements, a residential rebate program, and the newly implemented Renewable Energy Advantage Program (REAP). In addition, PSE continues to provide grants for small-scale renewable energy demonstration projects. Under this program, solar installations were added to the Washington State Capitol building and the Vashon Institute for Environmental Research and Education, in 2005; and Redmond High School in 2006. A project at Washington Middle School entered the planning phases in 2006.

*New Electric Resources (Near-term)*

**Initiate a competitive solicitation process for new electric energy resources by filing a draft RFP and accompanying materials with the WUTC within 90 days following submittal of this Least Cost Plan.**

PSE released a request for proposals from all generation sources in December 2005. A final short list was selected in August 2006.

In December of 2006, PSE also released an RFP for a 500 kW solar demonstration facility, which would be the largest in the Pacific Northwest. Eleven proposals from local, national and international bidders were received. A contractor was selected in March 2007. Construction of the project is expected to take place this summer, leading to substantial completion by September 2007.

We completed acquisition of 277-MW natural gas-fired combined cycle plant located in Goldendale, WA in February 2006.

We completed a lease buyout of Whitehorn Units 3 and 4 effective February 2009.

Negotiations and contractual arrangements are underway with the remaining short listed projects selected from PSE's 2005 All Source RFP solicitation.

Negotiations are underway with two renewable biomass projects.

PSE is currently looking to leverage our wind development expertise to move further up the development chain for procurement of wind assets. The goal is to pursue the most promising wind projects in the region that may be in various stages of development.

**Complete contractual arrangements and construct the Wild Horse and Hopkins Ridge wind projects.**

The Hopkins Ridge wind facility entered commercial service in November 2005 and has produced over 400,000 megawatt-hours of renewable energy for PSE's customers with a project availability of over 98%. The Wild Horse wind facility entered commercial service in December 2006 and has produced over 60,000 megawatt-hours of renewable



energy. Combined, the two projects produce approximately 125 aMW of electrical capacity.

**Implement the Colstrip turbine upgrade to increase project efficiency (PSE's share of the additional project generation is 25 aMW).**

The turbine upgrade projects have been completed on Units 1 and 4. Work on Unit 3 will occur this spring and on Unit 2 in the spring of 2008. Output on both Units 1 and 4 met the contract performance requirements and PSE is receiving about 4 MW additional output from Unit 1 and about 8 to 10 additional MW of output from Unit 4.

*New Electric Resources (Long-term)*

**Explore contract renewal discussions with expiring cogeneration projects to maintain resource availability.**

Only one of the three cogeneration projects participated in PSE's 2005 RFP solicitation. The proposed offer was determined to be commercially attractive and was ultimately selected to PSE's short list for further negotiation. PSE has been in active discussions separately with the two remaining cogeneration projects with regard to their proposed restructuring of their existing contracts. In each case, PSE's analysis has indicated that the proposed restructure contains significant commercial and regulatory risk to its customers.

**Explore feasibility, partnering opportunities, and transmission alternatives for remote-located coal-fueled and renewable generation.**

As coal has become increasingly risky, there was no need to follow-up on devoting significant resources to this effort.

**Seek opportunities for emergent technologies including biomass, geothermal, and integrated gasification combined cycle (IGCC).**

PSE is actively in negotiations with two biomass projects. Additionally, we short listed one geothermal project from our 2005 All Source RFP solicitation.

IGCC has been tabled until carbon capture and sequestration becomes viable.

## ***B. Natural Gas Resource Acquisition Activities***

### ***Energy Efficiency***

**Develop new gas energy efficiency savings targets for 2006-2007, informed by Least Cost Plan analyses, and file new program tariffs with the WUTC by the end of 2005.**

In our April 2005 Least Cost Plan Update, PSE presented an extensive analysis of energy efficiency savings potential and its contribution to the Company's electric portfolio. In collaboration with key external stakeholders represented by the Conservation Resource Advisory Group (CRAG) and Integrated Resource Plan Advisory Group (IRPAG), these results were used to develop energy efficiency program targets for 2006 and 2007. A two-year stretch goal for contributions of approximately 420,000 decatherms by the end of 2007 was adopted.

