

December 13, 2010

Dennis McLerran, Regional Administrator  
U.S. Environmental Protection Agency, Region 10  
1200 Sixth Avenue  
Seattle, WA 98101

RE: Revision to the Oregon Regional Haze BART Rules for the PGE Boardman Power Plant

Dear Mr. McLerran:

The Oregon Department of Environmental Quality requests expedited approval of revisions to the Oregon State Implementation Plan from the Office of Air, Waste, and Toxics, State and Tribal Air Programs Unit of the U.S. EPA, Region 10. DEQ is requesting expedited approval because of the importance of finalizing this plan to all parties. The plan can only be finalized by EPA's formal approval. DEQ is transmitting copies of these amendments for EPA's review and approval.

Oregon's Environmental Quality Commission adopted changes to our regional haze rules as a modification to our SIP under OAR 340-200-0040 on December 9, 2010. We are submitting these revisions pursuant to 40 CFR 51.104.

I certify the public was notified of the proposed rule changes through notices published in newspapers of general circulation on August 20 and 21, 2010, and in the Secretary of State's Oregon Bulletin on September 1, 2010. The notices included a statement that adoption of the rules would revise the SIP. I further certify that seven public hearings were held in the following locations: Portland, Oregon on September 21, 2010 and November 8, 2010, Eugene, Oregon on September 23, 2010, Hermiston, Oregon on September 28, 2010, Medford, Oregon on September 29, 2010, The Dalles, Oregon on September 30, 2010 and Boardman, Oregon on November 9, 2010.

Thank you for EPA's coordination with our agency during the rule development process and for your expedited consideration of these changes as a revision to Oregon's SIP. If you have questions about the development of these changes, please contact Brian Finneran at (503) 229-6278. If you have questions concerning this SIP submission, please contact Margaret Oliphant at (503) 229-5687.

Sincerely,

Joni Hammond,  
Deputy Director

cc w/attachments: Donna Deneen, EPA, Region 10 (3 complete sets plus 2 additional copies of revised rules, Attachment 3)

cc w/o attachments: Margaret Oliphant, DEQ AQ SIP Coordinator  
Andrew Ginsburg, DEQ AQ Administrator  
Paul Koprowski, EPA Oregon Operations office

Attachments:

**Attachment 1: Evidence the State has Adopted the Revision**

- 1.1 Staff Report, Agenda Item K of the December 9-10, 2010 EQC Meeting. Also see Certificate and order for Filing Permanent Administrative Rules in Attachment 4.2

**Attachment 2: Evidence that the State has the Necessary Legal Authority**

See Attachment 1.1 "Commission Authority" (page 9 of Staff Report, Agenda Item K)

**Attachment 3: Provisions Submitted for Approval - Adopted and amended SIP rules submitted to SOS**

- 3.1 General Air Pollution Procedures and Definitions: OAR 340-200-0040. Effective December 10, 2010
- 3.2 Regional Haze Rules: OAR 340-223-0010 through 340-223-0080. Effective December 10, 2010
- 3.3 Oregon Regional Haze Plan for Implementing Section 308 (40 CFR 51.308) of the Regional Haze Rule. Effective December 9, 2010

**Redline/strikeout version of adopted, amended and repealed SIP rules**

- 3.4 General Air Pollution Procedures and Definitions: OAR 340-200-0040. Effective December 10, 2010
- 3.5 Regional Haze Rules: OAR 340-223-0010 through 340-223-0080. Effective December 10, 2010

**Attachment 4: Evidence that the State followed the Administrative Procedures Act**

- 4.1 Public notice in the Secretary of State's Oregon Bulletin, September 1, 2010.
- 4.2 Certificate and Order for Filing Permanent Administrative Rules, filed and effective December 10, 2010

**Attachment 5: Evidence of Adequate Public Notice**

- 5.1 Affidavit of Publication: The Dalles Chronicle, August 20, 2010 publication
- 5.2 Affidavit of Publication: The Daily Journal of Commerce, August 20, 2010 publication

- 5.3 Affidavit of Publication: East Oregonian, August 21, 2010 publication
- 5.4 Affidavit of Publication: Medford Mail Tribune, August 21, 2010 publication
- 5.5 Affidavit of Publication: The Oregonian, August 21, 2010 publication
- 5.6 Affidavit of Publication: The Register-Guard, August 21, 2010 publication

**Attachment 6: Certification of Public Hearing**

See paragraph #3 of cover letter and Attachment 7.1

**Attachment 7: Compilation of Public Comments and Department's Response**

- 7.1 Presiding Officer's Report for Rulemaking Hearings, dated November 12, 2010
- 7.2 Summary of Public Comment and Agency Response, dated November 30, 2010

## **Attachment 1**

### Evidence the State has Adopted the Revision

1.1 Staff Report, Agenda Item K of the December 9-10, 2010 EQC Meeting

Also see Certificate and Order for Filing Permanent Administrative Rules in Attachment 4.2


State of Oregon

Department of Environmental Quality

Memorandum

**Date:** November 30, 2010

**To:** Environmental Quality Commission

**From:** Dick Pedersen, Director 

**Subject:** Agenda item K, Action item: Revisions to DEQ Regional Haze BART Rules for the PGE Boardman Power Plant  
December 9-10, 2010, EQC meeting

**Why this is important**

Portland General Electric's coal-fueled electric power plant at Boardman is the largest single source of air pollution in Oregon. Current DEQ rules allow the plant to operate until at least 2040 with stringent emission controls for reducing regional haze. Portland General Electric has requested that the EQC consider new rules that would impose less stringent emission controls but guarantee the permanent closure of the Boardman coal-fired boiler by no later than December 31, 2020. This rule proposal would satisfy federal Clean Air Act requirements, provide significant environmental and public health benefits to Oregon and Washington and set a national precedent for the early closure of a coal-fired power plant.

**DEQ recommendation and EQC Motion**

The Department of Environmental Quality recommends that the Environmental Quality Commission adopt the following revisions to its existing regional haze rules, and submit the revised rules to the U.S. Environmental Protection Agency as a revision to Oregon's Clean Air Act State Implementation Plan:

- Proposed revisions to the Regional Haze Rules in Division 223, and the State of Oregon Clean Air Act Implementation Plan in Division 200, as presented in Attachment A1.
- Proposed revisions to 2009 Oregon Regional Haze Plan, as presented in Attachment A2.

After an extensive public comment period and consideration of over 8,000 comments, DEQ is recommending that the commission repeal the 2009 BART rules for PGE Boardman, and replace those requirements with new control requirements consistent with the federal regional haze rules based upon PGE permanently ceasing the burning of coal at the Boardman plant in 2020, or an earlier date if the company chooses.

**Report contents**

This report is organized into the following sections:

1. Summary of federal regional haze requirements and 2009 DEQ rules for best available retrofit technology - known as BART - for the PGE Boardman coal-fired power plant.
2. PGE and DEQ rule options developed in spring-summer 2010 to explore BART controls together with PGE Boardman closure.
3. New PGE proposal for BART controls with permanent closure of the Boardman coal-fired power plant no later than Dec. 31, 2020.

4. Other issues affecting the future of the PGE Boardman facility.
5. DEQ recommendation to EQC.
6. Summary of public comment received by DEQ on rule options.

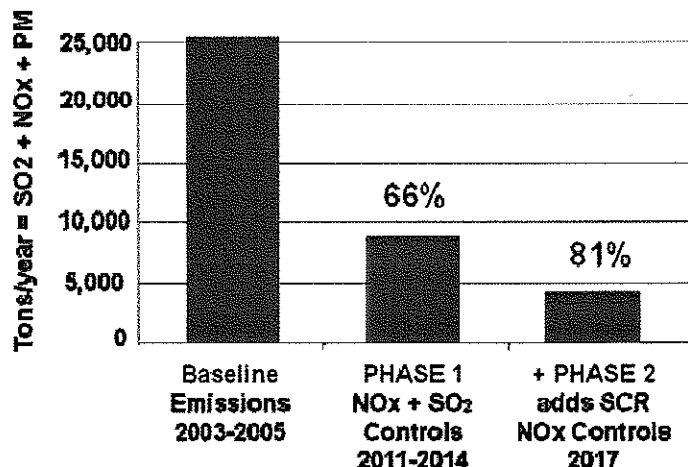
## Background

### 1. Summary of federal regional haze requirements and 2009 PGE Boardman BART rule

The federal regional haze rule requires states to adopt plans to improve visibility in 156 Class I areas across the country. Plans must address BART standards for certain older industrial facilities built before 1977 by evaluating whether they cause significant visibility impacts in wilderness areas and national parks (Class I areas). If they do, the states must require new pollution controls to be installed within five years.

The PGE Boardman plant is a 600 megawatt coal-fired electric generating plant that currently emits about 25,000 tons of air pollution per year. In 2009 the Environmental Quality Commission adopted the Oregon Regional Haze Plan and BART rules for PGE's Boardman plant to address significant visibility impacts in 14 Class I areas in Oregon and Washington, as well as visibility impacts in the Columbia River Gorge National Scenic Area. The 2009 rules use a two-phased approach to reduce total emissions 81 percent, or about 21,000 tons per year, and reduce peak visibility impacts in the 14 Class I areas an average of 83 percent, at a total cost of \$498 million dollars<sup>1</sup>. The emission controls include low-NOx burners with overfire air and selective catalytic reduction (SCR) to control nitrogen oxides, as well as semi-dry scrubbers to control sulfur dioxide. The 2009 BART rule anticipated that PGE would operate the Boardman facility until at least 2040, and likely beyond. The 2009 Oregon Regional Haze Plan contained a provision allowing PGE to submit a formal request to DEQ for a rule change if the company wanted to close the plant earlier.

Figure 1: Summary of emission reductions under the 2009 rules



<sup>1</sup> 2010 dollars.

## 2. PGE and DEQ rule options

Between April and October of 2010, PGE submitted three proposals to revise the 2009 BART rule to allow a 2020 closure date. PGE's first two proposals included emission reduction controls that DEQ found inadequate for meeting federal BART requirements. In response to the company's intention to find an option that met federal requirements, DEQ developed three federally-acceptable options for BART controls consistent with three possible closure dates in 2015, 2018, and 2020. DEQ then sought public comment on these options.

In November 2010, at the request of PGE and several stakeholder groups, DEQ reopened the public record to consider a new proposal from PGE that included more stringent BART controls and the guaranteed, permanent closure of the Boardman coal-fired boiler no later than Dec. 31, 2020. Following is a brief timeline and summary of the PGE and DEQ options developed between April and October 2010, as well as PGE's latest November proposal. Section 3 below further describes PGE's latest proposal that led to the re-opening of the comment period.

