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2003 POWER COST ONLY RATE CASE
WITNESS: WILLIAM A. GAINES

BEFORE THE

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND ENERGY, INC., Respondent.	Docket No. UE-031725

REBUTTAL TESTIMONY OF WILLIAM A. GAINES ON BEHALF OF PUGET SOUND ENERGY, INC.

FEBRUARY 13, 2004

PUGET SOUND ENERGY

2000-2001 Gas and Electric Least Cost Plan

12-29-99

December 1999

I. INTRODUCTION & OVERVIEW

A. Introduction

This document is Puget Sound Energy's 2000-2001 gas and electric least-cost plan, prepared to comply with the requirements developed by the Washington Utilities and Transportation Commission under WAC 480-100-251 and WAC 480-90-191.

Puget Sound Energy (PSE) was formed in 1997 under the merger of the electric utility, Puget Sound Power and Light, with the gas utility, Washington Natural Gas. The company's combined utility service territory covers approximately 6,000 square miles. In this area, PSE serves over 900,000 electric customers and 560,000 gas customers, primarily in western Washington state. About 290,00 of these customers receive both electric and gas service from the company.

This is PSE's first combined gas and electric least-cost plan (LCP). This plan begins with an overview of the principles that guide PSE's least cost-planning process.

B. Overview of PSE's Least Cost Planning Principles

Purpose of This Document: PSE's LCP meets the requirements of WAC 480-90-191 and WAC 480-100-251.

The purpose of this gas and electric least cost plan is to fulfill the requirements of WAC 480-100-251 (the electric "least cost planning" rule) and WAC 480-90-191 (the gas "least cost planning" rule). PSE presents a plan that not only meets the technical requirements of these rules, but which is relevant in a changing industry. As such, this plan seeks to reflect the actual choices and alternatives facing the company in meeting its duties and obligations. PSE believes a least-cost plan developed in this context proves most useful to the WUTC, our customers, other interested parties and the company itself.

PSE's plan is a "snapshot" in time of its planning efforts.

The company's planning processes are ongoing, continual efforts. As new data, issues and opportunities arise, plans will often change in order to best meet the interests of the Company and its customers. All elements of the least-cost plan change over time; for example, every year PSE updates its demand forecast, and new supplies of energy are secured to replace expiring contracts, all within the context of an ever-changing wholesale marketplace. This plan represents

the company's assessment of the future in 1999. Flexibility to adjust and adapt to changing circumstances, opportunities and challenges is essential.

PSE focuses on means to appropriately address uncertainty, rather than on prescriptive long-term planning.

Uncertainty and change have become pervasive in today's planning environment. It is better to find ways, on an ongoing, dynamic basis, to meet the challenges and opportunities that arise, than to remove important options through prescriptive efforts and an over-reliance on forecasts of uncertain variables. Investigating sets of optional courses of action can have great benefits to customers and the company alike.

A wide range of scenarios is considered. These scenarios are important in the development of planning options.

As contemplated by the least-cost planning rules, scenario analysis can be a useful tool for structured consideration of potential choices in an uncertain environment. As in prior least-cost plans, the company will continue to use this technique. The various scenarios illustrate the uncertainty that the company faces in the future, with an understanding that a scenario may actually occur that is not captured by the plan. Accordingly, given the current environment, the range of scenarios is quite wide, particularly as issues surrounding open access and retail choice have not been resolved in the State of Washington. Consideration of scenarios provides useful information for development of the company's planning options.

Focus on the value of flexibility so that beneficial opportunities can be captured, and risks can be appropriately addressed, at the time they appear.

Flexibility has great value in an uncertain and changing environment. While this value may not always be quantifiable, flexibility is an essential element of any least-cost plan developed in an uncertain industry environment. Conversely, removal of flexibility can create future risks for customers as long-term commitments can reduce the ability for customers to benefit from new opportunities and developing markets.

The company's plan focuses on taking advantage of the resource supply options provided by competitive wholesale energy markets.

Since the least-cost planning rules were originally established in the mid-1980's, many structural changes have been occurring in wholesale energy supply markets, particularly the opening of these markets to increased competition. Prior to these changes, various estimation procedures were often used to attempt to assess the range of potential costs of hypothetical resource alternatives. Now that wholesale markets have been opened to competition, the advantages of

market-based resource options and alternatives over more traditional resource options should be recognized. It is very important to note, however, that any long-term projections of market prices are, by their nature, speculative, and should be considered in that light.

PSE's "public involvement strategy," as required by WAC 480-100-251 has been, and will continue to be, PSE's use of its Technical Advisory Group.

PSE's Technical Advisory Group has provided the company alternative perspectives and constructive input regarding its least-cost planning process. Since merger of Washington Natural Gas and Puget Sound Power and Light, fifteen TAG meetings have been held, covering a number of subjects including conservation planning, energy supply planning, distribution planning, economics and load forecasting, legislative issues and regulatory issues. PSE uses the Technical Advisory Group process as a key means to engage constructively in a "public involvement strategy" that informs customers, the public and interested parties about the company's planning processes. PSE will, of course, also consider information that becomes available from other sources regarding the interests of its customers and other stakeholders as part of its planning processes. While the public involvement process can provide constructive and useful input to the company, the company's plans represent the company's own assumptions, analysis and conclusions.