### ***New Natural Gas Resources***

**Work with Jackson Prairie co-owners to explore deliverability expansion, and work with Northwest Pipeline on related seasonal transportation.**

In response to the ongoing growth in natural gas peak day demand requirements in the region and individual requirements of the owners, the owners of Jackson Prairie Storage Project (Northwest Pipeline, Puget Sound Energy, and Avista Corporation) authorized PSE, as the Project Operator, to examine the feasibility of expanding the deliverability of the Project. PSE's analysis in the previous Least Cost Plan and in contemporaneous studies indicated that additional Jackson Prairie deliverability (combined with appropriately priced redelivery service) was the least cost resource. In June 2006, the application for Certificate of Public Convenience and Necessity was filed with FERC for the Jackson Prairie Deliverability Expansion. The Project requested authorization to increase the deliverability from 884,000 Dth per day to 1,196,000 Dth per day. In February 2007, the Project received approval from FERC. The \$43.8 million project will be developed over a two year period. PSE's share of this expansion is 104,000 Dth per day and is expected to cost \$14.6 million. Major expansion activity slated for 2007 includes drilling of five wells at approximately \$1 million each.

Northwest Pipeline (NWP) was asked to determine the availability of any additional firm pipeline capacity from the Jackson Prairie receipt point. NWP identified the availability of approximately 185,000 Dth per day north flow capacity from Jackson Prairie. After public posting of this information, PSE negotiated the acquisition of north-flow TF-1 capacity sufficient to accommodate the incremental 104,000 Dth per day of PSE's additional deliverability and to support additional Jackson Prairie capacity acquired through a release. PSE negotiated a demand charge of 60% of the maximum rate in the five winter months and full demand charge in seven summer months; zero if not used. The 110,700 Dth per day discounted capacity (commencing November 1, 2008 for a 20 year term) was posted for bid in early March 2007, in compliance with the FERC requirement. Following the closure of the auction, the capacity was awarded to PSE. As a condition of the transaction, PSE extended the primary term of selected service agreements with NWP; PSE retained the unilateral evergreen rights under these agreements.

**Investigate specific locations for possible conventional and satellite liquefied natural gas (LNG) storage facilities and refine cost estimates for these facilities.**

PSE continues to consider the use of LNG plant of any type to solve supply and/or distribution capacity shortfalls.

**Consider acquisition of delivered bridging peak-supply resources and (discounted) long-term Northwest Pipeline transportation capacity.**

PSE has recently identified a potential delivered peak supply resource (Regional LNG peaking) and has evaluated that option in this IRP.

Since the last plan, PSE has acquired for gas customers 55,000 Dth per day of long term firm transportation at a substantial discount from Duke Energy Trading & Marketing. In addition, PSE has secured an additional 45,000 Dth per day of deeply discounted long-term firm transportation for power generation. PSE has also secured 110,700 Dth per day of long-term discounted seasonal firm transportation to support the Jackson Prairie Deliverability Expansion commencing in 2008.

**Continue monitoring developments at the Sumas, Station 2 and AECO markets, and investigate upstream transportation alternatives.**

PSE has continued to participate in the gas supply markets available in the Pacific Northwest. It is generally expected that while periodic pricing conditions will favor one

producing basin, over the long-run capacity will be developed that will drive equilibrium in prices from one basin to another. PSE remains actively engaged in dialogue with pipelines, developers, and other market participants to explore additional upstream transportation options.

**Continue to monitor development and opportunities related to imported LNG in the region.**

PSE continues to monitor proposed LNG Import Terminals in the Pacific Northwest and British Columbia. There are eight facilities in the region in various stages of pre-development: 1) Kitimat LNG located in Kitimat, B.C.; 2) Bradwood Landing located in Bradwood, Oregon; 3) Jordon Cove located in Coos Bay, Oregon; 4) Port Westward located in Port St. Helens, Oregon; 5) Skipanon located in Warrenton, Oregon; 6) Gray's Harbor located in Gray's Harbor, Washington; 7) Tansy Point, located in Warrenton, Oregon; and 8) Prince Rupert, located in Prince Rupert, B.C. While some of these proposed projects have made more progress than others in PSE's view there is no clear leader. Many industry observers question whether a LNG import terminal in the Pacific Northwest will be viable. Figure 9-2 summarizes the eight proposed facilities.