**April 2010.** PGE submitted the first proposal as part of a petition to the commission to revise the 2009 rules for the Boardman plant. PGE proposed to install much less stringent BART controls as part of their 2020 closure option. Under PGE's proposal, PGE could choose their early 2020 closure option, or choose to operate the plant indefinitely under DEQ's 2009 BART rule.

**June 2010.** The commission denied PGE's petition, concluding that the emission controls proposed by PGE were inadequate to meet BART. The commission instead directed DEQ to examine a wider range of possible BART pollution control options consistent with an early closure of the plant, and proceed with proposed revisions to the 2009 rules.

**July 2010.** DEQ developed three emission reduction options to satisfy federal BART requirements given three possible early closure dates from which PGE could select. A summary of these three options is provided in **Table 1** with a comparison to DEQ's 2009 Boardman BART rules. Each DEQ option identifies the stringency of control technology that would be required under each closure scenario. In general, the longer the facility operates, the more stringent BART controls are needed to satisfy federal requirements. For example:

- Option 1: 2020 closure. Low-NOx burners with overfire air controls for nitrogen oxide (NOx) emissions, and semi-dry scrubber controls for sulfur dioxide (SO<sub>2</sub>) emissions. This option does not include selective catalytic reduction controls for NOx, as required by the 2009 rules.
- Option 2: 2018 closure. The same Low-NOx burners with overfire air, but instead of semi-dry scrubbers, less advanced and expensive SO<sub>2</sub> controls using dry sorbent injection (DSI) technology.
- Option 3: 2015 closure. The same Low-NOx burners with overfire air, but no DSI or other controls for sulfur dioxide.



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These three options were proposed as an addition to the existing rules, providing PGE four separate choices to meet federal BART requirements.

**Table 1: Summary of DEQ Three Emission Reduction Options**

Option	Closure Date	Controls/Installation Date			Capital Cost (million \$)	Emission reduction tons/year (+percent)
		2011 (NO <sub>x</sub> )	2014 (SO <sub>2</sub> )	2017 (NO <sub>x</sub> )		
<b>2009 Rules (adopted)</b>	None	LNB/MOFA	Semi-dry Scrubber	SCR	\$497.6	20,800 (81%)
<b>Option 1</b>	<b>2020*</b>	LNB/MOFA/SNCR	Semi-dry Scrubber	-	\$320.6	17,800 (69%)
<b>Option 2</b>	<b>2018*</b>	LNB/MOFA/SNCR	DSI §	-	\$102.6	9,900 (39%)
<b>Option 3</b>	<b>2015/16*</b>	LNB/MOFA	-	-	\$35.7	4,800 (19%)
* Closure eliminates all pollution from the Boardman facility (approximately 25,500 tons per year of haze pollution as well as mercury and greenhouse gas emissions)						
§ Subject to pilot study evaluation						
<i>Table legend:</i>						
<b>NO<sub>x</sub> Controls:</b>						
<ul style="list-style-type: none"> <li>• LNB/MOFA = Low NO<sub>x</sub> burners with modified overfire air system.</li> <li>• SNCR = Selective Non-Catalytic Reduction system.</li> <li>• SCR = Selective Catalytic Reduction.</li> </ul>						
<b>SO<sub>2</sub> controls:</b>						
<ul style="list-style-type: none"> <li>• Semi-dry Scrubber, also known as semi-dry flue gas desulfurization system.</li> <li>• DSI = Dry Sorbent Injection</li> </ul>						

**August 2010.** DEQ convened an advisory committee to review DEQ's fiscal and economic impact analysis of the proposed rules. The committee provided information on costs and benefits of the options and direct costs of BART attributable to DEQs' rule, and to PGE's costs to close the Boardman facility, including costs associated with replacement power and possible economic effects on local economies. Committee members included a wide range of interests and stakeholders, including the Public Utilities Commission, Citizens Utility Board, PGE, Morrow County, Port of Morrow, business, environmental groups, and the Yakama Nation. The committee found that the cost of complying with BART could increase electricity rates to small businesses and other customers served by the Boardman plant in the range of 1 to 3 percent. These rate increases would be subject to future action by the PUC. See page 10 of this report for additional information on the fiscal and economic impact associated with this rulemaking.

**September 2010.** DEQ started a 30-day public comment period, and held five public hearings in Portland, Eugene, Medford, Bend, and Hermiston. DEQ asked for comment on its three options and whether a **cost effectiveness** threshold for BART of \$7,300/ton was justified and appropriate. While high compared to thresholds used by other states, DEQ believes this threshold can be justified given the very large geographic scope and magnitude of PGE's haze impacts. Emission control options costing more than \$7,300/ton were not proposed by DEQ.

Initially, DEQ proposed an additional nitrogen oxide control technology under DEQ Options 1 and 2 called selective non-catalytic reduction (SNCR). However, upon further analysis, DEQ determined that SNCR was not cost effective because it provided little additional visibility improvement in the affected Class I areas,<sup>2</sup> and could result in a possible side effect of excess ammonia emissions, which can produce fine particulate matter, potentially causing an adverse impact on area air quality.

**September 2010:** At the same time DEQ was seeking comment on the three DEQ options above, the agency also asked for public comment on a proposal from PGE, referred to as the *PGE BART III 2020 plan*. This proposal was very similar to DEQ's Option 2, in that it included the same controls and costs, but would allow the plant to operate until 2020, instead of 2018. PGE also proposed a "pilot study" for the DSI controls that would allow PGE to eliminate the DSI system if it would cause a significant increase in particulate emissions. The result of operating Boardman two years longer (2018-2020) with the same pollution controls as DEQ's Option 2 would be a lower cost-effectiveness level for BART of \$5,500, rather than the \$7,300 in DEQ's three options.<sup>3</sup> This option was more cost effective but less environmentally protective, and it did not guarantee that the plant would close in 2020.

*Note: The September PGE proposal described above was replaced by PGE's October proposal described below.*

### **3. New PGE (October) proposal for BART with permanent closure of the Boardman coal-fired power plant in 2020**

In late October, PGE and several public-interest groups asked DEQ to re-open the public record to consider an agreement they reached regarding the future of the Boardman plant, and PGE asked DEQ to consider a new proposal modifying their BART III plan based on this agreement. DEQ reopened the public comment period from October 29<sup>th</sup> through November 15<sup>th</sup> to take additional comments on PGE's new proposal.

**There are two crucial differences between PGE's prior proposals and this new one.** First, PGE would **guarantee permanent closure of the Boardman coal-fired boiler** by no later than Dec. 31, 2020, as well as install nitrogen oxide and sulfur dioxide emission controls that meet federal BART requirements. All other BART options would be eliminated, including DEQ's 2009 BART rule under which PGE could install expensive BART controls and continue operating the Boardman facility until 2040 or beyond.

Second, **DEQ would establish increasingly stringent emission limits for sulfur dioxide**, beginning with 0.4 lb/mmBtu for the 2014 to 2018 timeframe, and then reducing to 0.3 lb/mmBtu from 2018 to closure in 2020.

<sup>2</sup> DEQ's modeling showed an additional 0.18 deciview improvement in the Mt. Hood wilderness area, the highest impacted Class I area (and thus less improvement in the other Class I areas). In comparison, the level of a "perceptible change" in visibility is 0.50 deciview, so this improvement was considerably less than that.

<sup>3</sup> The incremental cost of the semi-dry flue gas desulfurization system, as compared to the dry sorbent injection system, is greater than \$7,300/ton.

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The proposed plan, upon EPA approval, would repeal the 2040 option in the 2009 rules that requires an approximately \$498 million dollar investment in controlling emissions for sulfur dioxide and nitrogen dioxide, replacing it with a 2020 closure plan. The new plan would require approximately \$36 million dollars in nitrogen oxide emission controls and \$23 to \$52 million dollars for sulfur dioxide emission controls in the 2011-2020 timeframe. By 2014, nitrogen oxide and sulfur dioxide emissions would be reduced by about 9,900 tons per year, with another 2,400 tons per year reduced by 2018, and all remaining emissions from the plant would be eliminated after 2020.

DEQ held two additional public hearings in Portland and Boardman to take comment on the new PGE proposal. A summary of these comments and those from the first comment period can be found in Attachment B: Summary of Public Comments and Agency Response, and Attachment C: Hearing Officer's Report on Public Hearings.

#### **Need for DSI Pilot Studies**

Both DEQ's Option 2 and PGE's proposal are based on the use of dry sorbent injection (DSI) control technology for sulfur dioxide control. DSI is a proven and effective control technology, but has not been installed on a facility as large as Boardman. PGE therefore proposed, and DEQ concurs, that two pilot studies are needed to ensure DSI does not negatively impact the mercury controls scheduled to be installed in 2011 as required by other DEQ rules, or result in increases in particulate emissions that would violate particulate standards. Based on the pilot studies, DEQ could adjust to the emission limits for sulfur dioxide in 2014 and 2018 by the minimum amount needed to avoid such problems, but sulfur dioxide emissions could not be less stringent than 0.55 lb/mmBtu.

#### **4. Other issues affecting the future of the PGE Boardman facility**

##### **Upcoming Federal Hazardous Air Pollutant Emission Standard**

In March 2011, EPA is expected to propose new rules to address hazardous air pollutants from power plants like the PGE Boardman plant. Final adoption of these rules is expected in November 2011. It is anticipated that the rules will address acid gases as well as mercury, and may require PGE to install more stringent controls beyond those required for BART. This could possibly make an even earlier closure date (pre-2020) cost effective for PGE. Since these rules have not yet been proposed, it is unknown how this could affect the Boardman plant.

##### **PGE-Stakeholder Law Suit**

A coalition of environmental groups has sued PGE over alleged violations of Oregon and federal air quality rules. This law suit may take years to resolve, and is one consideration for PGE in planning the future of the Boardman facility.

##### **EPA Notice of Violation**

In October, EPA issued a Notice of Violation to PGE for possible violations of air quality requirements under the Clean Air Act. EPA is currently conducting its investigation. As with the law suit above, this matter may take years to resolve, and is another consideration for PGE in planning the future of the Boardman facility.

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### Oregon Public Utilities Commission

On Nov. 23, 2010 the Oregon Public Utility Commission acknowledged (with requirements) PGE's 2009 Integrated Resources Plan and 2010 Addendum. PUC staff recommended that the PUC commission acknowledge PGE's new BART proposal, and require PGE to present an alternative proposal and supporting analysis in its next IRP update if the EQC does not adopt PGE's new approach.

