

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1302

In the Matter of)
)
)
PUBLIC UTILITY COMMISSION OF)
OREGON,)
)
Staff Investigation into the Treatment of)
CO₂ Risk in the Integrated Resource)
Planning Process.)
_____)

COMMENTS ON STAFF PROPOSED GUIDELINE OF
THE CITIZENS' UTILITY BOARD OF OREGON
ECUMENICAL MINISTRIES OF OREGON
NW ENERGY COALITION &
RENEWABLE NORTHWEST PROJECT

September 13, 2007

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UM 1302**

In the Matter of)	
)	
PUBLIC UTILITY COMMISSION OF)	COMMENTS ON STAFF
OREGON,)	PROPOSED GUIDELINE OF
)	CUB, EMO, NVEC & RNP
Staff Investigation into the Treatment of)	
CO ₂ Risk in the Integrated Resource)	
Planning Process.)	
<hr/>		

I. Introduction

The Joint Parties strongly support the Staff draft guideline, as it directs utilities to perform the thorough analysis of the risk of future CO₂ regulation that should be an integral part in any utility’s planning. In our opening comments, we presented a survey of the range of possible CO₂ regulatory futures under current policy proposals. As this survey demonstrated, utilities will almost certainly face CO₂ regulation in the near-term, and the resulting CO₂ price could have significant impacts on utility operations. We strongly believe that the current policy environment fully warrants the kind of expanded and rigorous analysis of CO₂ risk and risk mitigation strategies that Staff’s draft guideline represents.

Furthermore, the direction in Staff’s draft guideline to perform trigger point analysis and fully develop optimized portfolios designed for each of these trigger points (Staff’s paragraph (d.)), as well as to develop an “Oregon compliance portfolio” (Staff’s

paragraph (e.)) is largely consistent with our recommendations. We also strongly support Staff's inclusion of risk adaptability analysis in its draft guideline, as we feel this is a good first step towards incorporating the value of portfolio flexibility in the IRP process.

Though our proposed redline of the Staff proposal includes a number of wording changes as well as the shifting of sentences from one location to another, in substance there are only four changes we recommend:

- A requirement for utilities to document and explain their choice of base-case scenario;
- The inclusion of upstream CO₂ emissions for all resources;
- The specific inclusion of the price elasticity of demand in scenario logic consistency; and
- A specific requirement for utilities to compare the cost differences between its preferred and alternate portfolio(s) in light of the risk performance of the portfolio(s).

II. The Rationale For Our Changes

Following is a brief explanation of what we consider to be the substantive changes to Staff's proposal. That being said, three of our four proposed changes are closely aligned with the intent expressed in Staff's proposal. The only change that is not currently in the Staff proposal is the inclusion of upstream CO₂ emissions. Though the consideration of upstream CO₂ costs has not been previously discussed, Avista's recent IRP proposal in Washington brought this issue to our attention. We recognize that the group has not had a chance to discuss this issue, but feel that its importance warrants exploration in parties' closing comments. When considering the ultimate cost of

electricity from a resource that customers may be asked to pay for, the cost of upstream CO₂ emissions should not be ignored.

A. Utilities Should Document & Explain Their Choice Of A Base-Case Scenario

In our redline of the Staff draft guideline, we propose directing each utility to “document and explain its rationale for choosing its base-case scenario from among the other possible CO₂ regulatory futures.” This requirement is intended to replace the sentences in Staff’s draft guideline that direct the utility to “include an assessment that a CO₂ regulatory future will be mandated that is equally or more stringent” in Staff’s paragraph (c.) and “provide its assessment of such a CO₂ regulatory shift taking place” in Staff’s paragraph (d.).

