BEFORE THE WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

WUTC v. PUGET SOUND ENERGY INC.

DOCKET NOS. UE-040641 & UG-040640

DIRECT TESTIMONY OF JIM LAZAR (JL-1T)

ON BEHALF OF

PUBLIC COUNSEL, THE ENERGY PROJECT AND

A WORLD INSTITUTE FOR SUSTAINABLE HUMANITY (A.W.I.S.H.)

SEPTEMBER 23, 2004

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I. INTRODUCTION AND QUALIFICATIONS

Q: Please state your name, address, and occupation.

A: Jim Lazar, 1063 Capitol Way S. #202, Olympia, WA. I am a consulting economist specializing in utility rate and resource analysis.

Q: Please briefly summarize your qualifications?

A: I have been engaged in utility consulting continuously since 1982, and worked in the field sporadically prior to that time. I have appeared before this commission on many occasions, including virtually every rate-related proceeding involving Puget Power and Puget Sound Energy since 1978. My other clients have included this Commission, the state Commissions of Idaho and Arizona, and numerous federal, state, and local governmental agencies. I was a witness in the Commission's generic electric rate design investigation in Cause U-78-05, and in numerous proceedings following that decision which implemented this guidance. I was also a witness in the Commission's first natural gas cost of service analysis, Cause U-86-100 (Cascade Natural Gas), and in numerous proceedings involving Washington Natural Gas and Puget Sound Energy which followed that seminal decision.

Q: On whose behalf are you appearing in this proceeding?

A: My testimony is jointly sponsored by the Public Counsel Section, Office of the Attorney General, by The Energy Project, which represents low-income energy

consumers, and by A.W.I.S.H., which supports affordable and sustainable energy for low income households.

Q: What is the purpose of your testimony?

A: I have been asked to review the electric and natural gas cost of service studies, and the electric and natural gas rate design proposals submitted by Puget Sound Energy, and to suggest alternatives that better meet the interest of the Company, electric and gas consumers, and the public at large.

Q: What are your principal conclusions?

A: The Company's proposed massive shift of cost responsibility from non-residential customers to residential customers, and within the residential class from large users to small users is unjustified, inappropriate, and counterproductive. Adhering to long-established ratemaking principles will better serve current and future consumers, and provide the Company with adequate revenues over time. The rate changes ordered in this proceeding should be relatively uniform between customer classes, and relatively uniform among the various rate elements within the residential class.

Q: What exhibits are you sponsoring in this proceeding?

A: I am sponsoring the following exhibits:

Table 1: List of Exhibits

EXHIBIT	CONTENTS
JL-1T	Direct Testimony
JL-2	Qualifications and Experience of Jim Lazar
JL-3	History of Cost of Service Analysis in Washington
JL-4a	Unbundling The Cost of Capital - Calculations
JL-4b	Unbundling The Cost of Capital – S&P Ratings Direct Report
JL-5	Electric Cost of Service Study Results
JL-6	Residential Electric Rate Design
JL-7	Natural Gas Cost of Service Study Results
JL-8	Residential Natural Gas Rate Design

II. SUMMARY OF ELECTRIC RATE DESIGN RECOMMENDATIONS

Q: Please summarize the Company's proposals with respect to electric rate q design?

A: The Company is proposing to assign an above-average increase in electric rates to the residential class, based upon a cost methodology similar to one previously considered and explicitly rejected by the Commission. Within the residential class, the Company is proposing to assign an above-average increase to small-use customers, and a below-average increase to large-use customers. The smallest customers would suffer about a 16% rate increase under the Company's proposal.

Q: What changes do you recommend to the Company Proposal?

A: First, I recommend that the Commission reject the proposed change in the cost of service study. The Commission has previously considered the type of treatment

the Company has proposed, and rejected it overwhelmingly in the past, as I discuss in detail later in my testimony.

Second, I recommend that the Commission retain the progressive electric rate design Puget current has in place. The initial block rates should be based upon the steady, year-round use of electricity for basic lights and appliances that can be met primarily with low-cost hydropower and/or the older Colstrip coal plants. Usage above that level should reflect significantly higher rates for discretionary usage that is highly seasonal, more peak-oriented in time, and requires expensive new resources to serve. Further, there is no cost basis for increasing the customer charge, and it should remain at the current level.

The impact of my recommendations would be to apply a more uniform increase to the customer classes, and move the cost of power for these seasonal and discretionary uses of power more closely in line with the cost of new energy resources.

III. SUMMARY OF GAS RATE DESIGN RECOMMENDATIONS

Q: Please summarize the Company's natural gas rate design proposals.

A: The Company's gas rate design proposals are a radical departure from previously expressed Commission rate design principles. They are based on what I consider to be a fundamental error in the cost allocation methodology, coupled with a fundamental misunderstanding of what causes costs to increase. First, the

Company assigns 70% of the requested increase to the residential class, which uses only 50% of the natural gas delivered by the Company, based on a cost study that includes an unexplained deviation from the previously approved measurement of peak demand. Within the residential class, the proposal assigns 100% of the proposed increase to small-use residential customers, and actually decreases bills for high-use residential customers, typically with more discretionary uses, based on a rate design philosophy previously considered and rejected on numerous occasions by the Commission. This type of rate design is precisely the wrong message to send in an era when gas prices are soaring due to demand that is outstripping supply.

Q: What are your proposed alternative recommendations?

A: I recommend that a more uniform assignment of the increase be imposed on all customer classes, so that all customers bear a fair share of the increase. Within t he residential class, I recommend that the current rate design – with a customer charge to recover meter reading and billing costs, and a flat rate design to recover ll other costs be retained. This will keep Puget's natural gas rates competitive, prevent growth in electric heating demand which is adverse to the interest of all customers, and prevent undue hardship for smaller natural gas customers.

IV. WASHINGTON HAS A LONG HISTORY OF PROGRESSIVE RATE DESIGN DECISIONS, WHICH PUGET PROPOSES TO ABANDON

Q: Please briefly describe the history of rate design decision making in Washington State?

A: I have been involved in nearly every major rate proceeding in this state since the late 1970's. The Commission convened a generic proceeding on electric rate design issues in 1978, and has clarified the decisions made in that proceeding in many cases since that time. The Commission first considered natural gas rate design issues in 1986, in a Cascade proceeding, and has revised those findings in several proceedings since that time. My Exhibit JL-3 consists of a history of the cost of service and rate design decisions the Commission has made in the 26 years in which I have been engaged in regulatory analysis in Washington.

Q: Begin with electric cost of service analysis. What have been the key decisions the Commission has made in that area?

A: In the 1978 generic rate design proceeding (Cause U-78-05), the Commission made two important decisions that remain important elements of ratemaking to t his day. The first was to choose "embedded" over "marginal" cost methods for dividing costs between customer classes. The second was to reject "fixed/variable" classification methods in favor of the "peak credit" method that remains in effect and is used by Puget in its study in this proceeding.

A second set of important decisions was made with respect to transmission and cost allocation in the early 1980's. First, the Commission affirmed very clearly that transmission costs should be classified and allocated on the same basis as generation costs, recognizing that a utility has a choice between building resources in its service territory or at a distance; in the latter case, transmission facilities are needed to bring the power to the service territory. The decision of which resources to develop and where to develop them needs to be made on a basis that considers all costs consistently, and treating transmission as part-and-

parcel to generation is an appropriate way to do this. The Commission has reaffirmed these decisions as recently as 1992, stating:

> Commission Staff's position conforms with our continuing belief that "distribution-related" transmission lines are constructed to deliver energy as well as to meet peak demand. Thus, we reaffirm that transmission network costs should be classified as partly driven by demand and partly by energy, using the approved Peak Credit ratio.[1]

A third set of crucial decisions took place in the mid-1980's and into 1989, where the Commission determined that the only facilities that should be treated as customer-related are those which are customer-specific. The Commission soundly rejected several approaches that treated portions of the basic distribution infrastructure as customer-related.