## 5. DEQ recommendation to the EQC

After reviewing all the public comments (see summary on page 10) and evaluating all proposals, DEQ recommends the rule changes outlined in sections A and B below:

- A. Revise DEQ rules to adopt PGE's new BART proposal, which includes:**
- Permanent closure of the Boardman coal-fired boiler no later than Dec. 31, 2020.
  - Low NO<sub>x</sub> burners with overfire air to meet BART as proposed by DEQ.
  - DSI controls to meet BART for sulfur dioxide control as proposed by DEQ.
  - A more stringent sulfur dioxide limit from 2018-2020 as proposed by DEQ.
  - Pilot studies for DSI in 2014 and 2017.
  - Repealing the PGE Boardman BART rules adopted in 2009

Table 2 below summarizes the emission reductions and resulting visibility improvements from the recommended rule change. Specific emission limits and other requirements are described in the revised BART rule (see Attachment A-1).

**Table 2: Summary of the new 2020 rule proposal**

BART control technology	Compliance Date	Emission reduction tons/year (+percent)	Mt. Hood Visibility Impacts (dv)	Visibility Improvement (dv)
Baseline	----	---	4.98	---
LNB/MOFA	7/1/11	4,800 (19%)	3.54	1.44
+ DSI-1 *	7/1/14	9,950 (39%)	2.57	2.41
+ DSI-2 *	7/1/18	12,400 (48%)	2.23	2.75
+ Plant Closure	12/31/20	25,500 (100%)	none	4.98
* Subject to pilot study evaluation ~ Closure eliminates approximately 25,500 tons per year of NO <sub>x</sub> , SO <sub>2</sub> , and particulate emissions. This facility is also permitted to emit a maximum of approximately 44,200 tons per year of these pollutants. Closure will eliminate these allowable emissions as well.				
<b>Table Legend:</b>				
<ul style="list-style-type: none"> <li>• Baseline = visibility impact with no controls</li> <li>• LNB/MOFA = Low NO<sub>x</sub> burners with modified overfire air system.</li> <li>• adds DSI 1 = Dry Sorbent Injection @ 0.40 lb/mmBTU SO<sub>2</sub> emission limit</li> <li>• adds DSI 2 = Dry Sorbent Injection @ 0.30 lb/mmBTU SO<sub>2</sub> emission limit.</li> </ul>				

**B. Adopt DEQ's Option 3 as a contingency measure**

As described earlier, a number of factors beyond BART requirements could lead to PGE desiring a BART closure option earlier than 2020. While not requested by PGE, DEQ's Option 3 provides this contingency path for PGE if needed. DEQ's

Option 3 is summarized below in **Table 3**.

**Table 3: Summary of DEQ Option 3**

Option	Closure Date	Controls/Installation Date			Capital Cost (million \$)	Emission reduction tons/year (+percent)
		2011 (NO <sub>x</sub> )	2014 (SO <sub>2</sub> )	2017 (NO <sub>x</sub> )		
Option 3	2015/16	LNB/MOFA	-	-	\$35.7	4,800 (19%)
~ It should be noted that PGE Boardman must still comply with DEQ's current mercury regulations in 2012.						

DEQ's proposed rules would not preclude PGE from closing the coal-fired boiler before 2020 if that decision is made by PGE. At any time PGE could request an earlier closure date for the coal-fired boiler and a modification to its air quality permit.

#### **Rationale for DEQ Recommendation**

The nitrogen oxide and sulfur dioxide emission controls proposed by PGE in its modified BART III proposal meet federal BART requirements. More stringent and expensive BART controls for Boardman could also be justified, if the facility operated to 2040 or beyond. However, the guaranteed, permanent closure of the coal-fired boiler must be taken into account when evaluating the overall environmental and public health benefits of the rule, the cost effectiveness of controls, and the level of stringency appropriate for BART controls in the 2011-2019 timeframe.

DEQ concludes that the proposed BART controls, when combined with the permanent closure of the coal fired boiler no later than 2020, meet federal requirements and provide a significant environmental and public health benefit for Oregon. Consultation with EPA suggests that EPA would approve DEQ's recommended rule package as part of Oregon's regional haze plan. In brief, this package would:

- Reduce haze forming emissions by 48 percent in the 2011 to 2019 timeframe and eliminate these pollutants completely after closure.
- Significantly improve visibility in 14 Class I wilderness areas in Oregon and Washington.
- Significantly improve visibility in the Columbia River Gorge National Scenic Area and reduce acid deposition, lessening the risk to Native American natural and cultural resources.
- Permanently eliminate approximately 4,000,000 tons per year of greenhouse gasses and all of the plant's mercury emissions, which currently range from 137 to 281 pounds per year.

#### **Replacement Power**

DEQ's proposed rules do not prevent plant owners from applying for a new permit to

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construct a new power plant at the Boardman site, or from repowering the existing Boardman boiler using an alternative fuel. Any new facility, or the repowering of the existing coal-boiler, would need to be permitted by DEQ as a new facility without relying on the emission reductions from the existing plant and in compliance with all applicable state and federal requirements, including modern air pollution controls and air quality impact analysis.

**Effects of rule** As described above, if this proposed rulemaking is adopted, it would have the following effects:

1. Require PGE to install nitrogen oxide and sulfur dioxide controls that meet federal BART requirements.
2. Upon EPA approval, guarantee permanent closure of the Boardman coal-fired boiler.
3. Meet Clean Air Act requirements for regional haze, and also provide other environmental and public health benefits.
4. The costs attributable to DEQ's BART requirement are expected to increase electric rates for customers of the Boardman power plant, contingent on approval by the PUC. Additional costs associated with PGE's closure decisions are also expected to affect electric rates, although these costs are not attributable to DEQ's rule.

**Fiscal Impact:**

In August 2010, DEQ discussed its draft fiscal and economic impact analysis with a fiscal advisory committee. DEQ's analysis and committee discussion covered the costs and benefits of DEQ's proposed three options as well as non-BART costs associated with plant closure such as decommissioning the coal boiler, obtaining replacement power, and potential adverse economic impacts on the local economies including job loss and major tax revenue reductions affecting funding for local government, schools and other services in the region if PGE decides to close the plant. The committee found that DEQ's proposed requirements could impact small business and increase electric rates for customers of the Boardman facility in the range of 1 to 3 percent. PGE provided additional information estimating that closure could result in possible rate increases of 3 to 4 ½ percent. Any future rate increases would be subject to actions taken by the Oregon Public Utilities Commission.

For a more detailed summary of the fiscal and economic effects of this proposal see Attachment E: Statement of Need and Fiscal and Economic Impact.

**Commission authority** The commission has authority to take this action under ORS 468.020, 468A.025, 468A.035, 468A.310 and 477.013.

**Stakeholder involvement** DEQ solicited early public input on the three draft BART control options during July 2010, in advance of the formal public comment period. Options were posted to DEQ's website and the public was encouraged to send comments to DEQ. These comments were considered by DEQ when finalizing the BART options to propose for rulemaking. As noted above, in August 2010 DEQ also consulted with a fiscal advisory committee to obtain information on the likely costs of this proposed rulemaking.

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**Public comment** There were two public comment periods associated with this rulemaking. The first was from Sept. 1 to Oct. 1, 2010, and the second was from Oct. 29 to Nov. 15, 2010. There were seven public hearings held at six different locations: Portland (2 hearings), Eugene, Medford, Hermiston, Boardman, and The Dalles. A total of 359 persons attended the hearings, and 167 provided testimony. DEQ received over 8,000 comments, mostly via email and postcards. DEQ received about 100 written letters.

#### **DEQ Summary of the public comments**

The summary of public comments and DEQ's responses are in Attachment B: Summary of Public Comments and Agency Response, and Attachment C: Hearing Officer's Report on Public Hearings.

#### **Summary from the first comment period**

During the first comment period, the public comments were generally split between support of PGE's "BART III" 2020 plan, or closing the plant much sooner (such as 2015, or as soon as possible). Other comments from EPA, federal land managers, and others supported DEQ's three emission reduction options.

1. Support for PGE BART III Proposal. Supporters of PGE's BART III proposal included PGE employees, private citizens, and numerous representatives of city/county government, chamber of commerce, and business and economic development associations, specifically in the Portland and Hermiston areas.

Many of the comments focused on concerns about the economic impact of the plant closing early, and the need to provide PGE with sufficient time (10 years) to buy or build replacement power that is affordable, reliable, cost effective, and includes the potential for renewable and "greener" options. It was pointed out that the PGE Boardman plant is currently an important "base load" source of power, and that it would take time to find replacement power. Many expressed the concern that while closure of the Boardman plant would worsen the current economy and affect many jobs, PGE's BART III proposal was the best option realistically available.

Other comments in support of PGE's proposal stated that it (1) ends reliance on coal and provides a smoother transition into other types of energy; (2) eliminates all emissions from the plant after 2020; (3) provides significant cost savings to DEQ's proposed options, and thus lowers the overall economic impact; (4) rather than using the highest cost effectiveness threshold in the nation, it represents a lower and reasonable cost effectiveness level that is more consistent with what other states have adopted for BART; (5) avoids a hasty shutdown that could lead to increased electricity rates and impacts on low-income citizens and small businesses; and (6) gives PGE the ability to verify that the proposed dry sorbent injection controls are technically feasible by conducting a pilot test study first. Representatives of PGE stated that their belief that the BART III proposal would meet EPA approvability requirements and result in significant air quality and environmental benefits after 2020, and would include the installation of \$75 million in pollution controls for nitrogen oxide and sulfur dioxide emissions, significantly reducing these emissions over the next 10 years. They stated that PGE's proposal has no legal barriers in terms of federal approvability or enforceability, and represents a unique opportunity to end coal

combustion 20 years early, as an alternative to the plant continuing to operate to 2040 and beyond. They added that PGE is still moving forward to meet DEQ's mercury rules a year ahead of the required 2012 compliance date, which will reduce these emissions by 90 percent.

2. Support of early or immediate plant closure. Supporters of an earlier closure of the Boardman plant included many environmental groups, several health organizations, and numerous students and private residents.

Most of these comments were divided between closure in 2015, or closing the plant as soon as possible. The reasons cited focused primarily on concerns about the health effects of burning of coal, and the need to address global warming. Health concerns pointed to the plant's current emissions of approximately 25,000 tons of air pollution, as well as mercury emissions, and that these emissions cause significant health problems, including asthma, lung cancer, and other respiratory issues. Global warming concerns pointed to the plant currently emitting about 4 million tons of greenhouse gas emissions, the largest source in the state.