The Joint Parties are sympathetic to concerns expressed by PGE and PacifiCorp during workshop that there would probably be little value in requiring utilities to provide some kind of estimate of the numeric probability that each of several possible regulatory futures would become legally binding, and we understand the difficulties inherent in making such a prognostication. However, in choosing one CO₂ regulatory future from among many possible futures as the most likely base-case scenario, utilities are already making assumptions about the relative likelihood of different possible regulatory futures. While such assumptions may rely on management discretion and judgment, as well as numeric probability analysis, the rationale that informs the utility’s judgment should be made explicit in the IRP and supported by a robust and up-to-date survey of current policy proposals.

B. Utilities Should Include Upstream CO₂ Emissions

The Joint Parties believe it is necessary to clearly define the scope of CO₂ emissions that are covered in the Guidelines. Upstream emissions associated with fuel purchases can be a significant proportion of the total emissions associated with a utility's operations. It is quite likely that future CO₂ regulation will include regulation of fuel-producing sectors, which will affect the price of fuel. It is therefore important that utilities provide an analysis of upstream emissions associated with fuel purchases in their portfolio analysis, and the effects of future CO₂ regulation on these upstream sectors and the price of fuel.

A recent proposal by Avista Utilities in its IRP highlights the importance of considering upstream emissions in any analysis of the effects of future CO₂ regulation. In an attempt to deal with natural gas price volatility, Avista is considering securing fuel for its gas-fired plants by making an "investment in pipeline-quality coal gasification." *Clearing Up*, Sept.10, 2007, p.7. The article goes on to give the Company's rationale from its IRP filing: "Locking in natural gas costs through a long-term fixed-price contract, an investment in pipeline-quality coal gasification or through other means makes a gas-fired combined-cycle combustion turbine's cost structure behave financially like a coal-fired resource."

The upstream emissions associated with coal gasification are significantly higher than those associated with domestic natural gas production and transportation. It is highly likely that any future CO₂ regulation will include regulation of coal gasification facilities, and the high CO₂ emissions associated with coal gasification should be taken

into account in IRP analysis of future CO₂ regulation scenarios, as the cost of those emissions will be included in the price of the fuel.

While coal gasification is a particularly important potential upstream emissions source, other upstream emissions sources are also important to consider. Upstream emissions figures for various resources have been estimated by several studies. For example, a recent study published in the journal, *Environmental Science and Technology* by researchers at Carnegie Mellon University,¹ found the following:

- Upstream emissions associated with coal add about 6% (12 lbs/MMBtu) to emissions associated with coal combustion.
- Domestic gas upstream emissions add about 17% (20 lbs/MMBtu) to emissions from gas combustion.
- Upstream emissions associated with liquefied natural gas (LNG) add about 28-45% (33-54 lbs/MMBtu) to emissions associated with gas combustion, depending upon where the LNG is shipped from.

As these figures demonstrate, costs due to regulation of upstream CO₂ emissions could contribute significantly to the total cost to utilities under future CO₂ regulatory futures. Therefore it is important to establish in these guidelines the principle that analysis of upstream emissions associated with fuel purchases be included in utility IRPs.

C. The Price Elasticity Of Demand Should Be Considered

The Staff draft guideline states:

¹ "Comparative Life Cycle Carbon Emissions of LNG Versus Coal and Gas for Electricity Generation" by Paulina Jaramillo, W. Michael Griffin, H. Scott Matthews, *Environ. Sci. Technol.*; 2007; 41(17) p. 6290 – 6296.

Each scenario should maintain logical consistency, to the extent practicable, between CO₂ regulatory costs and other key inputs including, but not limited to, expected interactive effects with fuel and electricity prices.

We propose adding the words, “and the price elasticity of demand,” to the end of this sentence to highlight this third important interactive effect. The higher CO₂ adders being modeled could add as much as 2-3¢/kWh to the price of electricity, and experience in the region has shown that loads are likely to react strongly to such changes. Utility modeling should explicitly take this important interaction into account.