> The Commission rejects the company's use of the zero-intercept method. The minimum system method, of which the zero-intercept method is a variant, is also rejected. Both methods are likely to lead to the double allocation of costs to residential customers and over allocation of costs to low use customers.[2]

It provided this direction most clearly in two Puget proceedings. First, in the Company's 1989 proceeding, the Commission stated:

> In this case, the only directive the Commission will give regarding future cost of service studies is to repeat its rejection of the inclusion of the costs of a minimum-sized distribution system among customer-related costs. As the Commission stated in previous orders, the minimum system method is likely to lead to the double allocation of costs to residential customers and over-allocation of costs to low-use customers. Costs such as meter reading, billing, the cost of meters and service drops, are properly attributable to the marginal cost of serving a single customer. The cost of a minimum sized system is not. The parties should not use the minimum system approach in future studies.[3]

[1] Docket No. UE-920499, Ninth Supplemental Order on Rate Design, P. 10.

[2] Cause U-83-26, Fifth Supp. Order, P. 33.

[3] Cause U-89-2688-T, Third Supp. Order, P. 71.

The Commission clarified this even further in the 1992 proceeding, when a group of large commercial customers (office buildings and supermarkets) sought approval of a similar methodology:

> The Commission finds that the Basic Customer method represents a reasonable approach. This method should be used to analyze distribution costs, regardless of the presence or absence of a decoupling mechanism. We agree with Commission Staff that proponents of the Minimum System approach have once again failed to answer criticisms that have led us to reject this approach in the past. We direct the parties not to propose the Minimum System approach in the future unless technological changes in the utility industry emerge, justifying revised proposals.[4]

Q: Does Puget's preferred cost of service study comply with these directives?

A: No, it does not. Puget has proposed that transformer costs be allocated primarily on a per-customer basis, and included in the definition of customer-related costs. The Company has cited no "technological changes in the utility industry" that justify this change. As I will discuss later, Puget's proposed change should be rejected, and the Commission should rely upon the Commission-basis study submitted by Puget, using the approved methodology (Exhibit ___(CEP-9).

Q: Turn now to electric rate design issues. What have been the key decisions the Commission has made in this area?

A: The seminal decision was in the generic rate design proceeding, where the Commission rejected so-called "lifeline" rates (which it defined as preferential rates based on income levels), and adopted the principle of "baseline" rates that provide each residential customer with an equitable share of the low-cost power on the system, with additional usage priced at higher levels.

This was amplified in later years, where the Commission ordered progressively larger increases to the end-block of service, moving that rate towards the cost of

new resources, while holding the rate for basic lights and appliances at rates that are consistent with the lower-cost resources on the utility system. I have shown the residential rates of Washington's three regulated utilities below, and Puget's proposal would result in by far the least progressive rate design, measured by the both the level of the customer charge and by the ratio of the tail block rate to the first block rate.

Most recently, this was enhanced in the joint testimony of the Commission Staff, Public Counsel, and ICNU in the current PacifiCorp rate investigation, Docket UE-032065. The parties agreed that the bulk of the increase should be recovered in the tail block of usage, with no change at all to the initial block. The proposed revenue requirement stipulation between the Commission Staff and PacifiCorp accepted that approach, and would result in the following residential rate changes (the positions of the non-stipulating parties is that no change in rates is allowed until the end of the rate plan period):

Table 2: Pacificorp Current and Proposed Residential Rates

PACIFICORP	CURRENT	STIPULATION	CHANGE %	RATIO
Basic Charge	$4.50	$4.75	5.5%	
First 600 kWh	$.04285	$.04285	0%	
Over 600 kWh	$.06025	$.06766	12.3%	1.58

Similarly, when Avista raised rates sharply in the wake of the west coast energy crisis, the Commission protected the smallest users by imposing no increase on

[4] Docket No. UE-920499, Ninth Supp. Order on Rate Design, P. 11.

the customer charge, and applying a fairly uniform $/kWh surcharge to the three blocks of the energy charge; the deferral surcharge was then imposed on a steeply inverted basis to the three rate blocks in Avista's Schedule 93.

Table 3: Avista Pre-Crisis and Current Residential Electric Rates

AVISTA	PRE-CRISIS	CURRENT	CHANGE %	RATIO
Basic Charge	$5.00	5.00	$0.00	
First 600 kWh	$.03606	$.04927	37%	
Next 700 kWh	$.04343	$.05868	35%	
Over 1300 kWh	$.05246	$.0702	34%	1.42

Q: Has Puget's rate filing conformed to these long-Standing principles of progressive rate design?

A: No. Puget has proposed a much more radical change in its rate design, dramatically reducing the rate inversion, and actually providing a reduction in the rate for mid-sized users, as shown below:

Table 4: PSE Current and Proposed Electric Rates

PSE PROPOSAL	CURRENT	PROPOSED BY PSE	CHANGE %	RATIO
Basic Charge	$5.50	6.50	18%	
First 600 kWh	$.065613	$.073454	12%	
Next 200 kWh	$.08203	$.073454	(11%)	
Over 800 kWh	$.08203	$.085534	4%	1.16

Puget's proposal effectively abandons the progressive "baseline" principle in favor of imposing the highest rate increases on the smallest residential users. As shown above, Puget's proposal results in by far the lowest ratio between the end-block rate and the initial block rate of the residential rate design of the three

regulated electric utilities. The Puget proposal is counterproductive, consumer-hostile and a radical departure from well-settled policy.

Q: How does Puget's proposal affect customers using natural gas for space and water heat?

A: Puget's proposal is particularly egregious, as I explain later, because Puget has also proposed imposing severe increases on natural gas users, who are the majority of the small electric users. Under Puget's proposals, natural gas space and water heating customers receive a total energy bill increase in excess of 20%, while electric heat customers receive only about a 6% increase in their energy bills.

Q: How does Puget's proposal affect low-income energy consumers?

A. The Puget proposal is also particularly harsh for low-income consumers. While these consumers pay a higher proportion of their income for energy services than do other consumers, they use significantly less energy than the average consumer. Puget's rate design imposes higher increases on these customers, who can least afford the costs. This will create revenue stability problems for Puget that could be mitigated if the Commission adopts my recommendations and orders a continuation of historical ratemaking practices. I discuss this at greater length below, in my detailed discussion of residential rate design.

V. PUGET'S DECLINING USE PER CUSTOMER IS A GOOD THING, SAVING ALL CUSTOMERS FROM ENERGY SCARCITY AND COST INCREASES. IT IS NOT A "BAD THING" TO BE PUNISHED WITH REGRESSIVE RATE DESIGN.

Q: What is the stated basis for Puget's proposed radical changes in electric and natural gas rate design?

A: The Company, through the testimony of Mr. Heidell, states that the declining usage per customer that the Company has experienced in the past justifies shifting costs from larger users to smaller users. He makes this argument for both the gas system and the electric system.

Q: Is this concern justified?

A: No, it is not, and for several reasons. First and foremost, if the use per customer were *not* declining, all customers would be seeing even larger increases in energy bills as expensive new power and natural gas resources would be required to serve customer demands. This decline in usage saves everyone money.

Secondly, essentially all of the declining usage per customer is explained by the fact that new customers – new homes and apartments – use less electricity and natural gas than existing, less-efficient homes. As new customers are added each year, the average usage on the system declines. However, Puget's line extension policies for both gas and electric service are based upon the incremental expected usage of *new* customers, not the average usage of existing customers. The line extension policy assures that new customers add as much to revenue as to cost.

Q: What would have occurred if the use per customer had *not* declined over the past twenty-five years?

A: In 1979, Puget's average usage per residential customer was 16,134 kWh/year. In 2003, this had declined to 11,528 kWh/year. During the same period, the number of residential customers had increased from 458,222 to 854,088. If the use per customer had remained unchanged, Puget would have needed an *additional 4 billion kWh* of electricity to serve this load. This is nearly twice as much as the actual growth that occurred in the residential class. In effect, about 62% of Puget's residential load growth was met with lower usage per customer,

while only 38% required new supply resources. Looked at another way, Puget would have required *two more* generating facilities the size of the Tenaska facility – and the associated cost and financial risk of this additional generation – in order to meet this load.

Given the limited supply options, the high cost of new generation, the high cost of natural gas, and the controversy associated with siting new generating resources, the lower use per customer is unambiguously a benefit for all customers, new and existing, residential and non-residential.

Q: Has Puget adequately defended its assertion that new customers are leading to income attrition?

A: No, it has not. In several data requests, we asked Puget to compare the load it is experiencing from new customers to the expected load per customer that underpins the line extension policy. The Company has apparently not kept data by "housing cohort" that would enable it to even determine if the use per customer of new customers is significantly different from that assumed in computing line extension allowances, as indicated by its response to Public Counsel Data Requests Nos. 96 and 97.

