BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Docket Nos. UE-060256

WUTC v. CASCADE

RESPONSE OF PUBLIC COUNSEL TO STAFF DATA REQUESTS

Request No:	51
Directed to:	Judith Krebs
Date Received:	August 21, 2006
Date Produced:	September 6, 2006
Prepared by:	Jim Lazar
Witnesses:	Jim Lazar

WUTC STAFF DATA REQUEST NO. 51

Re: Witness Jim Lazar

Please provide all studies that Mr. Lazar has conducted of potential fuel switching by Cascade residential customers, regarding the proposed implementation of an inverted block rate for residential customers.

RESPONSE:

Mr. Lazar has not prepared studies specifically related to Cascade fuel switching potential. As discussed in Public Counsel's response to WUTC Staff Data Request No. 27, the Company's proposed rate design would tend to encourage small-use customers who use gas only for cooking, clothes drying, water heating, and perhaps gas fireplaces to consider switching to propane and/or electricity. Mr. Lazar's proposed rate design would work to retain these customers and the beneficial margin they provide to Cascade.

A presentation Mr. Lazar gave before the Northwest Power Planning Council in 1994 on Fuel Switching Potential in the region is attached as WUTC 51 Fuel Switching.pdf.

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Presentation to Northwest Power Planning Council
February 8, 1994
Direct Use of Natural Gas

Good afternoon. I am a consulting economist specializing in utility rate and resource issues. I presume I was invited to participate in this panel due to my extensive involvement in fuel choice issues over the past 15 years. Implementing a program to achieve cost-effective fuel choice will save us money, help save the fish, and slow down the rate of growth in greenhouse gas emissions.

Background

My involvement began in 1979 when Puget Power asked for a four-year ban on electric resistance space and water heat and I represented a public interest group before the Washington Utilities and Transportation Commission. Since that time I have worked with other clients on this issue, ranging from the National Marine Fisheries Service (which included a fuel-switching proposal in it's 1982 comments to you on the first fish and wildlife plan) to the Public Counsel Section, Office of the Attorney General. I have worked with electric utilities on this issue, including Salem Electric and Snohomish PUD (where I helped put together the trailblazing water heater joint marketing program with Washington Natural Gas), and with the Association of Northwest Gas Utilities. I left all my hats at home today, and speak to you only as an independent consultant.

Your staff study, in my opinion, is the best to date on the quantification of the cost-effective resource available from residential fuel conversions. My own study, of 1990, was the first to put fuel conversions into the analytical framework of the Council's Plan, and I hope it made a meaningful contribution to the science. Much of the potential I identified in my 1990 has already been achieved through market action and utility programs, so it's not surprising that the potential is lower today than it was in the past. The subsequent analyses, including the Pacific Energy report, the Aos/Blackmon reports, The ODOE/OPUC studies, the BPA analysis, the WSEO paper, and your own have further refined how we should calculate the cost-effective resource potential.

Importance of Efficient Fuel Choice

In 1982, as a consultant to the National Marine Fisheries Service, I helped to identify how efficient fuel choice could improve fish survival, by better aligning electric power demands on the Columbia River with the natural streamflow of the river. In

1992, I refined that analysis for the Pacific States Marine Fisheries Commission. Achievement of the technical potential for fuel conversions would greatly reduce the technical problems associated with providing for fish passage -- while at the same time saving us a lot of money. Most "solutions" to our fish passage problems don't save money, but instead cost money.

We are increasingly relying on gas generation for baseload electric supply. The Northwest now has nearly 3000 megawatts of gas-fired generation operating or under construction, and another 3000 megawatts in the licensing process. As a result, we expect to be using gas for electric generation more than 95% of the time -- during all but the wettest months -- over the next 20 years. Consequently, every customer who chooses gas over electric heat is reducing the region's reliance on gas. One result of this is that the fuel choice analysis is impervious to concerns about the cost of gas increasing rapidly: We will incur the cost of natural gas to heat our homes and water, almost no matter how quickly it increases; the issue is whether we will incur that cost at 45% thermodynamic efficiency in electric generation or at 65% thermodynamic efficiency in direct applications.