D. Cost Differences Should Be Considered In Light Of Risk Performance

The intent of this edit is to explicitly state that utilities should examine the magnitude and relevance of the cost differences between alternate portfolios in light of the practical tradeoffs for customers between the cost difference and any reductions in risk exposure that this cost difference might buy for customers (*i.e.*, if a more-expensive portfolio brings with it insurance against future carbon regulation, what does that insurance provide and at what cost?). An analysis of cost differences cannot be performed in a vacuum; there are tradeoffs and potential motivations that may make higher costs preferable and cost differences only take on meaning when examined in light of what the extra cost does or does not provide.

The Joint Parties, therefore, recommend that comparing the present value of revenue requirement differences of resource portfolios against the risk performance of the same portfolios should be explicitly delineated in the IRP. These tradeoffs are among the most profound that the utilities must make, and should figure prominently in their plans and analyses.

III. Conclusion

Attached are three versions of our proposed edits to the Staff draft guideline:
1) a redline version that only shows the more-substantive changes (for example, a sentence that was moved would not appear in redline); 2) a full redline version to show all the changes that were made; and 3) a non-redline version for ease of reading.

Respectfully Submitted,
September 13, 2007

/s/ Jason G. Eisdorfer Citizens' Utility Board of Oregon
/s/ James Edelson Ecumenical Ministries of Oregon
/s/ Jesse Jenkins Renewable Northwest Project
/s/ Steve Weiss NW Energy Coalition

- a. SCENARIOS: The utility should construct a base-case scenario to reflect what it considers to be the most likely regulatory compliance future for carbon dioxide (CO₂), nitrogen oxides, sulfur oxides, and mercury emissions. The utility also should develop a broad array of compliance scenarios ranging from the present CO₂ regulatory cost to the upper reaches of credible proposals by governing bodies (*i.e.*, at least \$100 per ton, as levelized in 2005 dollars). Each scenario should include a time profile of CO₂ compliance costs. For each scenario, the utility should identify the underlying source of the CO₂ costs, i.e., taxes, a ban on certain types of resources, or CO₂ caps (with or without flexibility mechanisms such as trading or a safety valve). The utility should document and explain its rationale for choosing its base-case scenario from among the other possible CO₂ regulatory futures. Each scenario should maintain logical consistency, to the extent practicable, between CO₂ regulatory costs and other key inputs including, but not limited to, expected interactive effects with fuel and electricity prices, and the price elasticity of demand.
- b. UPSTREAM CO₂ EMISSIONS: The utility must include upstream CO₂ emissions associated with fuel purchases, and their effect on fuel prices, in all the portfolios and scenarios it considers. Upstream sources of emissions associated with fuel purchases include, but are not limited to: pipeline and drilling losses; emissions from mining, pumping, transportation, liquefaction, gasification, fuel processing, and other related processes. The portion of CO₂ emissions associated with each portfolio that are due to upstream CO₂ emissions should be presented, and the utility should identify whether or not each CO₂ regulatory compliance scenario described above includes regulation of these upstream emissions sources.
- c. PREFERRED PORTFOLIO: The utility should identify, among reasonable alternatives, the portfolio that it prefers in recognition of both its base-case scenario, the broad range of potential regulatory compliance scenarios described above, other analyses conducted during the course of the integrated resource planning cycle, and management discretion. The utility should estimate the twenty-year (as a minimum) present value of revenue requirement (PVR) for each of the studied portfolios for several illustrative regulatory compliance futures within the range of scenarios. End-effect considerations should be incorporated in the analyses to allow for comparisons of portfolios containing resources with different economic lives. In addition, and if material, sensitivity analyses on a range of reasonably possible regulatory futures for nitrogen oxides, sulfur oxides, and mercury should be included to further substantiate the preferred portfolio selection.
- d. TRIGGER POINT ANALYSIS AND ALTERNATE PORTFOLIOS: The utility should identify at least one CO₂ compliance cost scenario, if there is one, within the range of alternative regulatory scenarios considered that would lead to, or “trigger,” a set of resources that is substantially different from the preferred portfolio. The utility should develop an alternate portfolio optimized for each of these trigger point scenarios. The utility should then analyze the cost and risk performance of the alternate portfolio(s) under the base-case and each of the CO₂ compliance scenarios. The utility should examine the PVR difference between its originally preferred and alternate portfolio(s) in light of the risk performance metrics from sensitivity analysis.

