EXHIBIT 6

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1302

In the Matter of	)
PUBLIC UTILITY COMMISSION OF OREGON,	)
Staff Investigation into the Treatment of CO_2 Risk in the Integrated Resource Planning Process.	)

OPENING COMMENTS OF THE

CITIZENS' UTILITY BOARD OF OREGON

ECUMENICAL MINISTRIES OF OREGON

NW ENERGY COALITION &

RENEWABLE NORTHWEST PROJECT

July 26, 2007

TABLE OF CONTENTS

I. Introduction 1
II. Survey Of Possible Futures 4
A. Policy Instruments For Curbing Greenhouse Gas Emissions 4
B. Federal Bills 5
i. S.1766: Bingaman-Specter "Low Carbon Economy Act of 2007" 8
ii. S.280: Lieberman-McCain "Climate Stewardship and Innovation Act of 2007" 9
iii. S.309: Boxer-Sanders "Global Warming Pollution Reduction Act of 2007" 9
C. Federal Jurisprudence: Massachusetts vs. EPA 10
D. State & Regional Actions 11
i. Oregon 11
ii. Emissions Performance Standards 12
iii. Western Regional Climate Action Initiative 13
E. Points Of Agreement In The Current Policy Environment 14
III. CO_2 Price Estimates Of Core Cases & Congressional Proposals 15
IV. Carbon Cost Trigger Points 20
V. Risk 21
A. The Risk Of Global Warming Is Asymmetric 22
B. CO_2 Risk In The Context Of Rate Impact 23
C. External Regulatory Risk And The Value Of Optionality 24
VI. Issue List Summary 26
VII. Recommendations 28

Appendix 1 Congressional Climate Change Policy Proposals, Basic Features

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I. Introduction

Utility resource planning is all about risks, but each type of risk – fuel cost, load growth, hydro generation, technology change, regulatory change, *etc.* – has unique characteristics, and therefore calls for different treatment. Key to determining the appropriate treatment of CO_2 risk and its cost in the IRP process are assumptions about its future regulatory treatment.

The approach that the Citizens' Utility Board, Ecumenical Ministries of Oregon, NW Energy Coalition, and Renewable Northwest Project have taken in these Comments is to survey the likely regulatory treatment of CO_2 on the federal, regional, and state levels. We have attempted to organize that discussion in a way that makes an apples-to-apples comparison possible, through the use of levelized cost of CO_2 emissions using a recent analysis by the Massachusetts Institute of Technology's Joint Program on the Science and Policy of Global Change. This approach points to a convergence of policies,

and we rely on this convergence to recommend, for utility resource planning, a low carbon regulation scenario, a medium carbon regulation scenario (what we will call the "base case"), and a high carbon regulation scenario.

We provide a general discussion of the use of trigger point analyses for determining the cost for CO_2 that would likely tip the balance between one preferred portfolio and another. We also examine the value of having options and being able to change the proverbial horse mid-stream. This has not been taken into account in past resource planning processes, but is an important measure of a resource portfolio's long-term viability. We believe the NW Power and Conservation Council's model provides a good example of this type of analysis, and is a model that can be used by the utilities.

Finally, we will address some of the unique and asymmetric risk characteristics that CO_2 presents – especially the conclusion that the harm to customers of underestimating the stringency of eventual CO_2 regulation is much greater than the harm of overestimating it. This combination of policy, technical, and risk factors leads us to recommend that utilities use the following scenarios as low, base case, and high carbon regulatory futures in their IRP modeling:

- Low: A low carbon regulatory future can reasonably be modeled with the Bingaman-Specter 2007 proposal. This would represent a policy resulting in a freeze in U.S. emissions at approximately current levels.[1] This would require a levelized CO_2 cost of $24 per ton,[2] which corresponds to $11 per ton in 2015 escalating at 5% annually in real terms (corresponding to the safety valve price set in the legislation).[3]

[1] This policy would allow total cumulative U.S. emissions of approximately 287 billion metric tons (bmt) of CO_2-equivalent ($CO_{2\text{-eq}}$) between 2015 and 2050.
[2] In these Comments, we use "ton" to refer to a metric ton, not a short ton.
[3] Unless otherwise specified, all dollars are in terms of real 2005$.