C. Overview of Changes in Energy Supply Markets

As stated in the principles above, PSE seeks to make this least cost plan relevant to current and currently projected future industry conditions. In doing so, it is important to recognize the developments that have taken place over the years since the least cost planning rules were developed and earlier plans were submitted. These industry conditions are discussed more fully in Chapters 4 and 5, electric and gas resource supply, respectively.

A utility's obligation to serve its customers has traditionally been the fundamental basis of electric and gas utility planning. This obligation requires utilities to make long-term investments in energy supply resources as well as in transmission capacity and distribution facilities with an understanding that all of the utilities' costs would be recovered over the lives of those assets and commitments. Under traditional cost of service regulation, utilities were willing to make long-term resource commitments as this regulatory scheme provided for necessary recovery of all those investments and expenditures.

The utility obligation to serve has also come to serve as a conduit to advance federal and state public policy objectives, such as energy conservation programs, services directed toward low-income customers, and mandated acquisition of Qualifying Facilities under the Public Utility Regulatory Policies Act (PURPA), among others. As elsewhere, the electric and gas least-cost planning rules were developed within this context in the State of Washington. Plans have been prepared and filed with the Commission by regulated utilities, including PSE, and these plans, in turn, have guided the associated resource acquisition decisions.

At the time the gas and electric least-cost planning processes were introduced in this state in 1987, today's competitive wholesale electricity markets did not exist and wholesale gas markets were just beginning to develop. Utility least-cost planning processes, conducted through "collaborative" efforts, served as the primary mechanism by which resource development decisions were considered and analyzed.

An important piece of this process was development of the electric utility's long term Avoided Cost in compliance with PURPA. The costs of various resource alternatives were based upon estimation procedures, subject to inaccuracies inherent in such a process. Avoided Costs were estimated through analytical processes that compared potential or hypothetical resource alternatives.

In the past two decades, the gas and electric utility industries have undergone fundamental changes nationwide. The transformation of the natural gas industry began first. Prior to 1978, the FERC regulated wholesale gas prices that producers charged to interstate pipeline companies, which then sold gas to local distribution companies ("LDCs") at FERC regulated rates. Phased-in deregulation of natural gas well-head prices began with passage of the Natural Gas Policy Act in 1978. In 1984, the FERC issued Order 436, which spawned the development of regional spot markets for natural gas. During this time, interstate pipelines still sold fully bundled gas service to LDCs at FERC regulated rates, but those services began competing with spot market sales where pipelines simply transported the gas supplies. Since implementation of measures required under FERC Order 636, issued in 1993, interstate pipelines only serve to transport gas owned by others. Today, LDCs acquire and manage their own portfolios of supply and delivery resources in order to provide reliable cost-efficient bundled service to their core (predominantly residential and commercial) customers. In many jurisdictions, large commercial and industrial customers are free to acquire their own resources and rely on the LDC only for local delivery service. Both LDCs and large industrial loads rely on mature, active, liquid and transparent wholesale energy and capacity markets.

The electric industry restructuring process started later and, like the gas industry, is still progressing. Through the 1992 Energy Policy Act and FERC Orders 888 and 889 of 1997, the federal government has restructured the framework within which the wholesale electric supply markets now operate. Paralleling natural gas transmission, electric transmission operators must now provide non-discriminatory access to transport the wholesale energy of others. As a result of state-by-state adoption of retail open access schemes, many vertically integrated electric companies have sold or spun-off their generating assets, creating a new breed of electric production companies, not unlike the gas producers and aggregators of today. This restructuring, in combination with advancements in generation technology and increasing use of natural gas as fuel for generation, have all contributed to the establishment of competitive wholesale electricity markets. It is expected that natural gas prices will have a increased impact on electric markets as convergence of these markets continues. These wholesale markets are expected to continue to grow, not only in number of transactions but in the depth of the resources they trade.

Electric utilities in many jurisdictions have been required by legislation or regulatory action to unbundle their supply and delivery functions and provide retail open access for many, if not all, customer classes. What is most unclear is to what level, if any, retail open access will occur in Washington State. Large industrial customers, who expect to be the primary beneficiaries, have typically been driving the push for open access at the local level. Many industry observers expect that, as in the gas industry, there may be little interest in open access among residential and commercial customers in the near term in Washington State. Additionally, some do not expect that these customers will benefit from open access due to a number of factors including: 1) certain projections (though speculative over the long term) showing electric wholesale prices rising over the long term due to rising gas prices; and, 2) a concern that the Northwest could lose some of the regional advantages it currently enjoys, including the benefits of low-cost hydropower, under certain open access scenarios. However, federal or state legislation may mandate unbundling down to the residential level. To date, policymakers in the State of Washington have not resolved this critical issue.