**Figure 9-2**  
**Summary of Eight Proposed LNG Import Terminals**

| Project Name and Sponsors  | Location and C.O.D  | Capital Cost  | Capacity (Storage) Deliverability (Thru-put)  | LNG Supply   | Pipeline Connections  | Regulatory / Permit Status  |
|--|---|---|---|--|---|---|
| <b>Kitimat</b><br><u>Kitimat LNG</u><br>Rosemary Boulton, Pres.<br>Ilene Schmaltz, VP Mktg<br><br><b>Galveston LNG:</b><br>Alfred Sorenson, CEO  | Kitimat, BC<br><br>Q4-2010                                      | \$500 million (\$US)<br><br>(terminal)<br><br>\$1 Billion (\$US) P/L)                                   | 2 tanks x 160,000 m <sup>3</sup> = 6.8 Bcf<br><br>600 /MMcf day (nominal)<br>1.0 Bcf / day (peak) | Letter of Intent) with LNG Ltd. Of Australia for 1.8M metric ton/yr. (25% of req'd) signed Sept.2006                         | via Pacific Trails P/L to Westcoast P/L at Station 4b Summit Lake. (Pac. Trail is 50/50 partnership of Galveston LNG and Pacific Northern P/L)                      | Terminal - Fully permitted Aug.2006<br>P/L – in prelimdesign Application to BC Util.Comm expected mid 2007                |
| <b>Bradwood Landing</b><br><u>Northern Star Natural Gas LLC</u><br>W.S. (Si) Garrett, CEO<br>Paul Soanes, Pres.<br>Gary Coppedge, VP Dev.  | Bradwood, Oregon (Mile 38 on the Columbia River)<br><br>Q4-2010 | \$580 million (terminal)<br>\$150 million (pipeline)<br><br>(Secured added funding of \$100M –mid 2006) | 2 tanks x 160,000 m <sup>3</sup> = 6.8 Bcf<br><br>1.0 Bcf / day (nominal)<br>1.3 Bcf / day (peak) | Unknown (Recent affiliation with Clearwater LNG project off-shore of Oxnard, CA may provide market diversity for suppliers.) | via Bradwood Landing P/L to interconnect with NWP at Kelso, Wa, also connect to NWN-Mist Storage (and on to GTN via Palomar), and to PGE Pt. Westward/ Beaver plant | FERC Certificate Application for terminal (CP06-365) and P/L (CP06-366)– June 2006  |
| <b>Jordan Cove Energy Projects Development LLC</b><br>Bob Braddock, Proj. Mgr<br>Elliot Trepper<br>Fort Chicago<br><u>Energy Partners LP &amp; Guy Turcotte, Chrmn</u><br>Stephen H. White<br>Pres/CEO | Coos Bay, Oregon<br><br>Q4-2011                                 | \$500 million (terminal)<br><br>\$800 million (pipeline)  | 2 tanks x 160,000 m <sup>3</sup> = 6.8 Bcf<br><br>1.0 Bcf / day (nominal)<br>1.2 Bcf / day (peak) | unknown<br><br>(It is expected that the sell-out of the P/L open season will attract major suppliers, including BP)          | via Pacific Connector P/L to interconnect with NWP GrantsPass Lateral and to misc. S. Oregon LDC connects and to GTN, Tuscarora and PG&E at Malin                   | NEPA/FERC Prefiling – (PF06-25)-- April 2006<br><br>FERC Certificate Application for terminal and P/L – planned for Q2 07 |
| <b>Port Westward LNG:</b><br>Spiro Vassilopoulos   | Port St. Helens, Oregon   | \$400 – 525 million (terminal only)   | 400,000 m <sup>3</sup> (2 tanks)<br>700 MMcf/d average<br>1.25 MMcf/d peak                        | unknown  | 2 lines proposed 24-30 inch to Mist 32 inch to line from Beaver to NWP at Kelso   | NEPA/FERC Prefiling - 2006  |
| <b>Skipanon</b>  | Warrenton, Oregon (Port of                                      | \$500 million   | 2 tanks x 160,000 m <sup>3</sup> = 6.8 Bcf  | unknown  | line to NWP at Kelso  | NEPA/FERC Prefiling – expected  |