- Base Case: For purposes of IRP planning, the Lieberman-McCain 2007 / Oliver-Gilchrest 2007 proposal represents a reasonable middle ground regulatory future to be used as a utility's base case. This would represent a policy requiring a 50-60% emissions reduction below 1990 levels by 2050[4] and a levelized CO_2 cost of $71, corresponding to a CO_2 cost of $39 in 2015 escalating at 4% real.
- High: To model a stringent carbon regulatory future, we recommend using the Sanders-Boxer 2007 proposal, which represents a policy requiring an 80% emissions reduction below 1990 levels by 2050.[5] The levelized CO_2 cost would be $97 per ton, corresponding to $53 per ton in 2015 escalating at 4% real.

The above three cases represent only points within the range of policy futures, and, when testing possible resource portfolios, other points in that range should be considered. Further, in order to adequately plan for a range of possible regulatory futures, we recommend that the Commission direct utilities to:

- Compliance Portfolios: Present and analyze one or more portfolios that would comply with each of the above low, base case, and high carbon regulatory futures.
- HB 3543 Portfolios: Present and analyze one or more portfolios that would comply with the emissions reduction targets set in Oregon statute by Oregon HB 3543.
- Value of Optionality: Incorporate the value of optionality when evaluating different portfolios. The NW Power and Conservation Council's model for performing this kind of analysis is highly-developed and available to the utilities.

[4] This policy would allow total cumulative U.S. emissions of approximately 203 bmt of $CO_{2\text{-eq}}$ between 2015 and 2050.
[5] This policy would allow total cumulative U.S. emissions of approximately 167 bmt of $CO_{2\text{-eq}}$ between 2015 and 2050.

(*e.g.,* the 2050 time frame) vary more considerably, as Table 3 demonstrates, the range of policy proposals are in near agreement that a return to 1990 emissions levels by 2020 (or in one case, by 2030) will be required.

Table 3: Medium-Term (2020-2030) Emissions Reduction Targets of Climate Policies

1990 levels by 2030	Bingaman-Specter 2007
1990 levels by 2020	Lieberman-McCain 2007, Oliver-Gilchrist 2007, Feinstein 2007, Kerry-Snowe 2007, Boxer-Sanders 2007, Waxman 2007, California AB 32, Washington SB 6001
10% below 1990 levels by 2020	Oregon HR 3543

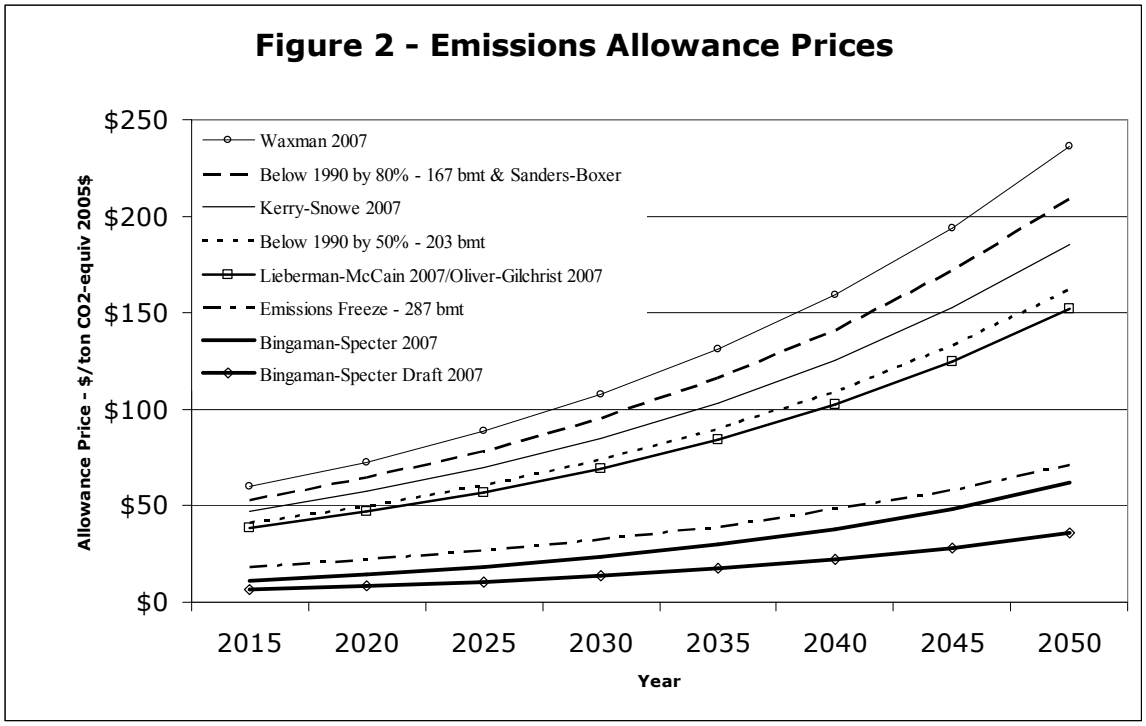
III. CO_2 Price Estimates Of Core Cases & Congressional Proposals