D. Range of Outlooks Considered in the Least Cost Plan

In consideration of these current industry conditions and the uncertainties facing PSE and its customers, this least-cost plan provides a structured means to address the range of uncertainty of potential futures the company might face given that many issues associated with the eventual state of the gas and electric industries in the State of Washington have not been resolved. For instance, movement toward open retail access is uncertain at this time, while, throughout the nation many states have dealt with this issue. Below follows a summary of the scenarios developed by the company to address major uncertainties through a structured approach.

Electric Scenarios

This Least Cost Plan includes a variety of planning scenarios to address uncertainty regarding the loads it will plan to serve in the future. These scenarios demonstrate the level of uncertainty the company faces and drive resource strategies discussed throughout the plan. The following briefly summarizes the nine scenarios examined in this Plan. These scenarios fall into three broad categories.

Fully bundled service scenarios:

Three scenarios assume PSE retains all its customers, continues to provide fully bundled electric service to all customers. That is, no open access occurs over the next 20 years in PSE's service territory. These scenarios are labeled "Low", "Medium" and "High" reflecting different levels of load growth due, primarily, to economic and demographic variability.

Open access scenarios:

Three scenarios assume that open access becomes available for various numbers of PSE's customers. These scenarios are labeled "Access A," "Access B" and "5% Attrition" and each make different assumptions regarding the progression of open access in PSE's service area.

Distributed generation scenarios:

Three scenarios assume various levels of installation of distributed generation in PSE's service area. These scenarios are labeled "D.G.," "D.G. 10%" and "D.G. High" reflecting different levels of adoption of distributed generation.

Gas price sensitivities:

The cost of gas is an important determinant for the electricity market, as the marginal electric unit is generated from a combined cycle gas turbine. Three different projections of gas prices are used to test sensitivity of incremental electric supply costs to gas prices.

Gas Scenarios

Fewer gas scenarios were considered than electric scenarios. As discussed above, natural gas is further along in terms of market restructuring than electricity. The nature of the uncertainty the company faces in its gas business is, at this time, different from that of the electric business. Additionally, PSE's natural gas portfolio has a significant level of flexibility, comprised as it is of numerous supply and capacity contracts with staggered renewal dates. The gas scenarios examined three economic and demographic sensitivities: high, medium, and low load growth.

E. Summary of Conclusions

The least cost plan considers the implications of these scenarios in development of a series of conclusions regarding the company's current gas and electric resource supply strategies. While current conditions are discussed in more detail in Chapters 4 and 5, and the results of modeling are discussed in Chapter 6, a number of key conclusions become clear through the planning process. As broad principle, PSE will structure its gas and electric supply portfolios so that they are consistent with the term, pricing, quality and other attributes of its supply commitments to customers.

Gas Supply Strategies

PSE will continue to utilize competitive market forces in the gas supply market to maximize benefits for our customers. PSE has developed, and will continue to develop, a portfolio of gas supply resources that are consistent with customer supply commitments and pricing provisions. PSE' gas portfolio contains a mixture of short-term and long-term contracts. Much of PSE's winter gas supplies are contracted on a seasonal basis. This provides year-to-year flexibility to optimize use of the most favorable supply basin. Contracting on a shorter-term basis can also allow an opportunity to incorporate new and innovative contracting terms as they develop in the market. PSE also utilizes some existing long term supply contracts, all of which expire by 2005. PSE's gas supply portfolio is well positioned for future demand uncertainty because contracts are priced at market and can be sold in the unlikely event that contracted supply exceeds demand. PSE's long-term contracts benefit in other ways from the competitive market. Beyond simple commodity market pricing provisions, PSE's long-term contracts contain annual re-negotiation provisions, which allow the Company to negotiate other aspects of the contract to reflect changes in the market. PSE will continue to utilize the dynamic, competitive forces in the Pacific Northwest gas supply market to benefit our customers.

Current projections suggest that additional capacity to deliver gas to PSE's distribution system will not be needed for at least 4 years, under the most liberal growth scenario. This is primarily due to additional, cost effective transportation capacity acquired in association with the recently completed expansion of the Jackson Prairie storage facility, near Chehalis, WA. To meet the needs of our firm customers on a longer term basis, PSE will continue to seek opportunities for strategic, cost effective supply and capacity resource options that match customer expected customers supply commitments.

Electric Supply Strategies

It is important to recognize how electric energy markets are evolving as compared, and contrasted, to natural gas markets. While there are commonalties in the opening of gas and electric wholesale markets to competition, the structures of two industries have different histories. In natural gas markets, LDCs in most jurisdictions have not owned and operated natural gas wells, which are the supply counterparts of electric generators in electric markets. Firms that specialize in natural gas production have developed to capture upstream economies of scale and scope. Gas production firms are large (usually multinational) and optimize operations across several related petroleum markets including oil and propane. LDCs like PSE are better positioned to specialize as buyers in the competitive market place, reaping benefits of competition among firms specializing in gas production. Considering that PSE presently purchases approximately 65% of the power in its electric supply portfolio and the industry conditions discussed in this plan, PSE believes it is best positioned to meet its customer's electrical energy needs by focusing on being an effective buyer as competitive electric markets continue to evolve, and by relying less on owning and operating new generation resources.