All the company has shown is that the average use is declining. That is not surprising, given that the energy code was improved in 1995, and new homes built since then are more efficient than those built earlier. All the declining average use shows is that the influx of efficient new homes brings down the average – it does *not* indicate whether or not these new homes are contributing as much to revenues as to expense. The Company has not done that analysis.

Q: If new customers are causing income attrition, what is the proper response?

A: The proper response, if new customers are contributing less to revenue than they do to cost, is to implement new hook-up standards and line extension charges to ensure that new customers do not adversely affect their neighbors. A parallel example of this principle at work is when municipalities throughout Puget's service territory implement "impact fees" in order to assure that growth pays for growth, under the terms of the Growth Management Act. In Olympia, for example, the impact fees and general facility charges associated with a new home are approximately $14,000.

Q: Has Puget sought to update its gas or electric line extension policies for electricity or natural gas in this proceeding?

A: No, it has not.

Q: What is the effect of Puget's approach in this proceeding – shifting the cost of growth onto existing customers?

A: If in fact Puget's allegation that declining use per customer is causing income attrition is true, the problem lies with a line extension policy that provides more company investment than the rates can support to these customers. The effect of the Company's proposed solution is to raise rates for existing consumers, when these consumers quite probably have paid line extension charges and rates fully adequate to fund their own impacts on the system. Because low-income persons seldom live in new homes, this proposal has the effect of shifting costs from middle-income and higher-income individuals onto low-income households. A better solution would be to revisit the line extension policy, to ensure that growth

is still paying for growth as it has in the past through periodically updated line extension analyses.

VI. UTILITY DISTRIBUTION SERVICE IS A LOW-RISK ENTERPRISE, AND THIS SHOULD BE RECOGNIZED IN SETTING RATES

Q: Is the financial risk associated with all parts of the service Puget provides equal?

A: No. Puget is really involved in three distinct aspects of utility service, each of which has different attributes and different financial risks. Mr. Hill, in his testimony, discusses the different financial risks associated with utility service, and I pick that discussion up where he leaves it; my testimony carries those financial risk differentials from the revenue requirement analysis down to the class rate level.

First, Puget is a natural gas distribution utility. In this role, the overwhelming majority of its service is to residential consumers, who are a very stable revenue base. This is a low-risk business, and should be viewed as having a very low cost of capital.

Second, Puget is an electric distribution utility. In this role, the overwhelming majority of its service is to residential and small commercial consumers, who are a very stable revenue base. This is also a low-risk business, and should be viewed as having a very low cost of capital.

Finally, Puget is in the electricity supply business, providing electricity to residential, commercial, and industrial customers. The financial community has

come to recognize this as a much higher risk business than electricity or natural gas distribution. This should be viewed as having a significantly greater financial risk, and therefore a significantly higher cost of capital than the electricity or natural gas distribution areas.

Q: How does this risk differential manifest itself in Puget's cost of capital?

A: The rating agency Standard and Poor's describes Puget's "Business Position" as a "5" on a scale of 1-10, but notes that, in general, the distribution business has a "Business Position" that is about "3" while the power supply business has a much higher risk position of about "9."

I have included in my Exhibit JL-4b the Standard and Poor's publication from which this information is derived. A higher risk ranking requires a higher equity capitalization ratio in order to support a given bond rating, according to Standard and Poor's. The table below shows the differentials required for a BBB rating, the bond rating range that Puget seeks to maintain.

Table 5: Differential Capital Structure by Business Segment

Differential Capital Structure By Business Segment	Business Position	Total Debt To Capital	Equity (Common And Preferred) Needed
Gas and Electric Distribution	3	55% - 65%	35% - 45%
Energy Merchant / Developers	9	40% - 50%	50% - 60%
Puget Sound Energy Integrated	5	50% - 60%	40% - 50%

Source: Standard and Poor's; Exhibit ___(JL-4b)

Q: Is the "business position" rating of "5" assigned by Standard and Poor's, or is it your own estimate?

A: It is included in the Standard and Poor's document, at page 11.

Q: If one were to use this information to compute the revenue requirement of the three different business segments in which Puget engages, how would the calculation logically be performed?

A: The Company's gas rate base would be subjected to the "gas and electric distribution" capital structure. The company's electric transmission and distribution rate base would be subjected to the "gas and electric distribution" capital structure. The company's electric supply rate base would be calculated using the Energy Merchant / Developers capital structure.

Q: Have you performed this calculation?

A: Yes, I have done so in my Exhibit JL-4a, using both the Company's proposed capital structure and rate of return, and Mr. Hill's proposed capital structure and rate of return. I have computed the capital structure and rate of return for each business segment in such a way that the total equals the overall rate of return recommendations submitted by the respective cost of capital witnesses.

Q: What is the result of this analysis?

A: Unbundling the cost of capital by business segment shows that the cost of providing distribution service is lower than if a composite cost of capital is used, and the cost of providing electricity supply is higher than if a composite cost of capital is used. The table below summarizes this result:

Table 6: PSE Unbundled Cost of Capital by Business Segment

Unbundled Cost of Capital	Puget (Cicchetti)	Public Counsel (Hill)
Composite Cost of Capital (per witness)	9.11%	8.01%
Derived Generation Cost of Capital	9.66%	8.34%
Derived Distribution Cost of Capital	8.93%	7.90%

Q: Can this information be used to compute the class revenue requirements?

A: Yes. The Company's cost of service study for the electric system shows the "production" rate base separate from the other elements of rate base. In my

exhibit, I have calculated the unbundled costs of carrying this rate base, and compared this with the result of using a composite cost of capital.

Q: What is the result of this analysis?

A: The result is about a 1% reduction in the cost of providing natural gas service to all classes (which is characterized by low-risk distribution plant), and a 0.3% increase in the cost of providing residential electric service, increasing for the large-use customer classes. This *differential* is essentially identical for the two cost of capital witnesses assumed capital structures. There is a corresponding increase in the cost of providing electric service to larger-use customer classes (which, in turn, are characterized by a larger share of high-risk generation plant assigned to them). These calculations are set forth in Exhibit ___(JL-5).

Q: Is this relative risk a new concept?

A: No, not really. As early as 1979, Puget reported in its annual report:

> The large proportion of residential and commercial sales relative to industrial sales continues to provide an additional measure of stability for the Company should the generally favorable economic outlook for the region prove to be overly optimistic.[5]

At the time this was written, many of us agreed with the logic, and sought to demonstrate a risk relationship between customer classes, justifying a differential rate of return by class. In the early 1980's, Washington Water Power presented testimony quantifying a class-based risk differential.[6] For a variety of reasons, it was not adopted at that time. In retrospect, I believe that Standard and Poor's has identified the driver behind this differential, as not the nature of the *class*, but

[5] 1979 Puget Power Annual Report to Shareholders, P. 14.

rather the nature of the *property* that the utility invests in to serve the class. Those classes using a high preponderance of distribution assets have lower risk characteristics, simply because:

a) Distribution plant is added as needed (I am aware of no significant "excess capacity disallowances" for distribution plant),

b) Distribution plant is extremely reliable (I am aware of no significant rate base disallowances of non-operational distribution plant, as have been common for generating facilities);

c) Distribution plant does not carry with it fuel or purchased power cost risk.

Nearly all of the major disallowances in this state, and indeed, in every state of which I am aware, have dealt with generation: examples include the Skagit, Pebble Springs, and WPPSS nuclear plants for Puget in the 1980's, and more recently, the outage of the Hunter generating facility for Pacific Power and or the Tenaska fuel cost disallowance for Puget. Each of these had costs to the utility measured in the tens of millions of dollars. It is almost inconceivable that a distribution plant disallowance could ever reach those proportions. Lower risk of cost non-recovery quickly translates into a lower cost of capital.

Q: How do you recommend the Commission use this information in this proceeding?

A: I recommend that the results of the class cost of service studies prepared by the Company be adjusted in the future to reflect the use of an unbundled capital structure. I further recommend that the Company be directed to provide cost

[6] Cause U-83-26, Testimony of A. Gerald Harris.

study results with the capital structure and cost of capital unbundled between distribution and generation in future rate proceedings. In this proceeding, I use this data in my analysis of the cost study results, and recommend different rate adjustments by class than the Company proposes in part based upon this analysis.