There was strong support to end reliance on coal technology and to pursue cleaner and renewable energy resources. Others commented that allowing PGE to operate until 2020 was too long, would significantly harm public health and the environment, and that PGE does not need 10 years to find affordable and reliable replacement power, as cleaner forms of power generation are available now. Other comments included (1) from a cost standpoint, the earliest closure would avoid making unnecessary investments in expensive controls for an "outdated plant"; (2) transitioning to renewable energy could create more "green jobs"; (3) urging DEQ to repeal the existing rules for PGE Boardman which allow the plant to continue to operate if PGE decides against any of the options, (4) opposition to giving PGE another 10 years to operate when the plant has avoided installing any major pollution controls since it was constructed in 1977, and (5) criticism of DEQ for not taking action during this time to require controls or close the plant.

3. Support of DEQ three options. This support was mostly reflected in comments from EPA, the National Park Service, Forest Service, and several environmental groups. In their comments, EPA and the federal land managers emphasized the visibility and air quality benefits of an early closure. Some of these comments urged more stringent pollution controls prior to closure. A smaller number of the general public supported DEQ's three options than those who supported the positions in #2 above. Out of the three options, more favored Option 3 (closure in 2015/16) than the other options, citing the benefits of an earlier shutdown and avoiding making additional major investments in the coal plant.

#### **Summary from the second comment period**

During the second comment period, the public comments were generally split between support of PGE's new BART proposal and general opposition. At the Portland public hearings, supporters of PGE's new proposal commented that it represented a good compromise between DEQ's Option 2 with a 2018 closure date, and PGE's BART III proposal with a 2020 closure date. Those in opposition stated many of the same concerns from the first comment period about public health and the need to address global warming. At the Boardman public hearing, nearly all of the testimony was in support of PGE's new



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BART proposal. There was also testimony that there should be no earlier closure options added to the rules, such as in DEQ's Option 2 and 3. The comments stressed the importance of one closure date in 2020, and nothing else. A few comments were made opposing any closure of the Boardman plant, citing the importance of continuing to use coal for energy, and that regional haze is not a valid reason for requiring expensive pollution controls for the plant.

#### Key issues

##### **Does the suite of nitrogen oxide and sulfur dioxide emission controls proposed by PGE and recommended by DEQ meet federal BART requirements?**

Yes, the proposed emission controls are sufficiently stringent to meet federal BART requirements when taken together with a plant closure in 2020. More stringent and expensive BART controls for Boardman could also be justified, if the facility were to operate to 2040 or beyond. However, the guaranteed, permanent closure of the coal-fired boiler must be taken into account when evaluating the overall environmental and public health benefits of the rule, the cost effectiveness of controls, and the level of stringency appropriate for BART controls in the 2011-2020 timeframe.

##### **Should PGE be required to close sooner than 2020?**

The EQC does not have authority to require closure of the Boardman facility. The rule proposed by PGE and recommended by DEQ guarantees permanent closure of the Boardman coal-fired boiler no later than Dec. 31, 2020. DEQ has also proposed an option for a 2015 closure scenario that PGE could use if factors beyond regional haze make an even earlier closure attractive to PGE. DEQ's proposed rule does not preclude PGE from closing the Boardman facility at any time between 2011 and 2019.

There was considerable public support for an earlier closure in 2015, or sooner. PGE's request for a single closure date of 2020 emphasized the importance of having a full 10-year time period to make the necessary transition away from coal burning, to lessen the economic impact of an early plant closure, and to develop replacement power, among other concerns.

##### **Should DEQ repeal the existing 2009 BART rules that allow operation until 2040?**

Yes. Repealing the 2009 BART rule (and replacing it with this proposed rule) would remove the option for PGE to install the 2009 BART control equipment and operate the Boardman coal-fired boiler indefinitely (2040 and beyond). PGE's option to implement the 2009 BART rule and operate the plant to 2040 and beyond will end once EPA approves this new 2010 regional haze BART submittal.

##### **How can people be sure PGE will actually close the coal-fired boiler?**

Upon EPA approval, DEQ's new BART rules and PGE's 2020 closure commitment will become part of Oregon's Clean Air Act Implementation Plan. This plan will be federally approved and enforceable. Once EPA approves the new 2010 BART rule, DEQ's 2009 BART rule (i.e. 2040 option) will no longer be available to PGE. If PGE operated beyond Dec. 31, 2020 it would be subject to state and federal enforcement that could include both civil and criminal penalties. PGE would also be at risk of third-party law suits for violation of air quality rules.

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**Next steps** If approved, DEQ will submit the revised rules and revisions of Oregon's Regional Haze Plan to EPA as a revision to the Oregon State Clean Air Act Implementation Plan. EPA is required to act on DEQ's regional haze state implementation plan submittal no later than May 30, 2011.

**Attachments**

- A. Proposed Rulemaking
  - 1. Revisions to Division 223 and Division 200.
  - 2. Revisions to the 2009 Oregon Regional Haze Plan
- B. Summary of Public Comments and Agency Responses
- C. Hearing Officer's Report on Public Hearings
- D. Relationship to Federal Requirements Questions
- E. Statement of Need and Fiscal and Economic Impact
- F. Land Use Evaluation Statement

**Available upon request**

- 1. DEQ's Fiscal Impact Report
- 2. Proposed Rulemaking Announcement
- 3. Written comments received
- 4. DEQ's BART Report for PGE Boardman
- 5. Rule Implementation Plan
- 6. Legal Notice of Hearing

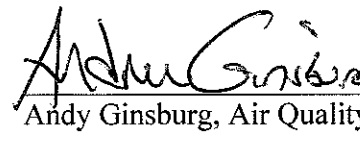
Approved:

Section:

  
 David Collier, Air Quality Planning Section Manager

Division:

  
 Linda-Hayes Gorman, Eastern Region Administrator

  
 Andy Ginsburg, Air Quality Division Administrator

Report prepared by: Brian Finneran and Mark Fisher  
 Phone: 503-229-6278

## **Attachment 2**

### Evidence that the State has the Necessary Legal Authority

See Attachment 1.1 “Commission Authority” (page #9 of Staff Report, Agenda Item K)

## **Attachment 3**

### **Provisions Submitted for Approval**

#### **Adopted and amended SIP rules submitted to SOS**

- 3.1 General Air Pollution Procedures and Definitions: OAR 340-200-0040. Effective December 10, 2010
- 3.2 Regional Haze Rules: OAR 340-223-0010 through 340-223-0080. Effective December 10, 2010
- 3.3 Oregon Regional Haze Plan for Implementing Section 308 (40 CFR 51.308) of the Regional Haze Rule. Effective December 9, 2010 (See attached binder)

#### **Redline/strikeout version of adopted, amended and repealed SIP rules**

- 3.4 General Air Pollution Procedures and Definitions: OAR 340-200-0040. Effective December 10, 2010
- 3.5 Regional Haze Rules: OAR 340-223-0010 through 340-223-0080. Effective December 10, 2010

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### DIVISION 200 GENERAL AIR POLLUTION PROCEDURES AND DEFINITIONS

**340-200-0040**

#### **State of Oregon Clean Air Act Implementation Plan**

(1) This implementation plan, consisting of Volumes 2 and 3 of the State of Oregon Air Quality Control Program, contains control strategies, rules and standards prepared by the Department of Environmental Quality and is adopted as the state implementation plan (SIP) of the State of Oregon pursuant to the federal **Clean Air Act, 42 U.S.C.A 7401 to 7671q**.

(2) Except as provided in section (3), revisions to the SIP will be made pursuant to the Commission's rulemaking procedures in division 11 of this chapter and any other requirements contained in the SIP and will be submitted to the United States Environmental Protection Agency for approval. The State Implementation Plan was last modified by the Commission on December 9, 2010.

(3) Notwithstanding any other requirement contained in the SIP, the Department may:

(a) Submit to the Environmental Protection Agency any permit condition implementing a rule that is part of the federally-approved SIP as a source-specific SIP revision after the Department has complied with the public hearings provisions of 40 CFR 51.102 (July 1, 2002); and

(b) Approve the standards submitted by a regional authority if the regional authority adopts verbatim any standard that the Commission has adopted, and submit the standards to EPA for approval as a SIP revision.

**NOTE:** Revisions to the State of Oregon Clean Air Act Implementation Plan become federally enforceable upon approval by the United States Environmental Protection Agency. If any provision of the federally approved Implementation Plan conflicts with any provision adopted by the Commission, the Department shall enforce the more stringent provision.

Stat. Auth.: ORS 468.020

Stats. Implemented: ORS 468A.035

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### DIVISION 223 REGIONAL HAZE RULES

#### 340-223-0010

##### Purpose

OAR 340-223-0020 through 340-223-0080 establish requirements for certain sources emitting air pollutants that reduce visibility and contribute to regional haze in Class I areas, for the purpose of implementing Best Available Retrofit Technology (BART) requirements and other requirements associated with the federal Regional Haze Rules in 40 CFR § 51.308, as in effect on December 9, 2010.

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

Hist.: DEQ 3-2009, f. & cert. ef. 6-30-09

#### 340-223-0020

##### Definitions

The definitions in OAR 340-200-0020 and this rule apply to this division. If the same term is defined in this rule and OAR 340-200-0020, the definition in this rule applies to this division.

(1) “BART-eligible source” means any source determined by the Department to meet the criteria for a BART-eligible source established in Appendix Y to 40 CFR Part 51, “Guidelines for BART Determinations Under the Regional Haze Rule”, and in accordance with the federal Regional Haze Rules under 40 CFR § 51.308(e), as in effect on December 9, 2010.

(2) “Best Available Retrofit Technology (BART)” means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant that is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source or unit, the remaining useful life of the source or unit, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

(3) “Deciview” means a measurement of visibility impairment. A deciview is a haze index derived from calculated light extinction, such that uniform changes in haziness correspond to uniform incremental changes in perception across the entire range of conditions, from pristine to highly impaired. The deciview haze index is calculated based on the following equation (for the purposes of calculating deciview, the atmospheric light extinction coefficient must be calculated from aerosol measurements):

$$\text{Deciview haze index} = 10 \ln(b_{\text{ext}}/10 \text{ Mm}^{-1})$$

Where  $b_{\text{ext}}$  = the atmospheric light extinction coefficient, expressed in inverse megameters ( $\text{Mm}^{-1}$ ).

(4) “Dry sorbent injection pollution control system” means a pollution control system that reduces sulfur dioxide emissions by combining a dry alkaline reagent directly with the boiler exhaust gas stream to enable the reagent to adsorb sulfur dioxide and be collected by the existing electrostatic precipitator.