Deleted: whether it envisions those costs to be in

Deleted: form

Deleted: ALTERNATIVE

Deleted: set of

Deleted: costs

Deleted: fully

Deleted: alternative

Deleted: and compare the portfolio's expected cost and risk

Deleted: to that

Deleted: initially preferred

Deleted: conditions

Deleted: under

Deleted: For each of the trigger points identified through the analyses, the utility should include an assessment that a CO₂ regulatory future will be mandated that is equally or more stringent.

- e. OREGON COMPLIANCE PORTFOLIO: If neither the original preferred portfolio nor an alternate portfolio would be consistent with Oregon energy policies (including state goals for greenhouse gas emissions reductions), the utility should construct an optimized portfolio that achieves that consistency, and perform the same analysis as for the alternate portfolio(s).
- f. PORTFOLIO CO₂ RISK ADAPTABILITY: The utility should assess the cost and risks of adapting the preferred portfolio to a scenario (or scenarios) where the utility must change course unexpectedly due to a major change in the CO₂ compliance requirements. The utility should describe the timing and magnitude of new CO₂ requirements that would elicit such a divergence in course. The utility should compare the cost and risks of the resulting, divergent portfolio with those of a portfolio that is optimized to be more adaptable in the event of such a change in the CO₂ compliance requirements. Comparative factors such as lead times for site acquisition, engineering, and construction should be incorporated in the characterization of the divergent and the adaptable portfolios.

Deleted: the indicated portfolio modifications.

Deleted: adapted preferred

Deleted: alternative portfolio designed

Deleted: alternative portfolio. The utility should provide its assessment of such a CO₂ regulatory shift taking place.

Guideline 8: Environmental Costs

Joint Parties' Full Redline of Staff Proposal

- a. SCENARIOS: The utility should construct a base-case scenario to reflect what it considers to be the most likely regulatory compliance future for carbon dioxide (CO₂), nitrogen oxides, sulfur oxides, and mercury emissions. The utility also should develop a broad array of compliance scenarios ranging from the present CO₂ regulatory cost to the upper reaches of credible proposals by governing bodies (i.e., at least \$100 per ton, as levelized in 2005 dollars). Each scenario should include a time profile of CO₂ compliance costs. ~~For each scenario, the utility should identify the underlying source of the CO₂ costs, i.e., taxes, a ban on certain types of resources, or CO₂ caps (with or without flexibility mechanisms such as trading or a safety valve). The utility should document and explain its rationale for choosing its base-case scenario from among the other possible CO₂ regulatory futures. Each scenario should maintain logical consistency, to the extent practicable, between CO₂ regulatory costs and other key inputs including, but not limited to, expected interactive effects with fuel and electricity prices and the price elasticity of demand.~~
- b. UPSTREAM CO₂ EMISSIONS: ~~The utility must include upstream CO₂ emissions associated with fuel purchases, and their effect on fuel prices, in all the portfolios and scenarios it considers. Upstream sources of emissions associated with fuel purchases include, but are not limited to: pipeline and drilling losses; emissions from mining, pumping, transportation, liquefaction, gasification, fuel processing, and other related processes. The portion of CO₂ emissions associated with each portfolio that are due to upstream CO₂ emissions should be presented, and the utility should identify whether or not each CO₂ regulatory compliance scenario described above includes regulation of these upstream emissions sources.~~
- c. PREFERRED PORTFOLIO: The utility should identify, among reasonable alternatives, the portfolio that it prefers in recognition of both its base-case scenario, the broad range of potential regulatory compliance scenarios described above, other analyses conducted during the course of the integrated resource planning cycle, and management discretion. The utility should estimate the twenty-year (as a minimum) present value of revenue requirement (PVRR) for each of the studied portfolios for several illustrative regulatory compliance futures within the range of scenarios. End-effect considerations should be incorporated in the analyses to allow for comparisons of portfolios containing resources with different economic lives. In addition, and if material, sensitivity analyses on a range of reasonably possible regulatory futures for nitrogen oxides, sulfur oxides, and mercury should be included to further substantiate the preferred portfolio selection.
- d. TRIGGER POINT ANALYSIS AND ~~ALTERNATE~~ PORTFOLIOS: The utility should identify at least one CO₂ compliance ~~cost scenario, if there is one,~~ within the range of alternative regulatory scenarios considered that would lead to, or “trigger,” a set of resources that is substantially different from the preferred portfolio. The utility ~~should~~ develop an ~~alternate~~ portfolio optimized for each of these trigger point scenarios. ~~The utility should then analyze the cost and risk performance of the alternate portfolio(s) under the base-case and each of the CO₂ compliance scenarios. The utility should examine the PVRR difference between its originally preferred and alternate portfolio(s) in light of the risk performance metrics from sensitivity analysis.~~