|  |                                |                |  |         |   |          |
|--|--------------------------------|----------------|--|---------|---|----------|
| <b>LNG Development Co</b><br><br><b>Peter Hansen</b><br>(formerly Calpine) | Astoria)                       |                | 1.0 Bcf / day (nominal)<br>1.2 Bcf / day (pk)  |         |   | mid 2007 |
| Gray's Harbor<br><br><b>Sempra:</b><br>Darcel Hulse                        | Gray's Harbor Washington       | unknown        | 360,000 m <sup>3</sup> (2 tanks)<br>1 Bcf/d  | unknown | 70 miles from terminal to NWP just north of Chehalis. | Unknown  |
| <b>Tansy Point</b><br><br><b>Warrenton Fiber</b>                           | Tansy Point Warrenton, Oregon  | unknown        | unknown  | unknown | unknown   | Unknown  |
| <b>Prince Rupert</b><br><br><b>Westpac LNG:</b>                            | Prince Rupert British Columbia | \$C400 million | 1 tank x 160,000 m <sup>3</sup> = 3.4 Bcf<br>300 MMcf / day (nominal)<br>500 MMcf / day (peak) | unknown | unknown   | Unknown  |

### ***C. Existing Electric Resource Activities***

**Conduct plant engineering, environmental studies, geotechnical exploration, and preliminary construction to implement the terms of the Baker Hydroelectric Project Settlement Agreement.**

The original FERC license for the Baker Hydroelectric Project expired in April 2006. We are currently operating the project under annual licenses issued by the FERC, pending issuance of a new long-term license, anticipated in 2007.

PSE continues to perform early implementation of certain Settlement Agreement conditions, including construction of new upstream and downstream fish passage facilities. Additionally, we continue to evaluate and design a powerhouse expansion for Lower Baker that will enable compliance with minimum instream flow and down-ramping requirements.

**Prepare environmental and historic resource management plans; conduct engineering for plant improvements; consult with resource agencies; and begin**

### **construction activities, all to implement the terms of the 2004 Snoqualmie Falls Hydroelectric Project license.**

Design and consultation activities toward construction of major features at the Snoqualmie Falls Hydroelectric Project continue. Such features include a new diversion dam, intakes, and upgrades to the Plant 1 and Plant 2 powerhouses.

Additionally, we are in early consultation with affected stakeholders to address a proposed minor license amendment that would modify the design of the new diversion dam for enhanced flood reduction benefits and incorporate other minor modifications as a result of continuing design and value engineering activities.

### **Continue contract renewal discussions with the Mid-Columbia PUDs.**

PSE recently executed a new 20-year agreement with PUD No. 1 of Chelan County and will begin taking deliveries upon expiration of our current Rocky Reach and Rock Island contracts in 2011 and 2012, respectively.

In 2005, we began taking delivery from PUD No. 2 of Grant County for output from its Priest Rapids Development under the terms and conditions of a new power purchase agreement executed in 2001. We will begin taking deliveries from the PUD's Wanapum Development under the terms and conditions of the 2001 agreement upon the expiration of our current Wanapum contract in late 2009.

We continue to take delivery from PUD No. 1 of Douglas County for output from its Wells Hydroelectric Project under a power purchase agreement that expires in 2018.

## ***D. Analytical and Process Improvements***

### ***Demand Forecasting***

#### **Refine the long-term geographic area energy and peak load with weather sensitivity, and other key economic factors.**

The development of population and economic forecasts by county allowed us to create county level customer counts forecasts by class, thus differentiating customer growth by

county. Annual growths in the use per customer by county and class are still the same as for the service territory, but the levels are different based on historical average ratios of use per customer for each county to the total service territory for each of the customer classes. These ratios are a function of fuel saturations, seasonal variations, weather, and mix of customer classes within each county. Peak loads thus vary by county also because of the different mix of customer classes and their energy usage.