(5) “Subject to BART” means a BART-eligible source that based on air quality dispersion modeling causes visibility impairment equal to or greater than 0.5 deciview in any Class I area, at the 98th percentile for both a three-year period and one-year period.

(6) “Ultra-low sulfur coal” means coal that contains no more than 0.25 lb sulfur/mmBtu heat input on average.

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

Hist.: DEQ 3-2009, f. & cert. ef. 6-30-09

### **340-223-0030**

#### **BART and Additional Regional Haze Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106)**

(1) Emissions limits:

(a) Between July 1, 2011 and December 31, 2020, nitrogen oxide emissions must not exceed 0.23 lb/mmBtu heat input as a 30-day rolling average, provided that:

(A) If the source submitted a complete application for construction and/or operation of pollution control equipment to satisfy the emissions limit in subsection (1)(a) at least eight months prior to the compliance date of July 1, 2011, and the Department has not approved or denied the application by the compliance date, the compliance date is extended until the Department approves or disapproves the application, but may not be extended to a date more than five years from the date that the United States Environmental Protection Agency approves a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR 340-223-0030; and

(B) If it is demonstrated by December 31, 2011 that the emissions limit in subsection (1)(a) cannot be achieved with combustion controls, the Department by order may grant an extension of compliance to July 1, 2013.

(b) Except as provided in section (3) below:

(A) Between July 1, 2014 and June 30, 2018, sulfur dioxide emissions must not exceed 0.40 lb/mmBtu heat input as a 30-day rolling average; and

(B) Between July 1, 2018 and December 31, 2020, sulfur dioxide emissions must not exceed 0.30 lb/mmBtu heat input as a 30-day rolling average.

(c) Between July 1, 2014 and December 31, 2020, particulate matter emissions must not exceed 0.040 lb/mmBtu heat input as determined by compliance source testing.

(d) During periods of startup and shutdown, the following emissions limits apply instead of the limits in subsections (a) through (c):

(A) Sulfur dioxide emissions must not exceed 1.20 lb/mmBtu, as a 3-hour rolling average;

(B) Nitrogen oxide emissions must not exceed 0.70 lb/mmBtu, as a 3-hour rolling average; and

(C) Particulate matter emissions must be minimized to extent practicable pursuant to approved startup and shutdown procedures in accordance with OAR 340-214-0310.

(e) The Foster-Wheeler boiler at the source must permanently cease burning coal by no later than December 31, 2020. Notwithstanding the definition of netting basis in OAR 340-200-0020, and the process for reducing plant site emission limits in OAR 340-222-0043, the netting basis and PSEs for the boiler are reduced to zero upon the date on which the boiler permanently ceases burning coal, and prior to that date the netting basis and PSEs for the boiler apply only to physical changes or changes in the method of operation of the source for the purpose of complying with emission limits applicable to the boiler.

(2) Studies to evaluate compliance with the sulfur dioxide emissions limits in paragraphs (1)(b)(A)-(B), and the potential side effects of compliance with those limits, if required by section (3), must be completed as follows:

(a) A plan to evaluate the sulfur dioxide emissions limit in paragraph (1)(b)(A) must be submitted for Department approval by July 1, 2011, and the results of the evaluation must be submitted to the Department by July 1, 2013;

(b) A plan to evaluate the sulfur dioxide emissions limit in paragraph (1)(b)(B) must be submitted for Department approval by July 1, 2015, and the results of the evaluation must be submitted to the Department by July 1, 2017; and

(c) Each study pursuant to this section (2) must:

(A) Evaluate whether a dry sorbent injection pollution control system is technically infeasible, will prevent compliance with mercury emissions limits under OAR 340-228-0606, or cause a significant air quality impact (as that term is defined in OAR 340-200-0020) for PM<sub>10</sub> or PM<sub>2.5</sub>;

(B) Evaluate a range of commercially available sorbent materials that could be used in a dry sorbent injection pollution control system to reduce sulfur dioxide emissions;



(C) Evaluate the potential for significant air quality impacts for PM<sub>10</sub> or PM<sub>2.5</sub> as follows:

(i) Perform modeling consistent with the requirements of OAR 340-225-0050(1) with screening meteorological data containing conservative meteorological assumptions; or

(ii) If modeling with screening meteorological data pursuant to subparagraph (i) demonstrates that significant air quality impacts for PM<sub>10</sub> or PM<sub>2.5</sub> will occur, perform modeling with site specific meteorological data obtained from the installation of a meteorological monitoring station, including one year of monitoring data for each study. The meteorological monitoring station must be installed, certified, operated and maintained, and the output of the meteorological monitoring station must be recorded, in accordance with a plan approved by the Department;

(D) Evaluate the use of other sulfur dioxide pollution control systems of equal or lower cost as a dry sorbent injection pollution control system, including but not limited to the use of ultra-low sulfur coal, if the study demonstrates that the use of a dry sorbent injection pollution control system is technically infeasible, will prevent compliance with mercury emissions limits under OAR 340-228-0606, or will cause a significant air quality impact (as that term is defined in OAR 340-200-0020) for PM<sub>10</sub> or PM<sub>2.5</sub>; and

(E) If applicable, propose an emissions limit for sulfur dioxide based on a 30-day rolling average that exceeds the limits listed in paragraphs (1)(b)(A)-(B), based upon the reduction of sulfur dioxide emissions to the maximum extent feasible through the use of a dry sorbent injection pollution control system or another sulfur dioxide pollution control system of equal or lower cost, including but not limited to the use of ultra-low sulfur coal, provided that the emissions limit may not exceed 0.55 lb/mmBtu heat input as a 30-day rolling average.

(3) Between July 1, 2014 and December 31, 2020, sulfur dioxide emissions may exceed the limit listed in paragraph (1)(b)(A) or (B), or both, if:

(a) Studies have been submitted pursuant to section (2);

(b) Compliance with the applicable emissions limit or limits would:

(A) Be technically infeasible;

(B) Prevent compliance with mercury emissions limits under OAR 340-228-0606; or

(C) Cause a significant air quality impact, as that term is defined in OAR 340-200-0020, for PM<sub>10</sub> or PM<sub>2.5</sub>;

(c) Sulfur dioxide emissions are otherwise reduced to the maximum extent feasible as described in subsection (2)(c); and

(d) The source's Oregon Title V Operating Permit is modified to include a federally enforceable permit limit reflecting the requirements of subsection (2)(c), prior to the compliance date for the sulfur dioxide emissions limit in paragraph (1)(b)(A) or (B) that will be exceeded; provided that if the source's Oregon Title V Operating Permit has not been modified prior to the applicable compliance date, sulfur dioxide emissions may exceed the emissions limit in paragraph (1)(b)(A) or (B) if the source submitted a complete application to modify its Oregon Title V Operating Permit at least eight months prior to the

applicable compliance date and sulfur dioxide emissions do not exceed the emissions limit proposed in its application (which may not exceed 0.55 lb/mmBtu heat input as a 30-day rolling average).

(4) Compliance demonstration. Using the procedures specified in section (5) of this rule:

(a) Compliance with a 30-day rolling average limit must be demonstrated within 180 days of the compliance date specified in section (1) of this rule; and

(b) Compliance with any 30-day rolling average limit for sulfur dioxide that may be established pursuant to subsection (3)(c) must be demonstrated within 180 days of the compliance date for the limit in paragraph (1)(b)(A) or (B) that is superseded by the emissions limit established pursuant to subsection (3)(c).

(5) Compliance Monitoring and Testing.

(a) Compliance with the emissions limits in subsections (1)(a), (b) and (d)(A)-(B), and with any emissions limit for sulfur dioxide that may be established pursuant to subsection (3)(c), must be determined with a continuous emissions monitoring system (CEMS) installed, operated, calibrated, and maintained in accordance with the acid rain monitoring requirements in 40 CFR Part 75 as in effect on December 9, 2010.

(A) The hourly emissions rate in terms of lb/mmBtu heat input must be recorded each operating hour, including periods of startup and shutdown.

(B) The daily average emissions rate must be determined for each boiler operating day using the hourly emissions rates recorded in (A), excluding periods of startup and shutdown.

(C) 30-day rolling averages must be determined using all daily average emissions rates recorded in (B) whether or not the days are consecutive.

(D) The daily average emission rate is calculated for any calendar day in which the boiler combusts any fuel. An operating hour means a clock hour during which the boiler combusts any fuel, either for part of the hour or for the entire hour.

(b) Compliance with the particulate matter emissions limit in subsection (1)(c) must be determined by EPA Methods 5 and 19 as in effect on December 9, 2010.

(A) An initial particulate matter source test must be conducted by January 1, 2015.

(B) Subsequent tests must be conducted in accordance with a schedule specified in the source's Oregon Title V Operating Permit, but not less than once every 5 years.

(C) All testing must be performed in accordance with the Department's Source Sampling Manual as in effect on December 9, 2010.

(6) Notifications and Reports.

(a) The Department must be notified in writing within 7 days after any control equipment (including combustion controls) used to comply with emissions limits in section (1), and with any emissions limit for sulfur dioxide that may be established pursuant to subsection (3)(c), begins operation.

(b) For nitrogen oxide and sulfur dioxide emissions limits in section (1) based on a 30-day rolling average, a compliance status report, including CEMS data, must be submitted within 180 days of the compliance dates specified in section (1).

(c) For any sulfur dioxide emissions limit that may be established pursuant to subsection (3)(c), a compliance status report, including CEMS data, must be submitted within 180 days of the compliance date for the limit in paragraph (1)(b)(A) or (B) that is superseded by the emissions limit established pursuant to subsection (3)(c).

(d) For particulate matter, a compliance status report, including a source test report, must be submitted within 60 days of completing the initial compliance test and all subsequent tests as specified in subsection (5)(b).

(e) The Department must be notified in writing within 7 days of the date upon which the boiler permanently ceases burning coal.

(7) The following provisions of this rule constitute BART requirements for the Foster-Wheeler Boiler: subsection (1)(a), paragraph (1)(b)(A), subsections (1)(c)-(e), (2)(a) and (2)(c), and sections (3)-(6).

(8) The following provisions of this rule constitute additional requirements pursuant to the federal Regional Haze Rules under 40 CFR § 51.308(e) for the Foster-Wheeler Boiler: paragraph (1)(b)(B), subsections (2)(b) and (2)(c), and sections (3)-(6).