PSE will continue to seek to structure its gas and electric supply portfolios so that they are aligned consistently with the various attributes of its expected supply commitments to customers, including term, pricing, quality and other attributes. These customer supply commitments to customers, of course, evolve within the context of national, regional, and state energy policies. As described above, such policies in the gas and electric industries have different histories, and, while becoming similar in important ways, still are markedly dissimilar in the State of Washington at this time. Correspondingly, PSE's gas and electric resource portfolios have evolved differently. PSE's gas supply portfolio has been structured to be responsive to PSE's supply commitments to its gas customers within the context of the PGA and PGA incentive pricing structures and a gas industry structure set forth by federal and state policy. These issues of pricing structure and industry structure, while resolved for now for PSE's gas business, are enormously more uncertain for PSE's electric business. For instance, the scenarios in this plan demonstrate dramatically the degree of uncertainty faced regarding the term of customer supply commitments going forward due to the possibility of retail open access occurring at some time over the planning horizon. Further uncertainty is added to the planning process when addressing issues of electric supply pricing to customers.

In the absence of resolution of these issues, PSE must manage its electric supply portfolio to be responsive to its customer supply commitments as they are expected at the current time, recognizing fundamental uncertainties. This uncertainty drives a need for additional flexibility in PSE's electric supply portfolio. A noteworthy contrast between PSE's gas and electric supply portfolios is flexibility. The natural gas discussion above provides an overview of the flexibility inherent in PSE gas portfolio. This flexibility allows PSE to take advantage of rapidly evolving

market opportunities, which carries over into long-term contracts. Shorter duration contracts also provide a hedge against uncertain future retail market structures, minimizing potentially uneconomic resource costs. A strategy to diversify its electric supply portfolio through adding market-responsive resources incrementally to the electric portfolio appears to provide a degree of the market and flexibility benefits similar to those of gas supply portfolio.

In the current environment where fundamental issues associated with retail access and other structural changes have not been resolved in this state, long-term resource planning over a 20-year time horizon is extremely difficult. Generally, it does not appear that making large new 20 to 30-year resource commitments today would prove to be beneficial to customers and the company under many of the scenarios identified in this plan. Consider, for instance, if PSE were to build and operate a large new central station generation resource to serve incrementally the expected loads of core customers over next 20 to 30 years. Should market prices not rise above the cost of this resource its cost may prove, in hindsight, to be uneconomic. The company and its customers would have been better off had this resource not been acquired in the first place - the company should have relied on market purchases. Further, should open access or other industry changes occur over the 20 year planning horizon, this resource may not be needed to serve core loads, and, beyond this, if market prices were to stay relatively low, the resource many become difficult to liquidate. This is an illustration of the difficulties in making large new long-term resource commitments in today's environment.

Following the path of building (or contracting for) new, inflexible long-term power supply generation facilities is risky for customers as such commitments could prove to be 1) uneconomic, due to changes in technologies or market costs, or, 2) unnecessary, due to movement of core customers to non-core status (see scenarios). In short, at this time, it is difficult to make long term capital or contractual commitments for resource acquisitions, after considering the many risks to customers such commitments present. Generally, such a new resource commitment appears inconsistent with overall expected customer supply commitments.

To PSE it appears reasonable to address such risks through pursuing a strategy of increased use of flexible, short and intermediate term market responsive supply to meet incremental needs through this transition period until the context of PSE's customer supply commitments are made more clear by policymakers. However, this is not to say that under all scenarios this incremental reliance on the market will always prove, in hindsight, to be the best path. Scenarios can be constructed where market prices rise so greatly that this strategy may appear, in hindsight, best under certain sets of long-term industry assumptions. Even so, at the current time, it appears clear that, on balance, this incremental use of market purchases minimizes the risks illustrated by the scenarios in this plan.

It is important to note that PSE's existing electric supply portfolio currently contains a significant amount of long-term, (relatively) fixed price supply resources. PSE will continue to pursue opportunities, as they arise, to mitigate and streamline certain high cost resources in the existing resource portfolio. Existing long-term resource commitments may be replaced by substitute long-term commitments if overall cost savings and other benefits can be achieved. At the same time, PSE is vigorously pursuing a fair allocation from BPA of the benefits of the federal hydropower system for our residential and small-farm customers and a continuation of the benefits of its very low cost Mid-Columbia power purchase ageeements. As the costs of the federal hydropower system are expected to be below market, fair access to this resource is critical for PSE's residential and small farm customers. This regional resource, in combination with PSE's Mid-Columbia contractual supplies, can form a large, stable, and very low cost resource base for PSE's customers. PSE's overall resource portfolio can then be further diversified by building in more flexible, short- and intermediate-term market-responsive power supplies, as opposed to inflexible, long-term commitments. This diversity provides protection for customers by mitigating the impact that electric market price changes would have on customers through the future.