### *Electric Resource Analytics*

#### **Explore modifications to PSE's electric portfolio analysis tool to increase flexibility.**

In the 2005 LCP we used two portfolio analysis tools, one for supply portfolios and then one to analyze demand-side resources against one selected portfolio. One improvement that was made was to integrate the modeling of demand-side resources into one model. This increased the efficiency of the process and allowed us to perform stochastic analysis of demand-side resources as well as consider them with multiple supply-side portfolios.

#### **Include appropriate consideration of imputed debt, credit requirements, and risk management in evaluating potential new resource acquisitions.**

A discussion of the way PSE considers financial issues such as imputed debt, credit requirements and risk management in evaluating potential new resource acquisitions is included Appendix F (Financial Considerations).

### *Gas Resource Analytics*

#### **Incorporate refinements to Sendout/Vector Gas to analyze fixed, banded and market priced gas supply pricing options to support development of long-term hedging strategies.**

Refinements to the Sendout/VectorGas analyses to support changes in the long-term hedging strategies were not deemed necessary because only relatively minor updates to PSE's hedging strategies were made.



**Conduct additional studies of the potential efficiency of joint LDC/generation fuel planning, including Monte Carlo analysis.**

Sendout was used to evaluate the cost-effectiveness of firm pipeline capacity to serve the newly acquired Goldendale Generating Station. These analyses included evaluation of pipeline as well as storage alternatives.

**Re-examine design day planning criteria based on updated demand forecast and resource cost assumptions.**

Review of the gas design day planning criteria was deferred, as we await review/update of the electric extreme peak hour methodology and temperature criteria. Any further review/update will be done in conjunction with further review of the electric planning standard.

### ***E. Portfolio Operations and Risk Management***

#### **Expand long-term gas-for-power risk management capability.**

In the 2006 General Rate Case, the WUTC approved the Company's acquisition of an additional line of credit dedicated specifically to augment our commodity hedging practices. For the power portfolio this will improve our ability to more actively and aggressively manage the gas for power portfolio exposure.

#### **Develop operation and analytic methods for integrating wind into PSE's electric portfolio.**

Wind projects will typically reside in either PSE's or BPA's control area. The control area operator is responsible for meeting NERC mandated reliability criteria. Projects that reside in the BPA control area are subject to BPA generation imbalance charges. The imbalance charges are derived from the difference between the forecasted hourly generation and the actual generation, and applied in a gradation format. PSE has effectively managed these imbalance charges through minimization of the forecasted and actual generation deviation primarily through utilization of state of the art forecasting technology.

PSE developed analytical models to determine the wind integration costs associated with projects in PSE's control area. As empirical data becomes available, we will analyze this information to either validate or adjust the theoretical values.

#### **Complete development and implementation of the Long-Term Energy Cost Risk Management Strategy to address the risks of both long-term power cost and long-term PGA gas cost.**

The Company has completed the research and development work necessary to implement the recommendations from the Long-Term Energy Cost Risk Management strategy. This work included a thorough bench-marking of industry best practices with respect to energy commodity hedging and a significant amount of market research of PSE's customers. The results of these analyses indicates that the industry standard for hedging strategies is currently between one and three years. With the WUTC's recent approval of a dedicated line of credit to augment both the Company's power and natural

gas hedging strategies, we are proceeding to develop a revised hedging strategy and acquire the line of credit necessary to support these.

**As part of developing the Long-Term Energy Cost Risk Management Strategy, study the value placed by PSE customers on lowering energy price volatility in retail power and gas bills.**

As part of our Long Term Energy Cost Risk Management Strategy, the Company undertook several components of market research. We completed in-person interviews, small-sample size focus groups and a web-based survey to better understand customer preferences and trade-offs of rate stability, volatility and cost. From this research we were able to ascertain that about 85% of our gas customers, and 80% of our electric customers surveyed in the focus groups prefer a three-year period of stable rates.

**Enhance and better integrate portfolio and risk management systems.**

PSE is currently in the process of implementing an integrated portfolio and risk management system.