VII. ELECTRIC COST OF SERVICE STUDY AND RATE SPREAD

Q: What is your primary recommendation with respect to the electric cost of service study?

A: Puget has submitted two studies, sponsored by Ms. Paulson. The first, Exhibit ___(CEP-8) is a Company Proposal, and allocates line transformer costs in a new and different manner than that previously approved. The second , Exhibit ___(CEP-9) is done on the basis previously approved by the Commission. I recommend that the Commission Basis study be used as the basis for rate spread decisions in this proceeding. I further recommend that a "range of reasonableness" be established at a 90% to 110% parity ratio; any classes within this range of reasonableness would receive the system average rate increase, and those outside the range would get differential rate adjustments.

Q: Please compare the difference in results between the two studies as prepared by Puget.

A: The table below compares the parity ratios of the two studies, and the parity ratios produced by the modifications to the Commission Basis study that I discuss and recommend in this testimony.

Table 7: PSE Electric Cost of Service Results

Class	Commission Basis Study	Commission Basis Study Adjusted for Retail Wheeling A&G and Unbundled Capital Structure	New Methodology Proposed by PSE
Residential	99%	101%	96%
Small GS 24	104%	104%	102%
Medium GS 25	108%	105%	115%
Large GS 26	96%	94%	108%
Primary	95%	93%	99%
Retail Wheeling	120%	96%	125%
High Voltage	90%	86%	90%
Lighting	86%	88%	86%
Resale	90%	83%	94%

Q: Do you have any generic concerns about the results of the two studies prepared by the Company?

A: Yes, I have two. First, the Company study does not unbundle the cost of capital, as I discussed earlier and recommend. The second relates to the assignment of administrative and general costs to the retail wheeling class.

Q: Please describe the second issue, relating to administrative and general costs?

A: The Company assigns high-level personnel to work with and meet with large-use customers. This is natural and normal. The administrative costs of providing officer and manager-level assistance are very different from the comparable costs of customer service personnel who assist small customers. Under the "bundled" service cost of service analysis, this was indirectly reflected by the assignment of administrative costs to the classes based on total O&M expenses, and these

included production-related expenses. Under the new PSE studies, the production O&M expenses are no longer assigned to the retail and therefore a significant decline in administrative expense assignment has occurred.

Q: Has the Commission previously addressed this issue?

A: Yes. When natural gas transportation service was introduced, and natural gas cost studies were modified to recognize this new service, the Commission determined that a portion of A&G expenses should be allocated on the basis of throughput, and a portion of these costs on a subtotal of other operation and maintenance costs. This decision was made in the Company's 1994 rate case, where the Commission stated:

> The Commission finds persuasive Public Counsel's observation that A&G functions are not devoted to O&M activities. It believes that the Public Counsel proposal best matches expense to benefit.[7]

I believe that the same adjustment is now required in the electric cost of service study, in order to recognize that significant management attention is given to large volume customers, and the share of distribution expenses they are assigned does not capture this.

Q. Have you estimated the effect of making this change?

A: Yes. My Exhibit JL-5 shows this estimate, combined with the effect of unbundling the capital structure. It shows that applying the same methodology approved for natural gas to the retail wheeling class reduces the parity ratio for this class to approximately 96% using the Commission-Basis methodology, and to 99% using the Company's proposed new methodology. The revenue to cost ratio

[7] Docket UG-940813, Fifth Supplemental Order, P. 15.

for the small-use classes (7, 24, 25, Lighting) would be correspondingly increased. If this were done, the class would be assigned an above-average increase, not the below-average increase in rates proposed by the Company.

Q: Turning to the proposed change in transformer cost allocation, please explain why the Company proposal is inappropriate.

A: The Company proposal is, in effect, a regurgitation of the long-discredited "minimum system" method, and suffers from the same flaws that caused the Commission to reject this approach in the past. First and foremost, the Company has double-counted the cost of providing transformation to the residential class, by first assigning the costs of approximately 85% of the transformers providing service to a single class directly to the class, and then assigning approximately 70% of the remaining transformer cost to the residential class as well. The theoretical problem with this is that the load served by the directly-assigned transformers needs to be netted out when determining the allocation factors for the residual amount, and the Company does not appear to have done this. The result is to double-count the cost of transformers for the residential class. This is precisely the problem the Commission was considering when it concluded two decades ago that:

> The Commission rejects the company's use of the zero-intercept method. The minimum system method, of which the zero-intercept method is a variant, is also rejected. Both methods are likely to lead to the double allocation of costs to residential customers and over allocation of costs to low use customers.[8]

Q: Is there an additional problem with the Company's proposed treatment of transformers?

[8] Cause U-83-26, Fifth Supp. Order, P. 33.

A: Yes. While the Company states that 85% of the transformers serve a specific class and can be directly assigned, it's response to Public Counsel Data Request No. 87 shows that there is a very clear relationship between the size of transformers and the cost of those transformers. My own statistical analysis of the data shows that there continues to be a linear relationship between transformer capacity and transformer cost, with capacity explaining over 80% of the variation in the cost of different-sized transformers. This relationship is the underlying basis of the current demand-driven classification of transformer costs.

The Company readily admits that there is a clear relationship between customer density and transformer investment per customer. [Heidell, P. 18]. In fact, about 52,000 – about 25% of the total -- of the Company's line transformers serve only one single residential customer; these are typically located in rural and semi-rural areas. [Response to PC DR No. 114]. The effect of the Company's proposal – first to directly assign most transformer costs, and then to begin including those costs in the monthly customer charge, has the effect of shifting transformer costs to multi-family building residents. These multi-family residents are the very customers who cost the least to serve, due to their high customer density. The multi-family sector also has a high concentration of low-income and fixed-income residents, who can least afford a significant increase in their bills.

Further, the Company's response to Public Counsel Data Request No. 114 shows quite clearly that there are a huge number of transformers with both residential and non-residential customers served by them. A couple of examples would

include the common-use areas of an apartment complex (Schedule 24) and the individual dwelling units (Schedule 7), and residential apartment units upstairs from retail spaces in urban settings such as downtown Olympia.

Q: What is the effect of the Company's proposed methodology?

A: The effect is to shift costs from larger customers to smaller customers, and in particular, from rural and business customers to urban multi-family dwellers. This is not appropriate from a cost perspective. It also imposes additional costs on many low-income and fixed-income residents of multi-family units who can least afford these increases.

Q: What is your rate spread recommendation?

A: All of the major classes fall within a 90% to 110% range of reasonableness, except for Retail Wheeling. Depending on the treatment of administrative and general expense, the retail wheeling class is either above or below this range. I recommend a uniform percentage increase to all classes. The Company should be directed in the next proceeding to examine the allocation of administrative and general expenses to the retail wheeling class of customers.

VIII. ELECTRIC RATE DESIGN

Q: Please turn now to electric rate design. What are the company's principal recommendations?

A: The Company is proposing to increase the monthly customer charge by 18%, to apply a 12% increase to the first 600 kWh/month, an 11% decrease to usage from 600 kWh to 800 kWh, and then a 4% increase to usage over 800 kWh/month. Basically, the Company proposal puts virtually the entire increase on the first 600

kWh of service. As Mr. Heidell's Exhibit JAH-6 shows, the largest users get the smallest increases:

Table 8: PSE Proposed Electric Increase by Usage Level

Monthly kWh	Proposed Increase
400	16%
600	16%
1000	8%
1500	7%
2000	6%

Source: Exhibit ___ (JAH-6, P. 1)

Q: What is your recommendation with respect to residential rate design?

A: I recommend that the customer charge remain unchanged, and that the rate increase be applied uniformly to the two energy blocks, retaining the current relationship between the blocks. I have constructed examples of this at both the Company's requested revenue level, and an increase that is one-half of this level as examples:

Table 9: PSE Proposed and Alternative Electric Rate Design

Rate Element	Current Rate	PSE Proposal	Alternative at PSE Revenue Level	Alternative at ½ PSE Revenue Level
Basic Charge	$5.50	$6.50	$5.50	$5.50
First 600 kWh	$.06561	$.07345	$.07082	$.06822
Next 200 kWh	$.08203	$.07345	$.08854	$.08528
Over 800 kWh	$.08203	$.08553	$.08854	$.08528

The current BPA residential exchange credit applies to each of the rate blocks shown, reducing the effective rate to the consumer by $.0174/kWh.