Deleted: Each scenario should maintain logical consistency, to the extent practicable, between CO₂ regulatory costs and other key inputs including, but not limited to, expected interactive effects with fuel and electricity prices.

Deleted: The

Deleted: whether it envisions those costs to be in

Deleted: form

Deleted:

Deleted: c.

Deleted: ALTERNATIVE

Deleted: set of

Deleted: costs

Deleted: should fully

Deleted: alternative

Deleted: “

Deleted: ” and compare the portfolio’s expected cost and risk

Deleted: to that

Deleted: initially preferred

Deleted:

Deleted: conditions

Deleted: under

Deleted: For each of the trigger points identified through the analyses, the utility should include an assessment that a CO₂ regulatory future will be mandated that is equally or more stringent.

Formatted: Font: (Default) Arial, 10 pt

Formatted: Font: (Default) Arial, 10 pt

e. OREGON COMPLIANCE PORTFOLIO: If neither the original preferred portfolio nor an alternate portfolio would be consistent with Oregon energy policies (including state goals for greenhouse gas emissions reductions), the utility should construct an optimized portfolio that achieves that consistency, and perform the same analysis as for the alternate portfolio(s).

Deleted: d.

f. PORTFOLIO CO₂ RISK ADAPTABILITY: The utility should assess the cost and risks of adapting the preferred portfolio to a scenario (or scenarios) where the utility must change course unexpectedly due to a major change in the CO₂ compliance requirements. The utility should describe the timing and magnitude of new CO₂ requirements that would elicit such a divergence in course. The utility should compare the cost and risks of the resulting, divergent portfolio with those of a portfolio that is optimized to be more adaptable in the event of such a change in the CO₂ compliance requirements. Comparative factors such as lead times for site acquisition, engineering, and construction should be incorporated in the characterization of the divergent and the adaptable portfolios.

Deleted: the indicated portfolio modifications.

Deleted: adapted preferred

Deleted: an

Deleted: alternative portfolio designed

Deleted: in

Deleted: CO₂

Deleted: alternative portfolio. The utility should provide its assessment of such a CO₂ regulatory shift taking place.¶

e. OREGON COMPLIANCE PORTFOLIO: If none of

Deleted: alternative portfolios is consistent with Oregon energy policies (including state goals for reducing greenhouse gas emissions reductions), the utility should construct an optimized portfolio that achieves that consistency, present the cost and risk parameters, and compare them to those of the preferred and alternative