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

Hist.: DEQ 3-2009, f. & cert. ef. 6-30-09

### **340-223-0040**

#### **Federally Enforceable Permit Limits**

(1) A BART-eligible source that would be subject to BART may accept a federally enforceable permit limit or limits that reduces the source's emissions and prevents the source from being subject to BART.

(2) Any BART-eligible source that accepts a federally enforceable permit limit or limits as described in section (1) to prevent the source from being subject to BART, and that subsequently proposes to terminate its federally enforceable permit limit or limits, and that as a result will increase its emissions and become subject to BART, must submit a BART analysis to the Department and install BART as determined by the Department prior to terminating the federally enforceable permit limit or limits.

(3) The Foster-Wheeler boiler at The Amalgamated Sugar Company plant in Nyssa, Oregon (Title V permit number 23-0002) is a BART-eligible source, and air quality dispersion modeling demonstrates that

it would be subject to BART while operating. However, it is not operating as of December 9, 2010, and therefore is not subject to BART. Prior to resuming operation, the owner or operator of the source must either:

(a) Submit a BART analysis and install BART as determined by the Department by no later than five years from the date that the United States Environmental Protection Agency approves a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR chapter 340, division 223, or before resuming operation, whichever is later; or

(b) Obtain and comply with a federally enforceable permit limit or limits assuring that the source's emissions will not cause the source to be subject to BART.

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

Hist.: DEQ 3-2009, f. & cert. ef. 6-30-09

### **340-223-0050**

#### **Alternative Regional Haze Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106)**

(1) The owner and operator of the Foster-Wheeler boiler at the Boardman coal-fired power plant may elect to comply with OAR 340-223-0060 and 340-223-0070, or with OAR 340-223-0080, in lieu of complying with OAR 340-223-0030, if the owner or operator provides written notification to the Director by no later than July 1, 2014. The written notification must identify which rule of the two alternatives the owner or operator has chosen to comply with. The owner or operator may not change its chosen method of compliance after July 1, 2014.

(2) Compliance with OAR 340-223-0080 in lieu of complying with OAR 340-223-0030 is allowed only if the Foster-Wheeler boiler at the Boardman coal-fired power plant permanently ceases to burn coal within five years of the approval by the United States Environmental Protection Agency (EPA) of the revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR chapter 340, division 223. If the boiler has not permanently ceased burning coal by that date, the owner and operator shall be liable for violating OAR 340-223-0030 for each day beginning July 1, 2014 on which the owner or operator did not comply with OAR 340-223-0030. This liability shall include, but is not limited to, civil penalties pursuant to OAR chapter 340, division 12, which includes penalties for the economic benefit of operating the facility without the required pollution controls.

(3) If, by December 31, 2011, the EPA fails to approve a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR 340-223-0030 (concerning BART requirements based upon permanently ceasing the burning of coal in the Foster-Wheeler Boiler by December 31, 2020), or OAR 340-223-0060 and 340-223-0070, then the compliance date of July 1, 2014 in OAR 340-223-0060(2)(b) and (c) (sulfur dioxide and particulate matter emissions limits) is delayed until three years from the date of EPA approval.

(4) Notwithstanding sections (1) and (3), if the EPA approves a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR 340-223-0030 (concerning BART requirements based

upon permanently ceasing the burning of coal in the Foster-Wheeler Boiler by December 31, 2020), then OAR 340-223-0060 and 340-223-0070 are repealed, compliance with OAR 340-223-0060 and 340-223-0070 in lieu of complying with OAR 340-223-0030 is no longer an alternative, and compliance with OAR 340-223-0030 or OAR 340-223-0080 is required.

### **340-223-0060**

#### **Alternative BART Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106) Based Upon Operation Until 2040 or Beyond**

(1) Subject to OAR 340-223-0050, the owner or operator of the Foster-Wheeler boiler at the Boardman coal-fired power plant may elect to comply with this rule and 340-223-0070 in lieu of compliance with OAR 340-223-0030.

(2) Emissions limits:

(a) On and after July 1, 2011, nitrogen oxide emissions must not exceed 0.28 lb/mmBtu heat input as a 30-day rolling average and 0.23 lb/mmBtu heat input as a 12-month rolling average.

(A) If it is demonstrated by July 1, 2012 that the emissions limits in (a) cannot be achieved with combustion controls, the Department may grant an extension of compliance to July 1, 2014.

(B) If an extension is granted, on and after July 1, 2014 the nitrogen oxide emissions must not exceed 0.19 lb/mm Btu heat input as a 30-day rolling average, and the emissions limits of 0.28 lb/mmBtu heat input as a 30-day rolling average and 0.23 lb/mmBtu heat input as a 12-month rolling average no longer apply.

(b) On and after July 1, 2014, sulfur dioxide emissions must not exceed 0.12 lb/mmBtu heat input as a 30-day rolling average.

(c) On and after July 1, 2014, particulate matter emissions must not exceed 0.012 lb/mmBtu heat input as determined by compliance source testing.

(d) During periods of startup and shutdown, the following emissions limits apply instead of the limits in subsections (2)(a) through (c):

(A) Sulfur dioxide emissions must not exceed 1.20 lb/mmBtu, as a 3-hour rolling average;

(B) Nitrogen oxide emissions must not exceed 0.70 lb/mmBtu, as a 3-hour rolling average; and

(C) Particulate matter emissions must be minimized to extent practicable pursuant to approved startup and shutdown procedures in accordance with OAR 340-214-0310.

(3) Compliance demonstration. Using the procedures specified in section (4) of this rule:

(a) Compliance with a 30-day rolling average limit must be demonstrated within 180 days of the compliance date specified in section (2) of this rule.

(b) Compliance with a 12-month rolling average must be demonstrated within 12 months of the compliance date specified in section (2) of this rule.

(4) Compliance Monitoring and Testing.

(a) Compliance with the emissions limits in (2)(a), (b) and (d)(A)-(B) must be determined with a continuous emissions monitoring system (CEMS) installed, operated, calibrated, and maintained in accordance with the acid rain monitoring requirements in 40 CFR Part 75 as in effect on December 9, 2010.

(A) The hourly emissions rate in terms of lb/mmBtu heat input must be recorded each operating hour, including periods of startup and shutdown.

(B) The daily average emissions rate must be determined for each boiler operating day using the hourly emissions rates recorded in (A), excluding periods of startup and shutdown.

(C) 30-day rolling averages must be determined using all daily average emissions rates recorded in (B) whether or not the days are consecutive.

(D) 12-month rolling averages must be determined using calendar month averages based on all daily averages during the calendar month.

(b) Compliance with the particulate matter emissions limit in (2)(c) must be determined by EPA Methods 5 and 19 as in effect on December 9, 2010.

(A) An initial test must be conducted by January 1, 2015.

(B) Subsequent tests must be conducted in accordance with a schedule specified in the Oregon Title V Operating Permit, but not less than once every 5 years.

(C) All testing must be performed in accordance with the Department's Source Sampling Manual as in effect on December 9, 2010.

(7) Notifications and Reports.

(a) The Department must be notified in writing within 7 days after any control equipment (including combustion controls) used to comply with emissions limits in section (2) begin operation.

(b) For nitrogen oxide and sulfur dioxide limits based on a 30-day rolling average, a compliance status report, including CEMS data, must be submitted within 180 days of the compliance dates specified in section (2).

(c) If applicable, a compliance status report for the 12-month rolling average nitrogen oxide limit in section (2)(a) must be submitted by August 1, 2012.

(d) For particulate matter, a compliance status report, including a source test report, must be submitted within 60 days of completing the initial compliance test specified in section (4)(b).

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A  
Stats. Implemented: ORS 468A.025

**340-223-0070**

**Additional NO<sub>x</sub> Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106) Based Upon Operation Until 2040 or Beyond**

- (1) Subject to OAR 340-223-0050, the owner or operator of the Foster-Wheeler boiler at the Boardman coal-fired power plant may elect to comply with this rule and 340-223-0060 in lieu of compliance with OAR 340-223-0030.
- (2) On and after July 1, 2017, nitrogen oxide emissions must not exceed 0.070 lb/mmBtu heat input as a 30-day rolling average, excluding periods of startup and shutdown.
- (3) Compliance with the nitrogen oxide emissions limit in section (2) must be determined with a continuous emissions monitoring system in accordance with OAR 340-223-0060(3)-(4).
- (4) The Department must be notified in writing within 7 days after any control equipment used to comply with the emissions limit in section (2) begins operation.
- (5) A compliance status report, including CEMS data, must be submitted by January 1, 2018.

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A  
Stats. Implemented: ORS 468A.025

**340-223-0080**

**Alternative Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106) Based Upon Permanently Ceasing the Burning of Coal Within Five Years of EPA Approval of the Revision to the Oregon Clean Air Act State Implementation Plan Incorporating OAR Chapter 340, Division 223.**

- (1) Subject to OAR 340-223-0050, the owner or operator of the Foster-Wheeler boiler at the Boardman coal-fired power plant may elect to comply with this rule in lieu of compliance with OAR 340-223-0030 if the boiler permanently ceases to burn coal within five years of the approval by the United States Environmental Protection Agency (EPA) of the revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR chapter 340, division 223.
- (2) Emissions limits:

(a) Beginning July 1, 2011, nitrogen oxide emissions must not exceed 0.23 lb/mmBtu heat input as a 30-day rolling average, provided that:

(A) If the source submitted a complete application for construction and/or operation of pollution control equipment to satisfy the emissions limit in subsection (2)(a) at least eight months prior to the compliance date of July 1, 2011, and the Department has not approved or denied the application by the compliance date, the compliance date is extended until the Department approves or disapproves the application, but may not be extended to a date more than five years from the date that the EPA approves a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR 340-223-0030; and

(B) If it is demonstrated by December 31, 2011 that the emissions limit in subsection (2)(a) cannot be achieved with combustion controls, the Department by order may grant an extension of compliance to July 1, 2013.

(b) During periods of startup and shutdown, the emissions limit in subsection (2)(a) does not apply, and nitrogen oxide emissions must not exceed 0.70 lb/mmBtu, as a 3-hour rolling average.

(c) The Foster-Wheeler boiler at the source must permanently cease burning coal by no later than five years after the approval by the EPA of the revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR chapter 340, division 223. Notwithstanding the definition of netting basis in OAR 340-200-0020, and the process for reducing plant site emission limits in OAR 340-222-0043, the netting basis and PSELS for the boiler are reduced to zero upon the date on which the boiler permanently ceases burning coal, and prior to that date the netting basis and PSELS for the boiler apply only to physical changes or changes in the method of operation of the source for the purpose of complying with emission limits applicable to the boiler.