Q: What is the basis of your recommendation to hold the customer charge at the current level of $5.50/month?

A: The Company's own cost study shows that the cost of the elements the Commission has previously determined to be customer-related come to only $5.54 per month.[9] At Mr. Hill's proposed rate of return and capital structure, this drops to approximately $5.30/month. The current rate is fully compensatory.

The Company's proposal to include the transformer in the basic charge is inappropriate, and should be rejected.

Q: What is the basis for your recommendation with respect to apportioning the increase between the two rate blocks?

A: I recommend that the current rate design be retained, with a 600 kWh initial block, and that an equal percentage adjustment be applied to both rate blocks. There are several reasons why this is a more appropriate rate design than Puget has proposed.

First and foremost, the Company has a finite supply of low-cost electricity from its hydroelectric resources, and from the Colstrip 1 and 2 power plants. This power costs less than two cents/kWh to produce. Any additional power must come from higher cost resources, costing four to six cents/kWh in the current market, regardless of whether it is wind, natural gas, or coal in origin. An inverted rate with a three-cent distinction between the rate blocks is justified based on this cost differential. This cost differential between old and new

[9] Exhibit CEP-9, P. 21, L. 44.

resources was the original basis of the Commission's "baseline rate" decision in U-78-05, and remains equally true today.

Second, the load characteristics of larger residential users are significantly more expensive to serve. Large use customers include those with electric space heat, a usage that is very season and peak-oriented. The Company maintains expensive peaking generators, adequate transmission facilities, and oversized distribution facilities "waiting" for a cold snap to occur. Under the Company's proposed rate design, the cost of these peaking facilities is assigned primarily to the early blocks of usage, while under my alternative these costs are paid by the customers that cause the costs to be incurred.

Q: Have you done an analysis of the relative costs of serving different residential usage blocks?

A: Yes. During the development of conservation program design following the last rate case, Puget provided detailed cost estimates for generation, transmission, and distribution capacity. We relied on the same data in preparing the evaluation of the Company's time-of-use rate pilot program. Based on that data, we computed the cost of meeting lights and appliances usage, water heating usage, and space heating usage. Those figures serve as the basis for the Company's current energy conservation programs. The analysis prepared at that time indicated that the incremental cost of serving residential space heat exceeded $.09/kWh, while the incremental cost of serving residential lights and appliances usage was only about $.05/kWh. This incremental cost differential of $.04/kWh is independent of any cost-based differential due to available low-cost resources such as hydro.

Puget has not supplied any information in this proceeding updating the load factors or load shape of residential consumption that would cause me to change my conclusion that upper block usage is much more expensive to serve than residential lights and appliances usage.

Q: Could the two concepts be combined – providing both a low-cost resource block, and a load-factor based rate differential?

A: Yes. Based on the analysis in 2002, the distribution cost was about $.02/kWh for non-heating usage, and about $.06/kWh for space heating usage. In addition, as I have previously described, the Company's low-cost resources have costs of about $.02/kWh compared with average cost of other resources in excess of $.05/kWh. Combining these two factors would lead to a block differential of about $.07/kWh, consisting of a $.03/kWh differential for power supply and a $.04/kWh differential for transmission and distribution costs. Under this approach, the appropriate cost-based rate design would be something like the following at a rate increase level one-half of the Company's request:

Table 10: Cost-Based Inverted Rate Incorporating Both Load Factor and Baseline Rate Design Concepts

Customer Charge	$5.50
First 600 kWh/month	$.04435
Additional kWh/month	$.11435

Q: Are you recommending this type of cost-based rate design?

A: No. It would cause too much dislocation for large-use customers. The Commission has consistently held that customer impact is an important consideration in rate making. I agree with that principle, and it is one reason to oppose the Company's radical rate design proposals. I believe that rate consistency and gradualism are important concepts, and moving to this type of

rate design would fail these regulatory precepts, just as the Company's proposals would. However, a rate of this type would be cost-based, and the Company's proposed rate design deviates a great deal from this ideal cost-based rate.

Q: What has the Commission's policy been with respect to the design of residential rates relative to the costs of new generating resources?

A: The Commission has consistently favored forward-looking rate design principles. As early as the generic rate proceeding, U-78-05, the Commission expressed a preference for spreading rates between classes based on forward-looking embedded costs, but designing rates within classes recognizing the high cost of new resource development. In Cause U-87-1338, the Commission stated this pretty clearly:

> Furthermore, the design of rates (i.e. rate structure) should, to the extent possible, convey to consumers a price signal that reflects the expected costs of meeting future electric loads. The assumptions underlying rate design should be consistent with those used in the Company's least-cost planning process.[10]

The Company's rate design proposals in this proceeding utterly fail this concept. The capacity-related costs of serving new load are very real, and the load factor differentials between steady lights and appliances load, on the one hand, and more sporadic water heating and space heating loads, on the other, remain very significant.

Q: What is the basis that the Company gives for its proposal to shift costs to smaller-use customers?

A: The Company advances two reasons for this regressive rate proposal. The first is a flawed analysis that usage per customer is decreasing, and a conclusion from

[10] U-87-1338-AT (PacifiCorp) Second Supplemental Order, P. 14.

this that the Company is suffering income attrition as a result. The second is a proposal to recover a portion of transformer costs in the monthly customer charge.

Q: Why do you call the Company's analysis "flawed?"

A: Mr. Heidell shows accurately that Puget's average usage per customer is decreasing. He concludes from that trend an assumption that new customers are not contributing as much to revenue as to cost, and that changing the rate design to penalize small users is the solution. In fact all that his analysis shows is that new customers have lower usage than existing customers, and that adding a large number (20,000 – 30,000 per year) of new customers to the mix each year causes a decline in average usage. This fact only demonstrates that it is important that the Company's line extension policy accurately recognize the typical usage of new customers. New customers have more efficient appliances, most have natural gas space and water heat, and all are subject to stricter energy codes than were enforced in the past. But the line extension policy should recognize this fact, and to the extent that new customers will not pay for their distribution facilities through rates, they should pay for the unrecovered costs through the financial impact analysis conducted as part of the line extension policy.

If usage among *new* customers is declining gradually over time (a fact not in evidence, and one that Puget could not substantiate in response to discovery), then the line extension allowance should also be declining. If, as I believe to be the case, new customer usage is relatively stable over a multi-year period, but is lower than historical levels due to changes in fuel choice and appliance efficiency,

then it is mathematically obvious that the average usage will decrease. It is not at all evident that the incremental usage of new customers is deviating from the levels assumed in the line extension policies. A simple numerical example shows the effect of "dilution" of the existing customer base, even though the incremental usage per customer is stable.

Table 11: Illustration of How Stable Usage of New Customers Can Reduce Average Usage of All Customers

YEAR	CUSTOMERS	USE PER NEW CUSTOMER	TOTAL USAGE	AVERAGE USAGE
1	100	Base Year	1,000,000	10,000
2	120	5,000	1,100,000	9,166
3	140	5,000	1,200,000	8,571
4	160	5,000	1,300,000	8,125
5	180	5,000	1,400,000	7,778

As is evident in this simplified example, even though the usage per new customer is stable throughout the example, the average usage per customer is steadily declining. This is precisely what is shown by the graph on Mr. Heidell's Exhibit ___(JAH-7). There is simply no information whatsoever supplied by the Company to support an assertion that existing customers are not paying their cost of service through current electric rates and previously paid charges. Nor is there a basis to assert that new customers are not paying their cost of service through a combination of line extension charges and usage charges under the current rate design. Just because average sales per customer are declining does not mean that the Company is suffering income attrition.

Mr. Heidell does not show that customers once attached to the system have decreasing usage over time. There is no doubt that usage of existing customers *changes* over time due to many factors, including those outlined in the table below.