The Massachusetts Institute of Technology's Joint Program on the Science and Policy of Global Change's April 2007 assessment of current Congressional cap-and-trade proposals (MIT 2007) includes estimates of the greenhouse gas emissions prices that the market can be expected to set under various federal cap-and-trade proposals.[21] MIT 2007 uses the three representative core cases discussed above (Table 2) to estimate a range of likely carbon prices under cap-and-trade policies that resemble the emissions reduction pathways of MIT's three core cases. These price estimates are based on extensive economic modeling.

While uncertainty in emissions growth and abatement cost, combined with imperfect foresight on the part of economic actors, means that it is highly unlikely that the price path for emissions allowances would follow a smooth increase, MIT 2007 uses a projected annual interest rate of 4% in real dollar terms (*i.e.,* 4% above inflation), which

[21] MIT 2007, p. 15-18.

gives a reasonable projection of the growth of the value of greenhouse gas emissions allowances over time under potential cap-and-trade policies.[22] Figure 2 shows the rise in price of emissions allowance over time under MIT's core cases and Congressional policy proposals.



Remember that the 287 bmt case corresponds to a freeze in emissions at current levels, which roughly corresponds to the Bingaman-Specter 2007 draft policy proposal. The 203 bmt case corresponds fairly closely to the Lieberman-McCain 2007 bill, while the 167 bmt case very closely tracks the Sanders-Boxer 2007 bill. The other policies fall generally between these core cases, and where they fall in relation to the core cases can be used to estimate expected emissions allowance prices under the various Congressional cap-and-trade proposals discussed above.

[22] MIT 2007 assumes that when banking of allowances is permitted "[allowance] holders decide whether to bank [allowances] or not by comparing the expected rate of return on abatement (and banking of allowances) to returns on other financial instruments and alter their banking behavior until these returns are equalized." (MIT 2007, p. 16).

Price estimates for emissions allowances in policies that set safety valve prices can also be estimated. In the case of both policies with safety valve provisions that were discussed earlier – Bingaman-Specter Draft 2007 and Bingaman-Specter 2007 – the safety valve price set by both proposals is consistently lower than MIT 2007's estimates of the allowance prices necessary to achieve a freeze in emissions (see 287 bmt core case in Table 4 below). That means that, if the MIT 2007 analysis is correct, the safety valve prices set by both policies will determine both the price of emissions allowances and the level of emissions reductions achieved under each policy, which will therefore fall short of the emissions targets set in the legislation.[23]

This analysis illustrates how a safety valve provision that is set too low can undermine the integrity of a cap-and-trade policy, resulting in actual emissions reductions that fall below the targets specified in the legislation. This is relevant for the planning process, because it highlights continued policy uncertainty in modeling policies that include safety valve prices. If a policy sets a safety valve price that is too low to achieve the targets set in the policy, it is likely that the safety valve price will be revised upwards when it becomes apparent that the low safety valve price is preventing the policy from achieving its stated targets. Relying on a safety valve price in modeling, therefore, implicitly accepts continued policy uncertainty and risk that the safety valve price may be revised in the future.[24]

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[23] A freeze in emissions for Bingaman-Specter Draft 2007 and a return to 1990 emissions levels by 2030 in the case of Bingaman-Specter 2007 (see Appendix 1).