### ***F. Policy, Regulatory, and Legislative Initiatives***

#### ***Energy Efficiency***

**Participate in 2007-2009 Bonneville Power Administration (BPA) Rate Case process to secure a fair share of BPA conservation funding for PSE and other investor-owned utilities.**

**Work to address regulatory and financial disincentives to utilities for implementing demand-side management.**

**Develop a recommended approach to address key issues related to demand-response programs, including a cost effectiveness methodology and a cost recovery mechanism.**

PSE proposed a performance incentive mechanism for Electric Energy Efficiency and a revenue decoupling mechanism for natural gas. The Commission subsequently ordered

the adoption of the Electric Energy Efficiency performance incentive mechanism, but not the gas decoupling proposal.

PSE assessed the cost effectiveness of demand response in this IRP through hourly analysis of peak demand reduction and hourly avoided costs. We performed our economic screening of resources on an hourly basis. Avoided costs of hourly resources were compared against the cost of a winter peak call option through 2012. Starting in 2013, it was valued against the cost of building a single cycle combustion turbine.

*Cost Recovery Mechanism.* As part of PSE's agreement with Commission staff and other parties to withdraw demand response from our rate case, it was agreed that we could recover the cost of demand response pilot programs through the existing conservation tariff rider. Recovery of costs for any additional programs will be determined by the Company with input from Commission staff and stakeholders prior to filing tariffs for such programs.

### *New Electric Resources*

**Participate in ongoing regional efforts to evaluate the costs and risks of transmission for new resources located outside PSE's service territory.**

BPA has begun a process, under the Regional Dialog heading, to begin the regional effort to evaluate how to get transmission constructed for economic purposes. PSE generation side is participating in both the planning discussion and the discussion on how to fund new transmission.

**Continue to participate in the development and determination of the benefits of a regional transmission organization as well as explore other opportunities to improve transmission availability and access in the region.**

PSE is an active member of ColumbiaGrid, which was formed to improve the operational efficiency, reliability and planned expansion of the Northwest transmission grid.

**Remain active in appropriate regional initiatives like the Puget Sound Climate Protection Advisory Committee.**

CPAC was discontinued in Jan 2005.

**Explore the development of a corporate greenhouse gas (GHG) policy for shareholders and customers.**

PSE has developed a corporate greenhouse gas policy. To review this policy, as well as a discussion of cost and other related issues, please refer to Environmental Concerns Appendix.

**Actively participate in legislative discussions about a Renewable Portfolio Standard for Washington.**

PSE participated in legislative discussions about a Renewable Portfolio Standard for Washington prior to the passage of I-937.

**Continue to participate in regional initiatives exploring transmission and resource adequacy standards.**

PSE has participated in the regional resource adequacy forums that develop recommended energy and capacity standards. The Company has also followed and begun implementation of the Electric Reliability Organization process that essentially provided NERC/WECC enforcement capabilities. Processes are in place to implement the over 900 reliability related requirements that resulted from that process.

**Pursue, as necessary, regulatory mechanisms to address financial impediments and disincentives associated with resource acquisitions that are consistent with the Least Cost Plan.**

As part of the Least Cost Plan Rulemaking, in 2005 PSE recommended to the WUTC a regulatory mechanism that addresses the financial impediments and disincentives associated with resource acquisitions. As part of that rulemaking, stakeholders discussed the potential advantages and disadvantages of incorporating some form of Commission approval for integrated resource plans. PSE suggested that public interest could benefit from regulatory approval that occurs *before* utilities use society's scarce resources to develop or acquire new energy. Prior to the resource acquisition decision process, there

is not enough information available to make a decision, meaning there is little to “approve.” Our proposed change would provide all stakeholders an opportunity to provide meaningful input to the resource decision process. In terms of process timing, the new process should come after the IRP and RFP processes, when all meaningful information will be available, but before significant resources are committed to a particular resource. PSE provided a proposal for optional proceedings through which:

- a utility could seek Commission approval of the prudence of a utility's determination of resource need and resource acquisition strategy prior to implementation of an acquisition plan and associated financial commitments.
- particularly with respect to long lead-time resources, a utility could seek Commission approval of decisions to proceed with various phases of a project along the way. Such approval might or might not include commencement of recovery of costs expended as of that point in the project development.
- stakeholders would be provided an opportunity to provide direct feedback to the resource acquisition process decision, rather than just far upstream in the information gathering process and long after the decision is made and utilities are seeking recovery of costs.