Table 12: Example Causes Of Increasing And Decreasing Usage Per Customer

CHANGES CAUSING INCREASED USAGE PER CUSTOMER	CHANGES CAUSING DECREASED USAGE PER CUSTOMER
Increasing floor space (people put additions on existing homes)	Fuel switching (primarily oil and electricity to natural gas)
Air conditioning (increasingly common)	More efficient appliances and lighting systems
Increased appliance saturation (computers, home entertainment systems, parasite transformer loads)	Decreasing occupancy per household

What is not at all clear is whether, at the present time, the net effect of these is to cause average usage for existing homes to increase or decrease. I asked the Company for any data it had on this issue, and it had no useful data in response (PC Data Request Nos. 96 and 97). In order to support its argument that the decline in average usage is caused by reduced usage by existing customers (therefore causing income attrition) rather than by stable usage at a lower level by new customers (therefore requiring examination of the line extension policy), the Company needs this type of data. It has not assembled such data, and has not submitted any analysis in support of its assertion in this proceeding.

Q: Does this type of data exist in the energy industry?

A: Yes. For example, the Northwest Power Planning Council has estimated that a new home built to today's energy code will use dramatically less electricity than was the case for previous energy codes.[11] The US Department of Energy Residential Energy Surveys shows increasing saturation of home office equipment, air conditioning, and other appliances in homes.[12] This increase in the number of uses of electricity tends to offset improvements in the efficiency of electricity usage. For example, it shows that there are more than 30 million homes that were built prior to 1980 that have personal computers; each of these is quite obviously an "incremental" use, since essentially *no* homes had personal computers in 1979. This type of usage growth tends to offset efficiency improvements in existing homes.

Q: Turning to the company proposal to begin reflecting the transformer charge in the monthly customer charge, is this an appropriate rate design approach?

A: No it is not. First and foremost, a transformer is most often a joint facility, used by more than one customer. About three-quarters of the transformers on the system are jointly used. The Commission has clearly enunciated that customer-related costs should only include those costs that are customer-specific, stating:

> Costs such as meter reading, billing, the cost of meters and service drops, are properly attributable to the marginal cost of serving a single customer. The cost of a minimum sized system is not. The parties should not use the minimum system approach in future studies.[13]

[11] Northwest Power Planning Council, Northwest Conservation and Electric Power Plan, 1983, Page 7-3.

[12] U.S. Energy Information Administration, , 2001 Residential Energy Consumption Survey, 2001 Housing Characteristics Tables.

[13] Cause U-89-2688-T, Third Supp. Order, P. 71.

Puget has effectively tried to "back-door" reconsideration of a proscribed methodology by giving it a new name and description. The proposal is particularly hostile to two groups of customers: First, rural customers who paid line extension charges that included the cost of their transformers would now be expected to pay for those facilities a second time through rates. For a very large group of customers, transformers serve a single user. Second, multi-family customers that have the lowest transformer costs per customer, due to many customers sharing a single transformer sized to meet their coincident demands would be assessed a portion of the cost on a per-customer basis at the same rate as single-family residential customers, not on a usage-basis. The multi-family residential subclass includes many low-income and fixed-income consumers.

IX. NATURAL GAS COST OF SERVICE STUDY

Q: Please summarize your review of the Company's natural gas cost of service study?

A: The Company study deviates in one important way from previous direction given by the Commission. While the Commission has directed that three years of peak demands be used to establish the "peak day" upon which peak-classified costs are allocated, the Company has used only a single day. This difference is inappropriate for several reasons, and should be rejected. The Company has re-run its analysis with this corrected, at my request, and the results show that the residential class is paying its allocated cost of service. However, both the Company study and the revised study place most classes within a "range of

reasonableness" that dictates that a uniform percentage increase be applied to all major customer classes.

Q: What do the results of the various studies show?

A: The table below shows the parity ratios from the Company's study and from the study we asked the Company to run using our assumptions. The Company's response to Public Counsel Data Request No. 153 is included in my Exhibit ___(JL-7).

Table 13: Comparison of Company and Commission-Basis Gas Cost Of Service Study (Including Gas Costs)

Class	Company Study	Revised Study
Residential	98%	99%
C&I Small	107%	106%
C&I Large	109%	103%
Interruptible 85	98%	96%
Interruptible 86	102%	95%
Interruptible 87	98%	96%
Transportation	154%	143%
Special Contracts	69%	67%
CNG	20%	20%
Rentals	53%	53%

Source: Exhibit ___ (CEP-3), P. 2; Exhibit ___(JL-7), PSE Response to PC DR No. 153, P. 2; Note: PSE did *not* remove rentals from revenue, expense and rate base as requested.

Q: Why is a multi-year measurement of peak demand most appropriate?

A: The Company provides both firm and interruptible service to customers, and the system is designed to meet the firm demands; interruptible customers receive service when the system is not fully obligated to firm customers paying higher prices. In cold years, interruptible customers are subject to more frequent

curtailment, while in warmer years, they may receive uninterrupted service. The use of a multi-year measurement of peak demand ensures that interruptible customers pay for their average usage of the system over a range of weather conditions. The Company's proposed change has the effect of shifting costs to firm customers associated with facilities that provide service to interruptible customers most of the time.

Q: What is the history of this issue?

A: In a 1990 proceeding, the Company proposed use of a single "design day" for defining peak demand, and allocated peak-demand related costs on the basis of this hypothetical demand. The Commission rejected this, in favor of a staff recommendation to use the five highest days of usage in each of the three most recent years. The Commission stated at that time:

> The Commission rejects the company's proposal to allocate demand-related costs on the basis of a single peak day. A figure averaging several days for several years is more likely to avoid wide swings from year to year due to unusual weather conditions that are unlikely to occur frequently.[14]

Initially, this referred to the five day consecutive period with the highest demand. Subsequent to that, in 1992, the Commission revised this to include the five highest days whether consecutive or not. The Commission has not, to my knowledge, revisited this issue since that time.

[14] Docket No. UG-901459, Third Supp. Order, P. 8

The Company's proposed change, which they do not explain or defend, deviates from the Commission-approved methodology, is inappropriate, and should not be accepted.

Q: Is there an issue with the Company's proposed rate increase for rental water heaters and conversion burners that affects other classes?

A: Yes. In the settlement and stipulation from the 2002 rate proceeding, the parties agreed to a large increase in rates for rentals, and the Company agreed to accelerated depreciation of the rental rate base, with a clear target of having that rate base decline to where no further subsidy would be required after five years. The Company agreed that if it filed a rate proceeding prior to that time, it would remove rental rate base and expense from the filing. It has not done so.

Q: What is the correct response to this?

A: In computing the revenue deficiency in this proceeding, the revenues needed to bring Rentals to a 100% parity ratio should be factored into the Company's revenue for this class and for the system. No changes in rates should be applied to rentals, and no other class should bear any part of the cost of providing rental service. The effect of this will be to mitigate rates for all classes.

Q: Please summarize your recommendation on the natural gas cost of service study.

A: The Commission should reject the Company's proposed modification to the cost of service study, and utilize the results of the Commission-Basis study included in my exhibit. Based on that study, the Commission should order a uniform percentage increase to all customer classes except for Rentals, which are exempt from this proceeding.

X. NATURAL GAS RATE DESIGN

Q: Please turn now to residential natural gas rate design. What is the Company proposing?

A: The Company is proposing to increase the customer charge from $5.50 per month to a total of $14.00 per month, an increase of 155%. This is partially offset by a proposed reduction in the per-therm margin rate from $.26 to $.21, about 20%.

Q: What is the effect of this proposed rate change?

A: The impact is to shift costs from large residential natural gas users to small users. A typical small gas user, with 50 therms of usage per month (600/year, about 80% of the average usage) would pay 13% more, while a large user consuming 150 therms/month would pay only a 1% bill increase.

Q: What alternative do you recommend?

A: I recommend that the customer charge be unchanged, and that any allowed increase be reflected in the per-therm margin rate. This will ensure that all users share in the increase, and that energy conservation efforts are not dampened. I have developed such a rate in my Exhibit JL-8, and the results are depicted below. I have not examined the cost of gas assumptions made by the Company.

Table 14: Comparison of PSE Proposed and Alternative Gas Rate Design

Rate Element	Current Rate	PSE Proposed	Alternative At PSE Revenue Request	Alternative At 50% Of PSE Revenue Request
Customer Charge	$5.50	$6.50	$5.50	$5.50
Facilities Charge	None	$7.50	None	None
Distribution Charge	$.26113	$.20901	$.3275	$.29345
Cost of Gas	$.55440	$.55613	$.55613 (Prudence Not Examined)	$.55613 (Prudence Not Examined)

Q: What are the problems with the Company's proposal?