Regulatory Issues

In order for PSE to be able to plan appropriately for meeting future customer supply commitments and to best take advantage of the benefits for its customers of moving incrementally toward market-responsive energy supply, a regulatory mechanism is needed that can allow PSE to match the qualities of its resource supply commitments to its customer supply commitments. Under the current regulatory structure for electric energy cost recovery provided in the Merger Rate Plan, PSE absorbs market price risks as customer rates do not change in accordance with market costs. Continuation of this, or any other structure where the utility is required to absorb market price risks increase long-run costs to customers by adversely affecting the utility's cost of capital and encouraging the utility to pursue costly efforts to attempt to insulate against this risk. Conversely, it appears that customers would benefit from a regulatory policy that better encourages innovation, shares the benefits of competitive wholesale markets, encourages conservation and effective load management, and does not adversely affect the company's ability to raise capital on reasonable terms. Therefore, PSE encourages the WUTC to adopt an electric energy cost adjustment clause and incentive mechanism, generally similar to its Purchased Gas Adjustment (PGA) and PGA Incentive Mechanism, for the post-Rate Plan period.

Under such a mechanism, a yearly adjustment for changes in market costs would be made. Beyond this, customers could choose to see daily, weekly or monthly changes in market prices, which would provide real market signals to those customers providing market-based incentives for active load management and conservation. Long-term volatility would be mitigated as PSE's

These values are slightly lower than the avoided costs calculated pursuant to the 1995 WNG LCP. While the forecasts of the cost of gas are higher in this plan than the 1995 plan, four factors have more than offset the effect of the gas cost increases. These are: 1) firm pipeline tariffs are slightly lower than in 1995, 2) no expansion of peak day delivery capacity is needed until 2005 following the November 1999 expansion of Jackson Prairie, 3) the PGSS, PGSS redelivery, and FGSS are less expensive than the expansion options contemplated in the 1995 plan, and 4) the revised methodology for calculating peak day loads results in lower forecasted peak day loads

Gas Summary of Results

PSE expects to have sufficient peak day delivery capacity to meet currently forecasted peak loads until the 2004-2005 heating season. As a result, no expansion of peak day delivery capacity is currently contemplated. Options for capacity expansion are evaluated on an on going basis for possible inclusion when needed.

PSE's existing and alternative future capacity options can meet future peak day loads over the 20 year planning period under all three load growth scenarios. Further, these capacity additions will enable delivery of the annual volumes of gas to meet core loads throughout the period.

The least cost resources selected by this planning process in both the low and high cases are timing variations on the resource acquisition schedule developed in the medium case. Of course, an accelerated growth pattern (such as would be seen from the high growth gas scenario, or possibly resulting from the various Distributed Generation electric scenarios) will require an adjustment of resource development plans. Since the least cost planning process in ongoing, it is expected that sufficient lead time will be available to either speed up or delay the development or acquisition of additional resources.

D. Resource Strategies and Conclusions

Based upon the results of the scenario analysis provided earlier in this chapter and in considerion of the planning issues discussed throughout this report, PSE has reached a number of conclusions regarding gas and electric resource strategies and conclusions which are discussed below. These strategies then form the basis for many of the items listed in the Two Year Action Plan provided in Chapter IX.

Gas Strategies and Conclusions

PSE will continue to utilize competitive market forces in the gas supply market to maximize benefits for our customers. PSE has developed, and will continue to develop, a portfolio of gas

supply resources that are consistent with customer supply commitments and pricing provisions. PSE' gas portfolio contains a mixture of short-term and long-term contracts. Much of PSE's winter gas supplies are contracted on a seasonal basis. This provides year-to-year flexibility to optimize use of the most favorable supply basin. Contracting on a shorter-term basis can also allow an opportunity to incorporate new and innovative contracting terms as they develop in the market. PSE also utilizes some existing long term supply contracts, all of which expire by 2005. PSE's gas supply portfolio is well positioned for future demand uncertainty because contracts are priced at market and can be sold in the unlikely event that contracted supply exceeds demand. PSE's long-term contracts benefit in other ways from the competitive market. Beyond simple commodity market pricing provisions, PSE's long-term contracts contain annual re-negotiation provisions, which allow the Company to negotiate other aspects of the contract to reflect changes in the market. PSE will continue to utilize the dynamic, competitive forces in the Pacific Northwest gas supply market to benefit our customers.

Current projections suggest that additional capacity to deliver gas to PSE's distribution system will not be needed for at least 4 years, under the most liberal growth scenario. This is primarily due to additional, cost effective transportation capacity acquired in association with the recently completed expansion of the Jackson Prairie storage facility, near Chehalis, WA. To meet the needs of our firm customers on a longer term basis, PSE will continue to seek opportunities for strategic, cost effective supply and capacity resource options that match customer expected customers supply commitments.

Electric Strategies and Conclusions

It is important to recognize how electric energy markets are evolving as compared, and contrasted, to natural gas markets. While there are commonalties in the opening of gas and electric wholesale markets to competition, the structures of two industries have different histories. In natural gas markets, LDCs in most jurisdictions have not owned and operated natural gas wells, which are the supply counterparts of electric generators in electric markets. Firms that specialize in natural gas production have developed to capture upstream economies of scale and scope. Gas production firms are large (usually multinational) and optimize operations across several related petroleum markets including oil and propane. LDCs like PSE are better positioned to specialize as buyers in the competitive market place, reaping benefits of competition between firms specializing in gas production. Considering that PSE presently purchases approximately 65% of the power in its electric supply portfolio and the industry conditions discussed in this plan, PSE believes it is best positioned to meet its customer's electrical energy needs by focusing on being an effective buyer as competitive electric markets continue to evolve, and by relying less on owning and operating new generation resources.