The average total resource cost advantage of direct application over gas/electric space and water heat is around 10 - 20 mills/kwh. That's only about $100 -$200 per year per house. Yet multiplied over up to a half-million homes which could use gas instead of electricity, we're talking about $50 - $100 million per year. BPA's fish and wildlife budget for the 1993-95 period is about $70 million per year. The potential savings to Northwest billpayers are on the order of $1 - $2 billion dollars over a 20-year study horizon.

New Construction Opportunities Not Explored

None of these studies have examined in any detail the amount of cost-effective fuel choice which could be achieved in new construction with appropriate incentive and regulatory policies. BPA has recently concluded, however, that a significant portion of the "Super Good Cents" program participants would otherwise choose natural gas. That program is not cost-effective, and should be strictly limited to areas where gas is not available. Paying incentives to bias builders in favor of electric heat, when that is neither desirable for the society nor for the homeowner, is not an acceptable outcome of a so-called least-cost planning process. In 1982, the Northwest Conservation Act Coalition called on the Council and BPA to make all incentive programs "fuel-blind" to avoid the sort of problem that the gas utilities have complained about for a decade, and which BPA has now confirmed.

Potential is Equal to Tenaska, Hermiston, and Coyote Springs Combined

The answer all of the available studies suggest is that there is still approximately as much potential for cost-effective residential fuel conversions in existing homes and for more cost-effective fuel choice in new homes as the expected output of the Hermiston Generating Project, the Coyote Springs Project, and the Tenaska project combined. Acquiring the direct use option will save the region hundreds of millions of dollars,

billions of therms of gas, and millions of tons of carbon dioxide. It is a valuable resource, and it should be pursued.

When all of the avoidable electric system costs are counted, most of the "technical potential" for fuel conversions is cost-effective. It is crucial that we not compare the cost of implementing space heating conversion with the cost of constructing a gas-fired power plant. One must consider the production, load shaping, transmission, distribution, and environmental costs, along with the transmission and distribution losses. Puget Power has done so in its avoided cost filing with the Washington Utilities and Transportation Commission, and its avoided cost for a 30-year space-heating resource is 89 mills/kwh. Others tend to leave one or more of these elements out.

NPPC Staff Analysis is Very Conservative.

Your staff did better than most at this analysis, but did not quantify the environmental benefits of direct application in terms of reduced CO_2 emissions. Only a one-mill premium was associated with the poor seasonal and time of day characteristics of space heating electric usage, while most other analysts have found a 20% or greater premium to be applicable. It assumed only 7.5% line losses, when the major utilities assume much higher losses for residential customers, particularly for peak-intensive space heating loads. My point is that your staff analysis is extremely conservative in its estimate of the available potential.

What are we doing? What more can we do?

Much of the potential is, today, being pursued. Puget Power, Seattle City Light, Portland General Electric, Snohomish PUD, and the Washington Water Power Company are all cooperating in one way or another in programs to examine, acquire, or educate themselves on the best ways to achieve this resource potential. There are, however, some serious points of resistance. Specifically, several public utility districts and electric cooperatives, Tacoma City Light, the City of Springfield, Oregon, and Pacific Power continue to oppose this environmentally acceptable, economical resource option.

What can and should the region do to better exploit the available economical potential for fuel choice? I will lay out some recommendations for each major player in my attachment. There are very important roles for the Council, for BPA, for the electric utilities and for the gas utilities.

I appreciate the opportunity to share my thoughts with you on this important topic. I urge you, above all, to define direct application of natural gas as a resource, to incorporate it in the resource portfolio for future conservation and power plans, and to rank it just below renewable resources. As a resource of very high fuel conversion efficiency, it belongs ahead of cogeneration in the resource pecking order.

STEPS TO ACHIEVE COST-EFFECTIVE FUEL CHOICE

NORTHWEST POWER PLANNING COUNCIL

Incorporate direct application of natural gas as a resource in the development of the next plan, and include direct application in the resource portfolio right along with other resources.