A: The Company's proposal suffers from several problems. First and foremost, it would adversely affect small natural gas users. Second, it would effectively double-charge many residential users for facilities that they have paid for already through the Company's line extension charges. It is anti-competitive, and would likely cause an increase in reliance on electric space heat, particularly in the condominium sector. It would reduce natural gas conservation efforts at a time when the United States is suffering from soaring natural gas prices caused by demand outstripping supply.

Q: Please describe the issue with respect to the line extension policy and how the Company proposal results in double-charging.

A: The natural gas line extension policy uses a formula to determine how much of the distribution plant investment needed to serve the customer will be paid by future margin collected in natural gas rates. Any deficiency must be paid by the developer or customer in the form of a contribution in aid of construction, or, in

some cases, through a New Customer Rate. The financial impact analysis included in the line extension policy is designed to ensure that new customers pay for the cost of their service, including the possibility that their usage may be different from the average usage of existing customers.

The typical cause of a customer payment is that distribution facilities cost more than the rates will support. To provide a very simple and clear example, a customer planning to use natural gas *only* for cooking is expected to consume only about 5 therms of gas per month, compared with typical usage of about 60-75 therms per month for a typical customer. The line extension policy would effectively require this customer to pay about 95% of the cost of extending service in the form of a cash payment at the time of installation.

Under the Company's proposed rate design, this customer would now ALSO be required to pay for about 50% of the cost of the facilities that serve them through a monthly $14.00 fixed charge. In effect, they would be paying one and one-half times for the facilities that provide their service.

Q: How did you estimate the figure of 50%?

A: A typical customer using 70 therms of gas per month (840 therms/year) under the Company's proposed rate design would pay about $14.00 in volumetric distribution margin (at $.20/therm), plus $14.00 in margin through the combined customer charge and facilities charge. Effectively one-half of the non-gas cost of their service is in the form of a fixed charge. For the cooking-only customer, they would pay $1/month in margin, $14.00/month in the fixed charge, but typically

would have contributed about $1,000 more in cash to obtain service in the first place.

Q: Are there many cooking-only customers?

A: There are many small-use customers, and nearly all customers are small-use customers in the summer months. An example would be gas cooking customers in multi-family housing with central space and/or water heating; there are a number of older buildings of this type in Seattle, and the residents tend to be of lower income levels. The effect of the Company proposal would be to double gas bills during the summer season for many customers. While it would also reduce winter bills, it would reduce the incentive for customers to conserve when it is most valuable to both customers and to the system to do so.

Q: Why is the Company proposal anti-competitive?

A: Prior to the merger of Washington Natural Gas and Puget Power, the gas company was very aggressive at attempting to attract new business. While this effort sometimes went beyond the threshold of cost-effectiveness, in general it was viewed as desirable to encourage gas space and water heat over electric heat, simply due to the thermodynamic efficiencies and environmental benefits of gas heat. At the time of the merger, the parties expressed great concern that the merged company would not maintain this effort. The proposed rate design would discourage small-use customers from joining the system, and thereby shift loads from gas to electricity. Examples include multi-family customers, gas fireplaces in condominiums, gas cooking and water heating in homes with electric heat pumps for air conditioning purposes, and other small-use customers. Because

Puget will retain most of these customers as electric users, the effect is to reduce competition between natural gas and electricity for these end-uses.

Q: Was this issue addressed in the merger proceeding?

A: Yes. The Merger Stipulation, approved by the Commission in 1997, stated very clearly that Puget was expected to take actions to ensure gas availability and to not use its multi-fuel monopoly to reduce natural gas fuel choice:

> A reporting mechanism will be developed cooperatively by PSE, Commission Staff and Public Counsel for the purpose of monitoring the levels of gas conversions and line extension to ensure that PSE is not acting to reduce or restrict gas availability. The reporting mechanism will be based upon the historical experience of WNG and a benchmark will be established by reference to the ongoing experience of other non-affiliated gas and electric utilities in the Pacific Northwest. [15]

Q: In your opinion, would the proposed rate design violate the intent of this provision?

A: Yes. The other natural gas utilities in the state have kept reasonable basic charges in order to continue to attract new business. Examples include Cascade ($4.00/month), Northwest Natural Gas ($5.00/month), and Avista Utilities ($5.00/month). Puget already has the highest basic charge of any of the Washington gas utilities. The proposed increase would make this charge about three times the average charge of the other gas companies. Clearly the proposal violates the intent of the Merger Stipulation, to have the merged company behave as though the competitive market still formed the basis for attracting new gas customers.

Q: Are there other reasons that the customer or basic charge should not be increased?

A: Yes. The natural gas line extension policy, Rule 7, computes a line extension allowance for customers based on the cost of extending service and the expected

[15] Docket UE-961695, Stipulation, page 15.

usage of customers. The cost of the pipe between the street and the dwelling unit, called the "service line," is included in this formula – customers expected to use little gas must pay for the service line in an up-front payment, while those expected to use larger amounts of gas receive an allowance that covers this cost. To include the cost of the service line in the monthly charge would have the effect of double-charging small customers.

While the company computes a cost of $16.17 as the cost of providing basic service, this calculation includes the installation, depreciation, and maintenance of the service lines. Out of $514 million in distribution plant the Company identifies as customer-related, $379 million, or 74%, is related to service lines.[16] If the basic charge is limited to meters, meter reading, and billing, it drops dramatically. There is no reason that the cost of meter reading and billing for gas should exceed the approximately $4.50/month cost the Company incurs for its electric service; if costs are higher in Seattle, Tacoma, and Snohomish County due to the lack of a joint service territory, the Company should be directed to explore joint meter reading and billing with those electric utilities.

Q: Please turn to the conservation impacts of the proposed rate design change. How would this affect customer behavior?

A: The effect would be to make winter heating bills lower, and summer bills higher. Having lower bills during particularly cold periods may seem like a benefit to customers, but the effect on the region and the nation is clearly adverse. At the very time when constraint of usage is most valuable, that response will be

[16] CEP-4, P. 11, Line 1.

attenuated. Customers that desire stable bills can sign up for a level-pay program, but they will at least know that they are impacting their balance owing by their usage during cold periods, and this should cause constraint of usage. With the proposed rate design, the lower rate per therm can be expected to result in increased consumption.

Q: How will increased consumption affect gas prices in the long run?

A: Clearly the current surge in natural gas prices is driven by usage of natural gas growing faster than supply, and forcing higher-cost resources into the marketplace. Encouragement of gas conservation is the best available tool for holding down future gas prices. This is a benefit to both gas customers and electric customers, since a large part of our electricity supply comes from gas-fired generating units, and the high cost of natural gas is a principal reason for the company's proposed electric rate increase. The Company's proposed rate design will adversely affect both the supply and price of natural gas for all uses in the future; if this approach were used by other gas utilities, the cumulative effect could be devastating to all gas consumers in the Western United States.

XI. COMBINED GAS AND ELECTRIC IMPACTS ARE EXTREMELY BURDENSOME

Q: Are there combined effects of the Company's pending gas and electricity rate requests that are particularly troubling?

A: Yes. The Company has three requests pending:

1) An electric rate increase, with the largest increases going to the smallest customers.

2) A gas rate increase, with the largest increases going to the smallest customers.

3) A gas PGA application, amounting to an 18% increase in residential rates.

What is troubling about this is that the Company's smaller gas heat customers take the brunt of all three parts of the request. They will suffer a 13% electric rate increase, and a 31% increase in their gas bills (a 13% increase in their gas bill from the general rate case, and an 18% increase in their gas bill from the PGA). Assuming their electric and gas bills are of about equal proportion, they will pay a total of about 22% more for energy.

Conversely, the larger electric space heat users will pay only about 7% more for energy.

Q: But, aren't electric rates higher than gas rates, so the electric heat customers will still be paying more?

A: Not necessarily. For many years, Washington has had a split energy code, providing for lower efficiency standards for homes using natural gas than for homes using electricity. This was clearly cost-based when adopted, because gas costs were about half the level of electricity costs. With these proposed increases, however, the cost of gas is only about 20% less than electricity for these smaller users. This is well within the efficiency differential in the codes. Therefore it is likely that smaller gas users – those living in newer homes built to post-1985 construction codes – will have energy bills that equal or exceed those paid by electric heat customers in comparable vintage homes. The soaring cost of gas is part of the explanation, but Puget's new rate design proposals for both gas and

electricity, which depart radically from well-established and successful policy in this area, are a big part of the problem.