PSE will continue to seek to structure its gas and electric supply portfolios so that they are aligned consistently with the various attributes of its expected supply commitments to customers, including term, pricing, quality and other attributes. These customer supply commitments to customers, of course, evolve within the context of national, regional, and state energy policies. As described above, such policies in the gas and electric industries have different histories, and, while becoming similar in important ways, still are markedly dissimilar in the State of Washington at this time. Correspondingly, PSE's gas and electric resource portfolios have evolved differently. PSE's gas supply portfolio has been structured to be responsive to PSE's supply commitments to its gas customers within the context of the PGA and PGA incentive pricing structures and a gas industry structure set forth by federal and state policy. These issues of pricing structure and industry structure, while resolved for now in the PSE's gas business, are enormously more uncertain for PSE's electric business. For instance, the scenarios in this plan demonstrate dramatically the degree of uncertainty faced regarding the term of customer supply commitments going forward due to the possibility of retail open access occurring at some time over the planning horizon. Further uncertainty is added to the planning process issues of electric supply pricing to customers need to be addressed.

In the absence of resolution of these issues, PSE must manage its electric supply portfolio to be responsive to its customer supply commitments as they are expected at the current time, recognizing fundamental uncertainties. This uncertainty drives a need for additional flexibility in PSE's electric supply portfolio. A noteworthy contrast between PSE's gas and electric supply portfolios is flexibility. The natural gas discussion above provides an overview of the flexibility inherent in PSE gas portfolio. This flexibility allows PSE to take advantage of rapidly evolving market opportunities, which carries over into long-term contracts. Shorter duration contracts also provide a hedge against uncertain future retail market structures, minimizing potentially uneconomic resource costs. A strategy to diversify its electric supply portfolio through adding market-responsive resources incrementally to the electric portfolio appears to provide a degree of the market and flexibility benefits similar to those of gas supply portfolio.

In the current environment where fundamental issues associated with retail access and other structural changes have not been resolved in this state, long-term resource planning over a 20-year time horizon is extremely difficult. Generally, it does not appear that making large new 20 to 30-year resource commitments today would prove to be beneficial to customers and the company under many of the scenarios identified in this plan. Consider, for instance, if PSE were to build and operate a large new central station generation resource to serve incrementally the expected loads of core customers over next 20 to 30-years. Should market prices not rise above the cost of this resource its cost may prove, in hindsight, to be uneconomic. The company and its

customers would have been better off had this resource not been acquired in the first place - the company should have relied on market purchases. Further, should open access or other industry changes occur over the 20 year planning horizon, this resource may not be needed to serve core loads, and, beyond this, if market prices were to stay relatively low, the resource many become difficult to liquidate. This is an illustration of the difficulties in making large new long-term resource commitments in today's environment.

Following the path of building (or contracting for) new, inflexible long-term power supply generation facilities is risky for customers as such commitments could prove to be 1) uneconomic, due to changes in technologies or market costs, or, 2) unnecessary, due to movement of core customers to non-core status (see scenarios). In short, at this time, it is difficult to make long term capital or contractual commitments for resource acquisitions, after considering many risks to customers such commitments present. Generally, such a new resource commitment appears inconsistent with overall expected customer supply commitments.

To PSE it appears reasonable to address such risks through pursuing a strategy of increased use of flexible, short and intermediate term market responsive supply to meet incremental needs through this transition period until the context of PSE's customer supply commitments are made more clear by policymakers. However, this is not to say that under all scenarios this incremental reliance on the market will always prove, in hindsight, to be the best path. Scenarios can be constructed where market prices rise so greatly that this strategy may appear, in hindsight, best under certain sets of long-term industry assumptions. Even so, at the current time, it appears clear that, on balance, this incremental use of market purchases minimizes the risks illustrated by the scenarios in this plan.

It is important to note that PSE's existing electric supply portfolio currently contains a significant amount of long-term, (relatively) fixed price supply resources. PSE will continue to pursue opportunities, as they arise, to mitigate and streamline certain high cost resources in the existing resource portfolio. Existing long-term resource commitments may be replaced by substitute long-term commitments if overall cost savings and other benefits can be achieved. At the same time, PSE is vigorously pursuing a fair allocation from BPA of the benefits of the federal hydropower for our residential and small-farm customers and a continuation of the benefits of its very low cost Mid-Columbia power purchase ageeements. As the costs of the federal hydropower system are expected to be below market, fair access to this resource is critical for PSE's residential and small farm customers. This regional resource, in combination with PSE's Mid-Columbia contractual supplies, can form a large, stable, and very low cost resource base for PSE's customers. PSE's overall resource portfolio can then be further diversified by building in more flexible, short- and intermediate-term market-responsive power supplies, as opposed to inflexible, long-term

commitments. This diversity provides protection for customers by mitigating the impact that electric market price changes would have on customers through the future.