Formatted: Font: (Default) Arial, 10 pt

Formatted: Font: (Default) Arial, 10 pt

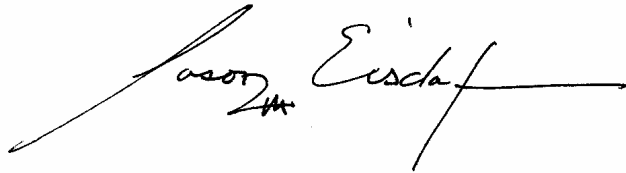
- a. **SCENARIOS:** The utility should construct a base-case scenario to reflect what it considers to be the most likely regulatory compliance future for carbon dioxide (CO₂), nitrogen oxides, sulfur oxides, and mercury emissions. The utility also should develop a broad array of compliance scenarios ranging from the present CO₂ regulatory cost to the upper reaches of credible proposals by governing bodies (*i.e.*, at least \$100 per ton, as levelized in 2005 dollars). Each scenario should include a time profile of CO₂ compliance costs. For each scenario, the utility should identify the underlying source of the CO₂ costs, *i.e.*, taxes, a ban on certain types of resources, or CO₂ caps (with or without flexibility mechanisms such as trading or a safety valve). The utility should document and explain its rationale for choosing its base-case scenario from among the other possible CO₂ regulatory futures. Each scenario should maintain logical consistency, to the extent practicable, between CO₂ regulatory costs and other key inputs including, but not limited to, expected interactive effects with fuel and electricity prices and the price elasticity of demand.
- b. **UPSTREAM CO₂ EMISSIONS:** The utility must include upstream CO₂ emissions associated with fuel purchases, and their effect on fuel prices, in all the portfolios and scenarios it considers. Upstream sources of emissions associated with fuel purchases include, but are not limited to: pipeline and drilling losses; emissions from mining, pumping, transportation, liquefaction, gasification, fuel processing, and other related processes. The portion of CO₂ emissions associated with each portfolio that are due to upstream CO₂ emissions should be presented, and the utility should identify whether or not each CO₂ regulatory compliance scenario described above includes regulation of these upstream emissions sources.
- c. **PREFERRED PORTFOLIO:** The utility should identify, among reasonable alternatives, the portfolio that it prefers in recognition of both its base-case scenario, the broad range of potential regulatory compliance scenarios described above, other analyses conducted during the course of the integrated resource planning cycle, and management discretion. The utility should estimate the twenty-year (as a minimum) present value of revenue requirement (PVRR) for each of the studied portfolios for several illustrative regulatory compliance futures within the range of scenarios. End-effect considerations should be incorporated in the analyses to allow for comparisons of portfolios containing resources with different economic lives. In addition, and if material, sensitivity analyses on a range of reasonably possible regulatory futures for nitrogen oxides, sulfur oxides, and mercury should be included to further substantiate the preferred portfolio selection.
- d. **TRIGGER POINT ANALYSIS AND ALTERNATE PORTFOLIOS:** The utility should identify at least one CO₂ compliance cost scenario, if there is one, within the range of alternative regulatory scenarios considered that would lead to, or “trigger,” a set of resources that is substantially different from the preferred portfolio. The utility should develop an alternate portfolio optimized for each of these trigger point scenarios. The utility should then analyze the cost and risk performance of the alternate portfolio(s) under the base-case and each of the CO₂ compliance scenarios. The utility should examine the PVRR difference between its originally preferred and alternate portfolio(s) in light of the risk performance metrics from sensitivity analysis.

- e. OREGON COMPLIANCE PORTFOLIO: If neither the original preferred portfolio nor an alternate portfolio would be consistent with Oregon energy policies (including state goals for greenhouse gas emissions reductions), the utility should construct an optimized portfolio that achieves that consistency, and perform the same analysis as for the alternate portfolio(s).
- f. PORTFOLIO CO₂ RISK ADAPTABILITY: The utility should assess the cost and risks of adapting the preferred portfolio to a scenario (or scenarios) where the utility must change course unexpectedly due to a major change in the CO₂ compliance requirements. The utility should describe the timing and magnitude of new CO₂ requirements that would elicit such a divergence in course. The utility should compare the cost and risks of the resulting, divergent portfolio with those of a portfolio that is optimized to be more adaptable in the event of such a change in the CO₂ compliance requirements. Comparative factors such as lead times for site acquisition, engineering, and construction should be incorporated in the characterization of the divergent and the adaptable portfolios.