[24] For example, the $7/ton (2007$) safety valve price specified in previous Bingaman-Specter policy proposals served as the basis of the base case CO_2 adder value included in both PGE and PacifiCorp's 2007 IRPs. [Portland General Electric. 2007 Integrated Resource Plan. June 29, 2007. Page 91. PacifiCorp. 2007 Integrated Resource Plan. May 2007, Page 133]. However, just since the filing of these IRPs, Bingaman and Specter introduced a revised version (Bingaman-Specter 2007) that includes a $12/ton (2007$) safety valve, an increase of 71% within just one planning period cycle.

The future carbon market, like any future market projection, is subject to any number of uncertainties. Nevertheless, the price estimates presented in this section give a good indication of the emissions allowance prices to be expected under the various Congressional cap-and-trade proposals under consideration. State and regional cap-and-trade proposals will likely fall within or near this range of cost estimates as well, although restricted market scope may lead to higher allowance prices than a nationwide policy with equivalent emissions reduction targets.

Continued…

Table 4: Emissions Allowance Price Estimates Under Congressional Proposals & MIT Core Cases[25]

Cap-and-Trade Proposal	Nearest MIT Core Case	Allowance Price ($/ton CO2-e, 2005$)				Comments
		2015	2025	2050	Levelized[26]	
Bingaman-Specter Draft 2007	287 bmt	$7	$11	$36	$14	Safety valve price lower than expected price under 287 bmt case; safety valve price ($7 [2007$]/$6.56 [2005$] rising 5% in real terms annually) sets allowance price.
Bingaman-Specter 2007	Target 203 bmt Safety Valve 287 bmt [27]	$11	$18	$62	$25	Safety valve price lower than expected price under 203 bmt case; safety valve price ($12 [2007$]/$11.25 [2005$] rising 5% in real terms annually) sets allowance price.
287 bmt core case		$19	$27	$71	$33	Emissions Freeze at Current Level
Lieberman-McCain 2007 / Oliver-Gilchrest 2007	203 bmt	$39	$57	$152	$71	National emissions estimate is 216 bmt, so this is estimated at slightly lower than the 203 bmt case.
203 bmt core case		$41	$61	$162	$75	50% Below 1990 Level by 2050
Kerry-Snowe 2007	Between 203 and 167 bmt	$47	$70	$186	$86	Calculated as halfway between the two core cases.
167 bmt core case		$53	$79	$209	$97	80% Below 1990 Level by 2050
Sanders-Boxer 2007	167 bmt	$53	$79	$209	$97	National emissions estimate is the same as 167 bmt case.
Waxman 2007	167 bmt	$60	$89	$236	$110	National emissions estimate is 148 bmt, so estimated at slightly higher than 167 bmt case.

[25] Price estimates are based on estimates of total national emissions allowances under a particular policy and price estimates of three core cases (both from MIT 2007). In the case of policies without a safety valve, prices are assumed to be proportional to the core cases based on a ratio of national emissions allowances under the policy and under the core case. For policies with a safety valve, the safety valve price determines allowance price estimates.

[26] Real levelized cost estimates are based on a net present value of the cost stream for years 2015-2050 (inclusive) and an annual discount rate of 4% (from MIT 2007).

[27] Emissions reduction targets specified in Bingaman-Specter 2007 are closest to the 203 bmt MIT core case, however, since the safety valve price is set far below the allowance price levels MIT 2007 estimates are necessary to achieve those targets, the actual emissions reductions achieved by Bingaman-Specter 2007 would be closest to the 287 bmt core case. See earlier discussion of safety valves.