Regulatory Issues

In order for PSE to be able to plan appropriately for meeting future customer supply commitments and to take best take advantage of the benefits for its customers of moving incrementally toward market-responsive energy supply, a regulatory mechanism is needed that can allow PSE to match the qualities of its resource supply commitments to its customer supply commitments. Under the current regulatory structure for electric energy cost recovery provided in the Merger Rate Plan, PSE absorbs market price risks as customer rates do not change in accordance with market costs. Continuation of this, or any other structure where the utility is required to absorb market price risks increase long-run costs to customers by adversely affecting the utility's cost of capital and encouraging the utility to pursue costly efforts to attempt to insulate against this risk. Conversely, it appears that customers would benefit from a regulatory policy that better encourages innovation, shares the benefits of competitive wholesale markets, encourages conservation and effective load management, and does not adversely affect the company's ability to raise capital on reasonable terms. Therefore, PSE encourages the WUTC to adopt an electric energy cost adjustment clause and incentive mechanism, generally similar to its Purchased Gas Adjustment (PGA) and PGA Incentive Mechanism, for the post-Rate Plan period.

Under such a mechanism, a yearly adjustment for changes in market costs would be made. Beyond this, customers could choose to see daily, weekly or monthly changes in market prices, which would provide real market signals to those customers providing market-based incentives for active load management and conservation. Long-term volatility would be mitigated as PSE's electric resource portfolio is very diverse as it is expected to include a mixture of incremental market purchases, BPA power provided under the subscription process, PSE owned resources, and long-term contracts. Even so, it is important to note that if current projections that gas and electric wholesale prices will rise over the long-term turn out to be true, both the current PGA mechanism and a similar electric cost adjustment mechanism would pass through these rising costs over the long term.

As the Commission considers such a mechanism, PSE urges the WUTC to consider that, the fact that wholesale energy markets have changed dramatically while retail regulation has not raises a critical issue of regulatory policy. Under the current situation, PSE, as a regulated electric utility continues to operate under cost of service regulation and a duty to serve. In doing so under the current Rate Plan structure, PSE is now effectively serving as buffer between volatile market forces and customers. Serving as this buffer is costly now, and, over the long term even more

Work within the energy code development process to facilitate the acquisition of cost-effective resources by code.

PSE, together with other utilities in the state, helped support the development, adoption, and subsequent training for both industry contractors and code officials, for both the residential and the commercial energy codes.

Begin data collection on various DSM strategies that may have potential distribution system benefits and perform initial screening.

Distribution system benefits require morning warm-up load reduction. Towards that end, the company has a duct sealing pilot, and is investigating the use of AMR technology to enable market-based load management.

Work with other interested parties to further develop resource cost-effectiveness methodology. Consider key issues of environmental externalities and quantification of market transformation benefits.

The Company continues to use resource cost-effectiveness methodology based on natural gas avoided costs. Estimates of the value of non-energy savings benefits, both quantifiable and non-quantifiable are incorporated into measures reviewed by the energy efficiency programs. The generally accepted order-of-magnitude of these "externalities" for natural gas are significantly less than those linked with electric generation.

IV. Energy Supply - Electric

Assess competitive bidding results.

In September 1991 PSE conducted a competitive bidding process for new resource. At that time, Puget Power issued a Request for Proposals (RFP) seeking 100 to 200 average megawatts to come on-line during the 1995 through 1998 period in accordance with Chapter 480-107 WAC. This RFP included a 10% advantage for conservation and renewable generation resources. A number of resources were selected for further evaluation to a "Preliminary Award Group." These included conservation, small hydro, high-efficiency cogeneration, wood liquor, landfill gas, municipal solid waste high-efficiency cogeneration and wind resources. These generation resource opportunities from this bidding process did not come to fruition.

Monitor natural gas supply, purchases, and prices.

The company now has a person dedicated to purchase of gas for PSE turbines. Although we still paying market, with merger we have better price discovery about the actual market prices.

Monitor technological advancements.

In response to this action item, in 1993, engineers in the project management group reviewed specific emerging technology of power generation through specific course work.

Staff in many areas of the company, such as energy production and storage, conservation, facilities planning, key accounts and regulation planning, keep abreast of developments in energy

B. Two Year Action Plan

The following is PSE's two year "Action Plan." This includes a number of efforts that implement the least cost plan described in this document.

II. Energy Demand Forecasting

- Refine the weather adjustment methodology for billed sales to further distinguish temperature sensitivities within the year.
- Complete the analysis of gas load research data to refine peak day equations.
- Develop a forecasting module for transportation to account for the effects of business cycles and for the effects of known schedule switching.
- Implement a database to track large customer consumption and observed fuel or rate schedule switching.

III. Demand Side Management

- Investigate the use of technology and real-time pricing to enable market-based conservation and load management.
- Implement the 3-year conservation plan as described in PSE's March, 1999 conservation filing.
- Continue to pursue "fuel-blind" cost-effective conservation programs.
- Continue to support market developments of energy efficiency products and services, to promote customer-driven energy efficiency.
- Conduct evaluations for conservation programs as appropriate. Support broader-based conservation evaluation, for example at the regional level.
- In cooperation with the Puget Sound Clean Air Agency, investigate benefits of fuel-conversion from wood-burning appliances to natural gas.
- Expand customer access to energy-efficiency information using PSE's website.