CERTIFICATE OF SERVICE

I hereby certify that on this 13th day of September, 2007, I served the foregoing Comments on and Redline of the Staff Guideline Proposal of the Citizens' Utility Board of Oregon, Ecumenical Ministries of Oregon, NW Energy Coalition, and Renewable Northwest Project in docket UM 1302 upon each party listed below by email, and upon the Commission by email and by sending 6 copies by U.S. mail, postage prepaid, to the Commission's Salem offices.

Respectfully submitted,



Jason Eisdorfer Attorney #92292
The Citizens' Utility Board of Oregon

W=Waive Paper service, C=Confidential, HC=Highly Confidential

W CABLE HUSTON BENEDICT HAAGENSEN & LLOYD LLP

EDWARD A FINKLEA

1001 SW 5TH - STE 2000
PORTLAND OR 97204
efinklea@chbh.com

CHAD M STOKES

1001 SW 5TH - STE 2000
PORTLAND OR 97204
cstokes@chbh.com

W CASCADE NATURAL GAS

JON T STOLTZ
SR VICE PRESIDENT--REGULATORY & GAS

PO BOX 24464
SEATTLE WA 98124
jstoltz@cngc.com

W CITIZENS' UTILITY BOARD OF OREGON

LOWREY R BROWN
UTILITY ANALYST

610 SW BROADWAY - STE 308
PORTLAND OR 97205
lowrey@oregoncub.org

JASON EISDORFER
ENERGY PROGRAM DIRECTOR

610 SW BROADWAY STE 308
PORTLAND OR 97205
jason@oregoncub.org

ROBERT JENKS

610 SW BROADWAY STE 308
PORTLAND OR 97205
bob@oregoncub.org

W DAVISON VAN CLEVE

IRION A SANGER
ASSOCIATE ATTORNEY

333 SW TAYLOR - STE 400
PORTLAND OR 97204
ias@dvclaw.com

W DAVISON VAN CLEVE PC

MELINDA J DAVISON

333 SW TAYLOR - STE 400
PORTLAND OR 97204
mail@dvclaw.com

W DEPARTMENT OF JUSTICE

STEPHANIE S ANDRUS
ASSISTANT ATTORNEY GENERAL

REGULATED UTILITY & BUSINESS SECTION
1162 COURT ST NE
SALEM OR 97301-4096
stephanie.andrus@state.or.us

DAVID HATTON
ASSISTANT ATTORNEY GENERAL

REGULATED UTILITY & BUSINESS SECTION
1162 COURT ST NE
SALEM OR 97301-4096
david.hatton@state.or.us