As part of its 2006 General Rate Case, PSE recommended to the WUTC a regulatory mechanism that addresses the financial impediments and disincentives associated with the massive costs of transmission investments related to generation resource acquisitions. PSE proposed a new regulatory mechanism to track known and measurable depreciation expense for transmission and distribution investments the Company makes between general rate cases. As proposed, depreciation expenses would be recovered through a surcharge added onto existing tariff schedules. The surcharge would be based on the incremental depreciation expense of natural gas and electric transmission and distribution investment over and above the depreciation expense reflected in existing rates. There would be an annual true-up. The mechanism would allow for recovery of investments in new plants between rate cases, but would not provide for recovery on the investments. The Company will invest \$444 million and approximately \$500 million in energy (electricity and natural gas) delivery infrastructure during 2006 and 2007, respectively. While customers will benefit from investments in this transmission and distribution plant as soon as the infrastructure is put into service, the Company will not recover the depreciation expense it incurs or any return on its invested capital until the conclusion of its next general rate case following the plant's in-service date. The Commission has in prior orders recognized that it is appropriate to address earnings

attrition when there is a growing mismatch between revenues, expenses and rate base. The Company faces such circumstances due to regulatory lag and therefore its depreciation tracker or “known and measurable” rate base adjustment proposals are appropriate. PSE performed detailed attrition studies that demonstrate earnings attrition, thus justifying the mechanism.

### ***G. System Planning***

**Evaluate opportunities for lower-cost, innovative solutions, which facilitate an appropriate level of system performance at the best long-term cost (such as the TreeWatch and Silicone Injection initiatives).**

PSE has continued to fund lower-cost, innovative solutions such as the Tree Watch and Silicon Injection initiatives, which provide system performance at a lower cost. In 2007, the Tree Watch program will continue as an O&M program specifically focused on the transmission corridors in order to remove danger trees that threaten transmission and high voltage distribution facilities, as well as distribution circuits. Also, the cable remediation program will continue to use silicon injection to help remediate more cables in 2007.

**Continue to evaluate distributed resources technologies and consider their impact to both gas and electric distribution systems.**

PSE strives to incorporate distributed resources (DR) elements into its distribution system facilities planning processes, and is modifying DR screening tools to identify projects with the highest probability of serving the least cost capacity deferral alternative. Currently, we’re monitoring and evaluating DR developments at the federal, state and utility levels. PSE continues to search for opportunities to implement DR and adopt effective and workable solutions already developed by the industry.

### **Continue to evaluate how aging assets are likely to impact system performance and develop remediation plans.**

*Electric.* PSE has several electric system programs to address aging substation, transmission line, and distribution line infrastructure. The primary equipment asset focus of these programs based on reliability is:

- Distribution underground cable systems,
- Transmission and distribution line poles and switches, and
- Substation transformers, circuit-breakers, regulators, circuit-switchers, relays, and batteries.

System performance is reviewed on an annual basis by reviewing the information that is collected by maintenance crews, and through an equipment failure reporting process. Existing equipment remediation programs are modified and new programs developed as required based on new impacts identified during the review process.

*Gas.* Portions of PSE's gas assets are nearing the end of their useful life and are in need of replacement. PSE has implemented a programmatic approach to the replacement of aging facilities in order to manage impacts to system performance and customers. Examples of these efforts include specific programs targeting the replacement of cast iron and bare steel pipe, both of which are susceptible to increased leakage over time. Gas leakage can directly affect gas reliability and safety depending on the proximity to the customer and the duration a gas main is out of service, so that it can be repaired. The Cast Iron Program will be complete in June 2007 and the Bare Steel program will be complete by the end of 2014.

### **Continue to develop system models and other technologies that facilitate more accurate, customer- and time-sensitive system evaluations regarding system performance (i.e. Stoner SynerGEE implementation, supervisory control and data acquisition (SCADA), and Automated Meter Reading).**

PSE has continued developing and enhancing the system models for the electric and gas infrastructures to be used in analyzing the system capability to serve new and existing customers. The Supervisory Control and Data Acquisition (SCADA) system is being expanded each year to help monitor and control the electrical infrastructure.