(3) Compliance demonstration. Using the procedures specified in section (4) of this rule, compliance with a 30-day rolling average limit must be demonstrated within 180 days of the compliance date specified in section (2) of this rule.

(4) Compliance Monitoring and Testing. Compliance with the emissions limit in subsection (2)(a) must be determined with a continuous emissions monitoring system (CEMS) installed, operated, calibrated, and maintained in accordance with the acid rain monitoring requirements in 40 CFR Part 75 as in effect on December 9, 2010.

(a) The hourly emission rate in terms of lb/mmBtu heat input must be recorded each operating hour, including periods of startup and shutdown.

(b) The daily average emission rate must be determined for each boiler operating day using the hourly emission rates recorded in (a), excluding periods of startup and shutdown.

(c) 30-day rolling averages must be determined using all daily average emissions rates recorded in (b) whether or not the days are consecutive.

(d) The daily average emission rate is calculated for any calendar day in which the boiler combusts any fuel. An operating hour means a clock hour during which the boiler combusts any fuel, either for part of the hour or for the entire hour.

(5) Notifications and Reports



(a) The Department must be notified in writing within 7 days after any control equipment (including combustion controls) used to comply with emissions limit in subsection (2)(a) begin operation.

(b) A compliance status report, including CEMS data, must be submitted within 180 days of the compliance date specified in section (2).

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

### **Attachment 3.3**

Placeholder – See attached binder for

Oregon Regional Haze Plan for Implementing Section 308 (40 CFR 51.308) of the  
Regional Haze Rule. Effective December 9, 2010

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### DIVISION 200 GENERAL AIR POLLUTION PROCEDURES AND DEFINITIONS

**340-200-0040**

#### **State of Oregon Clean Air Act Implementation Plan**

(1) This implementation plan, consisting of Volumes 2 and 3 of the State of Oregon Air Quality Control Program, contains control strategies, rules and standards prepared by the Department of Environmental Quality and is adopted as the state implementation plan (SIP) of the State of Oregon pursuant to the federal **Clean Air Act, 42 U.S.C.A 7401 to 7671q**.

(2) Except as provided in section (3), revisions to the SIP will be made pursuant to the Commission's rulemaking procedures in division 11 of this chapter and any other requirements contained in the SIP and will be submitted to the United States Environmental Protection Agency for approval. The State Implementation Plan was last modified by the Commission on [December 9, 2010](#).

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(3) Notwithstanding any other requirement contained in the SIP, the Department may:

(a) Submit to the Environmental Protection Agency any permit condition implementing a rule that is part of the federally-approved SIP as a source-specific SIP revision after the Department has complied with the public hearings provisions of 40 CFR 51.102 (July 1, 2002); and

(b) Approve the standards submitted by a regional authority if the regional authority adopts verbatim any standard that the Commission has adopted, and submit the standards to EPA for approval as a SIP revision.

**NOTE:** Revisions to the State of Oregon Clean Air Act Implementation Plan become federally enforceable upon approval by the United States Environmental Protection Agency. If any provision of the federally approved Implementation Plan conflicts with any provision adopted by the Commission, the Department shall enforce the more stringent provision.

Stat. Auth.: ORS 468.020

Stats. Implemented: ORS 468A.035

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### DIVISION 223 REGIONAL HAZE RULES

#### 340-223-0010

##### Purpose

OAR 340-223-0020 through 340-223-~~0080~~ establish requirements for certain sources emitting air pollutants that reduce visibility and contribute to regional haze in Class I areas, for the purpose of implementing Best Available Retrofit Technology (BART) requirements and other requirements associated with the federal Regional Haze Rules in 40 CFR [§ 51.308](#), as in effect on [December 9, 2010](#).

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**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

Hist.: DEQ 3-2009, f. & cert. ef. 6-30-09

#### 340-223-0020

##### Definitions

The definitions in OAR 340-200-0020 and this rule apply to this division. If the same term is defined in this rule and OAR 340-200-0020, the definition in this rule applies to this division.

(1) “BART-eligible source” means any source determined by the Department to meet the criteria for a BART-eligible source established in [Appendix Y to 40 CFR Part 51](#), “Guidelines for BART Determinations Under the Regional Haze Rule”, and in accordance with the [federal Regional Haze Rules](#) under 40 CFR [§ 51.308\(e\)](#), as in effect on [December 9, 2010](#).

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(2) “Best Available Retrofit Technology (BART)” means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant that is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source or unit, the remaining useful life of the source or unit, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

(3) "Deciview" means a measurement of visibility impairment. A deciview is a haze index derived from calculated light extinction, such that uniform changes in haziness correspond to uniform incremental changes in perception across the entire range of conditions, from pristine to highly impaired. The deciview haze index is calculated based on the following equation (for the purposes of calculating deciview, the atmospheric light extinction coefficient must be calculated from aerosol measurements):

Deciview haze index= $10\ln(b_{ext}/10 \text{ Mm}^{-1})$

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Where  $b_{ext}$ = the atmospheric light extinction coefficient, expressed in inverse megameters (Mm-1).

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(4) "Dry sorbent injection pollution control system" means a pollution control system that reduces sulfur dioxide emissions by combining a dry alkaline reagent directly with the boiler exhaust gas stream to enable the reagent to adsorb sulfur dioxide and be collected by the existing electrostatic precipitator.

(5) "Subject to BART" means a BART-eligible source that based on air quality dispersion modeling causes visibility impairment equal to or greater than 0.5 deciview in any Class I area, at the 98th percentile for both a three-year period and one-year period.

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(6) "Ultra-low sulfur coal" means coal that contains no more than 0.25 lb sulfur/mmBtu heat input on average.

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

Hist.: DEQ 3-2009, f. & cert. ef. 6-30-09

**340-223-0030**

**BART and Additional Regional Haze Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106)**

(1) Emissions limits:

(a) Between July 1, 2011 and December 31, 2020, nitrogen oxide emissions must not exceed 0.23 lb/mmBtu heat input as a 30-day rolling average, provided that:

(A) If the source submitted a complete application for construction and/or operation of pollution control equipment to satisfy the emissions limit in subsection (1)(a) at least eight months prior to the compliance date of July 1, 2011, and the Department has not approved or denied the application by the compliance date, the compliance date is extended until the Department approves or disapproves the application, but may not be extended to a date more than five years from the date that the United States Environmental Protection Agency approves a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR 340-223-0030; and

(B) If it is demonstrated by December 31, 2011 that the emissions limit in subsection (1)(a) cannot be achieved with combustion controls, the Department by order may grant an extension of compliance to July 1, 2013.

(b) Except as provided in section (3) below:

(A) Between July 1, 2014 and June 30, 2018, sulfur dioxide emissions must not exceed 0.40 lb/mmBtu heat input as a 30-day rolling average; and

(B) Between July 1, 2018 and December 31, 2020, sulfur dioxide emissions must not exceed 0.30 lb/mmBtu heat input as a 30-day rolling average.

(c) Between July 1, 2014 and December 31, 2020, particulate matter emissions must not exceed 0.040 lb/mmBtu heat input as determined by compliance source testing.

(d) During periods of startup and shutdown, the following emissions limits apply instead of the limits in subsections (a) through (c):

(A) Sulfur dioxide emissions must not exceed 1.20 lb/mmBtu, as a 3-hour rolling average;

(B) Nitrogen oxide emissions must not exceed 0.70 lb/mmBtu, as a 3-hour rolling average; and

(C) Particulate matter emissions must be minimized to extent practicable pursuant to approved startup and shutdown procedures in accordance with OAR 340-214-0310.

(e) The Foster-Wheeler boiler at the source must permanently cease burning coal by no later than December 31, 2020. Notwithstanding the definition of netting basis in OAR 340-200-0020, and the process for reducing plant site emission limits in OAR 340-222-0043, the netting basis and PSELS for the boiler are reduced to zero upon the date on which the boiler permanently ceases burning coal, and prior to that date the netting basis and PSELS for the boiler apply only to physical changes or changes in the method of operation of the source for the purpose of complying with emission limits applicable to the boiler.

(2) Studies to evaluate compliance with the sulfur dioxide emissions limits in paragraphs (1)(b)(A)-(B), and the potential side effects of compliance with those limits, if required by section (3), must be completed as follows:

(a) A plan to evaluate the sulfur dioxide emissions limit in paragraph (1)(b)(A) must be submitted for Department approval by July 1, 2011, and the results of the evaluation must be submitted to the Department by July 1, 2013;

(b) A plan to evaluate the sulfur dioxide emissions limit in paragraph (1)(b)(B) must be submitted for Department approval by July 1, 2015, and the results of the evaluation must be submitted to the Department by July 1, 2017; and

(c) Each study pursuant to this section (2) must:

(A) Evaluate whether a dry sorbent injection pollution control system is technically infeasible, will prevent compliance with mercury emissions limits under OAR 340-228-0606, or cause a significant air quality impact (as that term is defined in OAR 340-200-0020) for PM<sub>10</sub> or PM<sub>2.5</sub>;

(B) Evaluate a range of commercially available sorbent materials that could be used in a dry sorbent injection pollution control system to reduce sulfur dioxide emissions;

(C) Evaluate the potential for significant air quality impacts for PM<sub>10</sub> or PM<sub>2.5</sub> as follows:

(i) Perform modeling consistent with the requirements of OAR 340-225-0050(1) with screening meteorological data containing conservative meteorological assumptions; or

(ii) If modeling with screening meteorological data pursuant to subparagraph (i) demonstrates that significant air quality impacts for PM<sub>10</sub> or PM<sub>2.5</sub> will occur, perform modeling with site specific meteorological data obtained from the installation of a meteorological monitoring station, including one year of monitoring data for each study. The meteorological monitoring station must be installed, certified, operated and maintained, and the output of the meteorological monitoring station must be recorded, in accordance with a plan approved by the Department;

(D) Evaluate the use of other sulfur dioxide pollution control systems of equal or lower cost as a dry sorbent injection pollution control system, including but not limited to the use of ultra-low sulfur coal, if the study demonstrates that the use of a dry sorbent injection pollution control system is technically infeasible, will prevent compliance with mercury emissions limits under OAR 340-228-0606, or will cause a significant air quality impact (as that term is defined in OAR 340-200-0020) for PM<sub>10</sub> or PM<sub>2.5</sub>; and

(E) If applicable, propose an emissions limit for sulfur dioxide based on a 30-day rolling average that exceeds the limits listed in paragraphs (1)(b)(A)-(B), based upon the reduction of sulfur dioxide emissions to the maximum extent feasible through the use of a dry sorbent injection pollution control system or another sulfur dioxide pollution control system of equal or lower cost, including but not limited to the use of ultra-low sulfur coal, provided that the emissions limit may not exceed 0.55 lb/mmBtu heat input as a 30-day rolling average.