JANET L PREWITT
ASST AG

1162 COURT ST NE
SALEM OR 97301-4096
janet.prewitt@doj.state.or.us

W ECUMENICAL MINISTRIES OF OREGON

JAMES EDELSON

415 NE MIRIMAR PL
PORTLAND OR 97232
edelson8@comcast.net

**W EMO ENVIRONMENTAL MINISTRIES
DIRECTOR**

JENNY HOLMES

inec@emoregon.org

W ESLER STEPHENS & BUCKLEY

JOHN W STEPHENS

888 SW FIFTH AVE STE 700
PORTLAND OR 97204-2021
stephens@eslerstephens.com

W IDAHO POWER COMPANY

RIC GALE
VP - REGULATORY AFFAIRS

PO BOX 70
BOISE ID 83707
rgale@idahopower.com

BARTON L KLINE
SENIOR ATTORNEY

PO BOX 70
BOISE ID 83707-0070
bkline@idahopower.com

MONICA B MOEN
ATTORNEY

PO BOX 70
BOISE ID 83703
mmoen@idahopower.com

LISA D NORDSTROM
ATTORNEY

PO BOX 70
BOISE ID 83703
lnordstrom@idahopower.com

MICHAEL YOUNGBLOOD
SENIOR PRICING ANALYST

PO BOX 70
BOISE ID 83707
myoungblood@idahopower.com

W MCDOWELL & RACKNER PC

KIMBERLY PERRY

520 SW SIXTH AVENUE, SUITE 830
PORTLAND OR 97204
kim@mcd-law.com

LISA F RACKNER
ATTORNEY

520 SW SIXTH AVENUE STE 830
PORTLAND OR 97204
lisa@mcd-law.com

W NORTHWEST ENERGY COALITION

STEVEN WEISS
SR POLICY ASSOCIATE

4422 OREGON TRAIL CT NE
SALEM OR 97305
steve@nwenergy.org

W NORTHWEST INDUSTRIAL GAS USERS

PAULA E PYRON
EXECUTIVE DIRECTOR

4113 WOLF BERRY CT
LAKE OSWEGO OR 97035-1827
ppyron@nwigu.org

W NORTHWEST NATURAL

ELISA M LARSON
ASSOCIATE COUNSEL

220 NW 2ND AVE
PORTLAND OR 97209
eml@nwnatural.com

INARA K SCOTT
REGULATORY AFFAIRS MANAGER

220 NW 2ND AVE
PORTLAND OR 97209
inara.scott@nwnatural.com

W OREGON DEPARTMENT OF ENERGY

PHILIP H CARVER
SENIOR POLICY ANALYST

625 MARION ST NE STE 1
SALEM OR 97301-3742
philip.h.carver@state.or.us

W OREGON PUBLIC UTILITY COMMISSION

GEORGE COMPTON

PO BOX 2148
SALEM OR 97308-2148
george.compton@state.or.us

W PACIFIC POWER & LIGHT

MICHELLE R MISHOE
LEGAL COUNSEL

825 NE MULTNOMAH STE 1800
PORTLAND OR 97232
michelle.mishoe@pacificorp.com

PAUL M WRIGLEY
MANAGER - REGULATION

825 NE MULTNOMAH ST, STE 2000
PORTLAND OR 97232
paul.wrigley@pacificorp.com

W PACIFICORP

OREGON DOCKETS

825 NE MULTNOMAH ST
STE 2000
PORTLAND OR 97232
oregondockets@pacificorp.com

KYLE L DAVIS

825 NE MULTNOMAH
PORTLAND OR 97232
kyle.l.davis@pacificorp.com

GREG N DUVALL

825 NE MULTNOMAH - STE 600
PORTLAND OR 97232
greg.duvall@pacificorp.com

NATALIE HOCKEN

825 NE MULTNOMAH
SUITE 2000
PORTLAND OR 97232
natalie.hocken@pacificorp.com

W PERKINS COIE LLP

JAMES M VAN NOSTRAND

1120 NW COUCH STREET, 10TH FLOOR
PORTLAND OR 97209-4128
jvannostrand@perkinscoie.com

W PORTLAND GENERAL ELECTRIC

RATES & REGULATORY AFFAIRS

RATES & REGULATORY AFFAIRS
121 SW SALMON ST 1WTC0702
PORTLAND OR 97204
pge.opuc.filings@pgn.com

W PORTLAND GENERAL ELECTRIC COMPANY

J RICHARD GEORGE

121 SW SALMON ST 1WTC1301
PORTLAND OR 97204
richard.george@pgn.com

W RENEWABLE NORTHWEST PROJECT

ANN ENGLISH GRAVATT

917 SW OAK - STE 303
PORTLAND OR 97205
ann@rnp.org

JESSE JENKINS

917 SW OAK ST STE 303
PORTLAND OR 97205
jesse@rnp.org