Q. Have you estimated how Puget's proposals would affect different types of customers?

A: Yes. The table below shows how small and large electric consumers, and a typical customer with electric lights and appliances coupled with gas space and water heating would be affected.

Table 15: Impact of Company-Proposed Rate Increases on Typical Single-Family Gas Heat Consumers Relative to Other Residential Consumers

	Apartment All-Electric		Single-Family All-Electric		Single Family Electric-lights & app Gas-space/water heat	
		%		%		%
Electricity Usage (kWh)	600		1200		600	
Gas Usage (Therms)	0		0		70	
Current Electric Bill	$ 35.30		$ 74.96			
Proposed Electric Bill	$ 41.02		$ 80.36			
Electric General Increase	$ 5.72	16%	$ 5.40	7%	$ 5.72	16%
Current Gas Bill					$ 61.71	
Gas General Increase	$ -		$ -		$ 5.85	9%
Gas PGA Increase	$ -		$ -		$ 10.41	17%
Ultimate Gas Bill					$ 77.97	26%
Total Change (Monthly)	$ 5.72	16%	$ 5.40	7%	**$ 21.98**	**23%**
Total Change (12 Months)	$ 68.64	16%	$ 64.80	7%	**$ 263.80**	**23%**

XII. LOW INCOME ISSUES

Q: You have proposed rate designs for both gas and electricity that retain the current practice of collecting only metering and billing costs in the fixed charge, and all usage-related costs in the per-unit cost of energy. How will these rate designs affect low-income consumers?

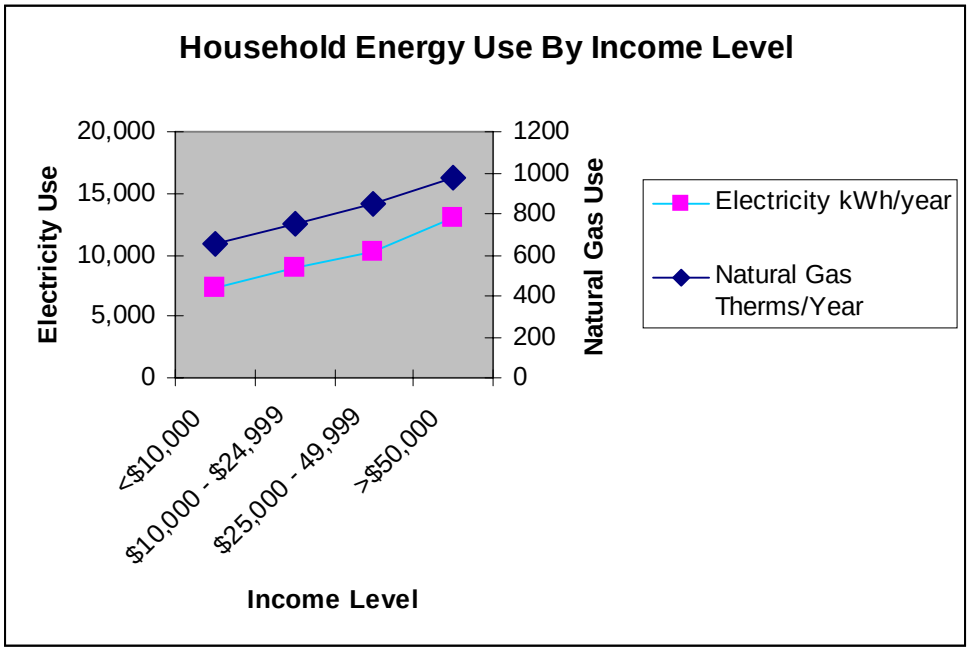
A: Low income consumers are particularly hard hit by rising energy bills, because they spend a very large percentage of their income on essentials – food, clothing, shelter, and utilities. The vast majority of low-income consumers will benefit

from my rate design proposals. The reason for this is that low-income consumers use less energy than the average customer.

Q: Do you have recent data on this relationship?

A: Yes. The United States Department of Energy publishes residential consumption surveys periodically that correlate energy consumption to household income. The relationship has remained steady for the entire quarter-century that I have been engaged in energy consulting. The graph below shows the current relationship of electricity usage to income:

Table 16: Energy Use by Income Level



Source: USDOE Residential Energy Consumption Survey, 1997

Q: What do you conclude from the USDOE energy survey data?

A: The overwhelming majority of low income households have below-average utility consumption, and will save significant sums with the rate design recommendations I have proposed. A small number will be adversely affected. These include large families in poorly insulated homes. For this reason, it is

essential that Puget's residential conservation programs be preserved and enhanced – the best way to help these large-use households is to assist them with reducing their energy consumption.

XIII. SUMMARY AND CONCLUSIONS

Q: Please summarize your analysis of electric cost allocation in this proceeding.

A: First, the Company has introduced new methods for measuring electric cost of service by customer class that should not be accepted in this proceeding. In particular, the treatment of line transformers as a customer-related cost, rather than a demand-related cost is not supported by the evidence.

Second, the Commission should recognize that the distribution business is fundamentally different and less risky than the energy supply business. The rating agency analysis by Standard and Poor's supports this, and intuition of anyone involved in the energy utility business in recent years supports this. The Commission should direct the Company to begin examining its cost of capital and computing cost of service using an unbundled cost of capital approach. When this is done, costs shift from electric and gas distribution to electric supply, and the change impacts different groups of customers in different ways.

Third, the Commission should reject Puget's proposal to assign transformer costs on a basis other than usage. The evidence in this proceeding shows that transformer cost is linearly related to demand, and the allocation of transformers on a demand basis should be continued. Puget's proposed methodology is flawed,

in part due to the failure to "net out" the capacity of directly assigned transformers from class loads used for allocation of residual transformer costs, the same criticism that two decades ago led the Commission to reject a similar method.

Fourth, the Commission should recognize that the method used to apportion administrative and general costs in the past is no longer appropriate in an era where retail wheeling is a separate service. The Commission should adopt the methodology that has been in place for computing gas cost of service for the past decade, treating one-half of administrative costs as a throughput-related expense.

Finally, the Commission should reaffirm the "range of reasonableness" approach to cost allocation, and order a uniform percentage increase to any class within a parity ratio range of 90% to 110%. Because of the significant realignment that has been implemented in the past, in this proceeding, this includes all of the major classes.

Q: Please summarize your findings and recommendations with respect to residential electric rate design.

A: The Commission should hold the customer charge at the current level of $5.50, and apply any allowed increase uniformly to the two energy blocks. This will move rates for incremental usage gradually toward the cost of incremental supplies of power, in accordance with long-established rate design principles. The Commission should decisively reject Puget's proposal to apply a disproportionate increase to small users, in part because their behavior is exactly what is desirable, and in part because the effect of the Company's proposal would

be to severely burden customers that also use natural gas at a time when gas costs are soaring.

Q: Please summarize your findings and recommendations with respect to the natural gas cost of service study.

A: The Company study should be rejected. It proposes, without any explanation, abandonment of the Commission-approved methodology of using multiple-year average to measure peak demand. The alternative study, run by the Company at my request, corrects this error, and should be the basis of any gas rate spread decision.

The Commission should continue to apply a "range of reasonableness" standard to the application of the cost study results, and therefore should apply a uniform percentage adjustment to all of the major classes in this proceeding.

Q: Please summarize your findings and recommendations with respect to residential natural gas rate design.

A: The Commission should reject Puget's proposed massive shift of costs into the fixed component of the residential rate design, increasing the monthly non-usage charge from $5.50 per month to $14.00 per month. The current customer charge should be retained. Any allowed increase should be applied to the distribution margin rate.

Q: What would the effects of the Company's proposals be on low-income energy consumers?

A: Because low-income consumers are overwhelmingly also low-use consumers, the Company's proposal to "frontload" both gas and electric rates would severely harm the majority of low-income consumers. My alternative rate proposals,

generally retaining the current rate design, would mitigate the impact on low income consumers of the proposed rate increases.

Q: Does this complete your prepared testimony?

A: Yes.