Vigorously assert your oversight role with respect to any future gas-fired generating projects under Section 6(c) of the Act.

Adopt Model Conservation Standards for existing homes, and for utility and governmental conservation programs, as directed under Section 4(f)(1) of the Act. Adopt Model Conservation Standards for retail rate design, as proposed in the Draft of the 1983 Plan.

Provide in the 1995 Plan for the inclusion of direct application of gas as a resource in utility least cost and integrated resource plans.

Quantify the environmental benefits of direct application of gas in mills per kwh.

BONNEVILLE POWER ADMINISTRATION

Implement tiered wholesale rates which provide no more than 80% of historical period use to each Priority Firm customer at a "hydro-based" Tier 1 rate.

Implement surcharges on remaining jurisdictions which have not adopted the Northwest Energy Code, and discontinue all incentive payments to builders as soon as possible.

Provide billing credits or other financial compensation to utilities or independent entities which finance fuel conversions on a par with other conservation program funding.

Modify the Super Good Cents program to require provision for service by a direct application fuel (install piping and ducting to the area of the space and water heating appliances.

Discontinue advertising for the Super Good Cents program tomorrow.

Restrict availability of water heater rebates to areas where gas service is not available, or make the rebates fuel-blind.

Maintain funding to the state energy offices to examine cost-effective energy code changes, and to develop statewide fuel fitting programs.

CONSUMER-OWNED UTILITIES

Implement inverted retail rates reflecting the poor load factor, seasonal characteristics, and new resource cost associated with serving space heating loads.

Work cooperatively, not competitively, with the gas utilities.

Include direct application of gas as a resource in their own resource plans.

Discontinue any pursuit of gas-fired resources until programs are in place to acquire all cost-effective fuel conversions and fuel choice.

Modify line-extension policies to provide for capture of a significant portion of the cost of serving growth in the form of a one-time charge to new space and water heating loads, to levelize the "first-cost" playing field.

INVESTOR-OWNED UTILITIES

Maintain and enhance existing inverted retail rates reflecting the poor load factor, seasonal characteristics, and new resource cost associated with serving space heating loads.

Work cooperatively, not competitively, with the gas utilities.

Include direct application of gas as a resource in their own resource plans.

Discontinue any pursuit of gas-fired resources until programs are in place to acquire all cost-effective fuel conversions and fuel choice.

Modify line-extension policies to provide for capture of a significant portion of the cost of serving growth in the form of a one-time charge to new space and water heating loads, to levelize the "first-cost" playing field.

STATE REGULATORY COMMISSIONS

Require electric and gas utilities to prepare integrated resource plans jointly.

Require the quantification and funding of direct application as a resource in utility least cost plans.

Penalize utilities which do not acquire cost-effective resources; reward those which do.

Reject all new gas-fired resources until programs are in place to acquire all cost-effective conservation, renewable resources, fuel conversions, and fuel choice.

Adopt hook-up charges for new space and water heating loads designed to levelize the "first cost" playing field, particularly for multi-family housing.

NATURAL GAS UTILITIES

Require the quantification and funding of direct application as a resource in utility least cost plans.

Work cooperatively, not competitively, with the electric utilities.

Aggressively work to find ways to reduce ducting losses; as much as half of the efficiency advantage of gas heat can be lost in leaky ducting.

Improve the market penetration of high-efficiency gas water heaters.

Stop exaggerating the efficiency of gas heating systems (i.e., 90+ efficiency claims when the system efficiency is much lower), and stop misrepresenting the cost advantage over electricity (i.e., price comparisons at 100% thermodynamic efficiency for gas); the truth is favorable to their cause, and should be a sufficient marketing tool.

STATE ENERGY OFFICES

Continue to provide unbiased technical analysis to state regulatory commissions, BPA, and electric and natural gas utilities.

Assist gas and electric utilities with fuel-blind integrated resource planning efforts.

Develop training programs for builders to achieve ducting loss reductions.

Improve methods for enforcement of energy codes without need for incentive payments.

Identify cost-effective improvements to energy codes for new buildings using all fuels.