IV. Energy Supply - Electric

- Continue to move, incrementally, toward more market responsive energy supply.
- Continue to develop risk analysis of PSE portfolio management.
- Develop production costing capability in AURORA or another model.

- Continue to pursue economic FERC (re) licensing of PSE owned hydro projects.
- Pursue renegotiation of the Mid-C resource agreements.
- Continue to pursue opportunities to reduce costs of existing resource commitments.

V. Energy Supply - Gas

- Investigate increased use of financial instruments for portfolio management.
- Explore city gate delivery service.
- Perform feasibility study for expanded capacity of Jackson Prairie storage.
- Increase number and scope of business relationships with suppliers, customers, other LDC's and NUG's.
- Conduct feasibility study of increased LNG capacity for peak load needs.

VI. Integrated Resource Modeling

- Continue on-going process of evaluating new gas and electricity resource options and alternative resource strategies to meet customer needs.
- Continue development of Aurora model data bases to better assess the impacts of alternative gas price scenarios, resource costs, and loads forecasts on PSE's resource portfolio.
- Continue working with the Aurora and Uplan-G software developers to better address PSE's resource and policy options.

VII. Distribution Facilities Planning

- Continue to evaluate opportunities for lower cost, innovative solutions which facilitate an appropriate level of system performance at the best long-term cost (such as the Tree Watch and Silicone Injection initiatives).
- Develop methods for cross-energy solution sets, including cost participation by the beneficiary of the system improvement (off-loading a critical substation by expanding gas usage within the affected area).
- Continue to evaluate distributed resources technologies and consider their impact to both gas and electric plant.
- Continue to evaluate historic design conditions and their impact on facility additions.

costly, as the utility's cost of capital will rise to reflect this new risk should this situation continue over time. Eventually, customers will absorb those costs.

This situation is a sharp contrast to that of the past when utilities could make long-term resource commitments under a least-cost planning framework with the assurance that all those known investments and expenditures would be recovered under a well-understood cost of service regulatory framework. Energy supply commitments and customer commitments were much more clearly and easily matched. At this time though, incremental reliance on short- and intermediate-term market-based purchases for resource acquisitions appears to be best course during this uncertain period, as discussed above. However, should the company continue to absorb the variability in market costs, customers will ultimately face significantly higher costs due to an increased cost of capital, lack of opportunities for market-based load management, and possible missed market opportunities. In this state, as opposed to others, there has been change in regulation that sets forth future customer supply commitments that fully address the changing structure electric supply markets and associated resource alternatives. It is important to note that this risk of absorbing market price volatility was largely nonexistent for utilities in the past. Puget Sound Energy believes that an alternative structure after the end of the Merger Rate Plan period is critical and looks forward to the Commission's policy guidance on this important matter.

A second, related, set of regulatory changes PSE plans to pursue regard implementation of more time-sensitive pricing in utility services for those customers who desire such service. Passing wholesale price signals to retail customers is very important for aligning market information with customer choices. At this time, PSE electric customers (aside from Schedule 48 and special contracts) see no near-term market price signals whatsoever. Generally, a disconnection between wholesale and retail prices can create very distorting signals to the generation market, which will determine when additional generation is needed. This misalignment can lead to resource decisions being made in energy supply markets that do not have the benefit of customer interests and values. Conversely, customers may be able to benefit significantly from modifying use patterns and/or using energy efficiency measures in response to market information. The closer customers come to seeing real time prices form wholesale markets, the better able they are to make choices reflective of real energy supply market economics. Market-based conservation and load management actions taken by customers in response to this information may be tremendously valuable for customers possibly enabling them to avoid market price spikes and other market costs. If broadly implemented, such load management could allow generation markets to avoid production increments when those increments are most costly, producing potential benefits to the entire system.

In the past, technological barriers have stood in the way of providing real price signals to customers with the precision necessary to enable efficient short-run customer decisions. The necessary metering and communication technology has not been available, but this is changing quickly. PSE will be completing implementation of its Automated Meter Reading (AMR) system within the next two years. PSE will be investigating how this and other enabling technologies can be used to pass through real market price signals to customers so that they can take action to manage their loads, ultimately effecting least-cost solutions. As innovative opportunities are created, PSE will work with the Commission, Staff, Public Counsel, and other interested parties to successfully implement new services based on more precise and market-reflective pricing.

PSE, for its part, is focused on flexibility in accessing competitive wholesale electricity markets in acquiring resources to serve its loads. PSE expects to increase its use of incremental short-term market responsive alternatives presented in the competitive wholesale electricity markets, rather than on long-term commitments, for resource acquisition. This flexibility is especially important because a utility's obligation to serve may change dramatically as a natural result of industry evolution and policy developments. PSE acknowledges that its obligation to serve continues unchanged until the Congress or the Washington State Legislature indicate otherwise.