(3) Between July 1, 2014 and December 31, 2020, sulfur dioxide emissions may exceed the limit listed in paragraph (1)(b)(A) or (B), or both, if:

(a) Studies have been submitted pursuant to section (2);

(b) Compliance with the applicable emissions limit or limits would:

(A) Be technically infeasible;

(B) Prevent compliance with mercury emissions limits under OAR 340-228-0606; or

(C) Cause a significant air quality impact, as that term is defined in OAR 340-200-0020, for PM<sub>10</sub> or PM<sub>2.5</sub>;

(c) Sulfur dioxide emissions are otherwise reduced to the maximum extent feasible as described in subsection (2)(c); and

(d) The source's Oregon Title V Operating Permit is modified to include a federally enforceable permit limit reflecting the requirements of subsection (2)(c), prior to the compliance date for the sulfur dioxide emissions limit in paragraph (1)(b)(A) or (B) that will be exceeded; provided that if the source's Oregon Title V Operating Permit has not been modified prior to the applicable compliance date, sulfur dioxide emissions may exceed the emissions limit in paragraph (1)(b)(A) or (B) if the source submitted a complete application to modify its Oregon Title V Operating Permit at least eight months prior to the

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applicable compliance date and sulfur dioxide emissions do not exceed the emissions limit proposed in its application (which may not exceed 0.55 lb/mmBtu heat input as a 30-day rolling average).

(4) Compliance demonstration. Using the procedures specified in section (5) of this rule:

(a) Compliance with a 30-day rolling average limit must be demonstrated within 180 days of the compliance date specified in section (1) of this rule; and

(b) Compliance with any 30-day rolling average limit for sulfur dioxide that may be established pursuant to subsection (3)(c) must be demonstrated within 180 days of the compliance date for the limit in paragraph (1)(b)(A) or (B) that is superseded by the emissions limit established pursuant to subsection (3)(c).

(5) Compliance Monitoring and Testing.

(a) Compliance with the emissions limits in subsections (1)(a), (b) and (d)(A)-(B), and with any emissions limit for sulfur dioxide that may be established pursuant to subsection (3)(c), must be determined with a continuous emissions monitoring system (CEMS) installed, operated, calibrated, and maintained in accordance with the acid rain monitoring requirements in 40 CFR Part 75 as in effect on December 9, 2010.

(A) The hourly emissions rate in terms of lb/mmBtu heat input must be recorded each operating hour, including periods of startup and shutdown.

(B) The daily average emissions rate must be determined for each boiler operating day using the hourly emissions rates recorded in (A), excluding periods of startup and shutdown.

(C) 30-day rolling averages must be determined using all daily average emissions rates recorded in (B) whether or not the days are consecutive.

(D) The daily average emission rate is calculated for any calendar day in which the boiler combusts any fuel. An operating hour means a clock hour during which the boiler combusts any fuel, either for part of the hour or for the entire hour.

(b) Compliance with the particulate matter emissions limit in subsection (1)(c) must be determined by EPA Methods 5 and 19 as in effect on December 9, 2010.

(A) An initial particulate matter source test must be conducted by January 1, 2015.

(B) Subsequent tests must be conducted in accordance with a schedule specified in the source's Oregon Title V Operating Permit, but not less than once every 5 years.

(C) All testing must be performed in accordance with the Department's Source Sampling Manual as in effect on December 9, 2010.

(6) Notifications and Reports.



(a) The Department must be notified in writing within 7 days after any control equipment (including combustion controls) used to comply with emissions limits in section (1), and with any emissions limit for sulfur dioxide that may be established pursuant to subsection (3)(c), begins operation.

(b) For nitrogen oxide and sulfur dioxide emissions limits in section (1) based on a 30-day rolling average, a compliance status report, including CEMS data, must be submitted within 180 days of the compliance dates specified in section (1).

(c) For any sulfur dioxide emissions limit that may be established pursuant to subsection (3)(c), a compliance status report, including CEMS data, must be submitted within 180 days of the compliance date for the limit in paragraph (1)(b)(A) or (B) that is superseded by the emissions limit established pursuant to subsection (3)(c).

(d) For particulate matter, a compliance status report, including a source test report, must be submitted within 60 days of completing the initial compliance test and all subsequent tests as specified in subsection (5)(b).

(e) The Department must be notified in writing within 7 days of the date upon which the boiler permanently ceases burning coal.

(7) The following provisions of this rule constitute BART requirements for the Foster-Wheeler Boiler: subsection (1)(a), paragraph (1)(b)(A), subsections (1)(c)-(e), (2)(a) and (2)(c), and sections (3)-(6).

(8) The following provisions of this rule constitute additional requirements pursuant to the federal Regional Haze Rules under 40 CFR § 51.308(e) for the Foster-Wheeler Boiler: paragraph (1)(b)(B), subsections (2)(b) and (2)(c), and sections (3)-(6).

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A  
Stats. Implemented: ORS 468A.025  
Hist.: DEQ 3-2009, f. & cert. ef. 6-30-09

**340-223-0040**

**Federally Enforceable Permit Limits**

(1) A BART-eligible source that would be subject to BART may accept a federally enforceable permit limit or limits that reduces the source's emissions and prevents the source from being subject to BART.

(2) Any BART-eligible source that accepts a federally enforceable permit limit or limits as described in section (1) to prevent the source from being subject to BART, and that subsequently proposes to terminate its federally enforceable permit limit or limits, and that as a result will increase its emissions and become subject to BART, must submit a BART analysis to the Department and install BART as determined by the Department prior to terminating the federally enforceable permit limit or limits.

(3) The Foster-Wheeler boiler at The Amalgamated Sugar Company plant in Nyssa, Oregon (Title V permit number 23-0002) is a BART-eligible source, and air quality dispersion modeling demonstrates that

**Deleted:** (1) Emissions limits: ¶  
(a) On and after July 1, 2011, nitrogen oxides emissions must not exceed 0.28 lb/mmBtu heat input as a 30-day rolling average and 0.23 lb/mmBtu heat input as a 12-month rolling average. ¶  
(A) If it is demonstrated by July 1, 2012 that the emission limits in (a) cannot be achieved with combustion controls, the Department may grant an extension of compliance to July 1, 2014. ¶  
(B) If an extension is granted, the nitrogen oxides emissions must not exceed 0.23 lb/mm Btu heat input as a 30-day rolling average on and after July 1, 2014. ¶  
(b) On and after July 1, 2014, sulfur dioxide emissions must not exceed 0.12 lb/mmBtu heat input as a 30-day rolling average. ¶  
(c) On and after July 1, 2014, particulate matter emissions must not exceed 0.012 lb/mmBtu heat input as determined by compliance source testing. ¶  
(d) The emission limits in (a) through (c) above do not apply during periods of startup or shutdown. ¶  
(2) Compliance demonstration. Using the procedures specified in section (3) of this rule: ¶  
(a) Compliance with a 30-day rolling average limit must be demonstrated within 180 days of the compliance date specified in section (1) of this rule. ¶  
(b) Compliance with a 12-month rolling average must be demonstrated within 12 months of the compliance date specified in section (1) of this rule. ¶  
(3) Compliance Monitoring and Testing ¶  
(a) Compliance with the emissions limits in (1)(a) and (b) must be determined with a continuous emissions monitoring system (CEMS) installed, operated, calibrated, and maintained in accordance with the acid rain monitoring requirements in 40 CFR Part 75 as in effect on June 19, 2009. ¶  
(A) The hourly emission rate in terms of lb/mmBtu heat input must be recorded each operating hour, including periods of startup and shutdown. ¶

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**Additional NOx Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106) ¶**  
On and after July 1, 2017, nitrogen oxides emissions must not exceed 0.070 lb/mmBtu heat input, excluding periods of startup and shutdown. ¶  
(1) Compliance with the NOx emissions limit must be determined with a continuous emissions monitoring system in accordance with OAR 340-223-0030(2) and (3). ¶  
(2) The Department must be notified in writing within 7 days after any control equipment used to comply with the emission limit begins operation. ¶

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**Deleted:** (1) Any BART-eligible source that causes visibility impairment less than 0.5 deciview in all Class I areas, at the 98th percentile for both a three-year period and one-year period, based on a federally enforceable permit limit or limits, is not subject to BART. ¶  
(2) If a BART-eligible source's federally enforceable permit limit will be terminated, and as a result the source will be subject to BART, the source is required to submit a BART analysis and install BART as determined by the Department prior to terminating the federally enforceable permit limit.

it would be subject to BART while operating. However, it is not operating as of [December 9, 2010](#), and therefore is not subject to BART. Prior to resuming operation, the owner or operator of the source must either:

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(a) Submit a BART analysis and install BART as determined by the Department by no later than [five years from the date that the United States Environmental Protection Agency approves a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR chapter 340, division 223](#), or before resuming operation, whichever is later; or

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(b) Obtain and comply with a federally enforceable permit limit [or limits](#) assuring that the source's emissions will not cause the source to be subject to BART.

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

Hist.: DEQ 3-2009, f. & cert. ef. 6-30-09

#### [340-223-0050](#)

##### [Alternative Regional Haze Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant \(Federal Acid Rain Program Facility ORISPL Code 6106\)](#)

[\(1\) The owner and operator of the Foster-Wheeler boiler at the Boardman coal-fired power plant may elect to comply with OAR 340-223-0060 and 340-223-0070, or with OAR 340-223-0080, in lieu of complying with OAR 340-223-0030, if the owner or operator provides written notification to the Director by no later than July 1, 2014. The written notification must identify which rule of the two alternatives the owner or operator has chosen to comply with. The owner or operator may not change its chosen method of compliance after July 1, 2014.](#)

[\(2\) Compliance with OAR 340-223-0080 in lieu of complying with OAR 340-223-0030 is allowed only if the Foster-Wheeler boiler at the Boardman coal-fired power plant permanently ceases to burn coal within five years of the approval by the United States Environmental Protection Agency \(EPA\) of the revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR chapter 340, division 223. If the boiler has not permanently ceased burning coal by that date, the owner and operator shall be liable for violating OAR 340-223-0030 for each day beginning July 1, 2014 on which the owner or operator did not comply with OAR 340-223-0030. This liability shall include, but is not limited to, civil penalties pursuant to OAR chapter 340, division 12, which includes penalties for the economic benefit of operating the facility without the required pollution controls.](#)

[\(3\) If, by December 31, 2011, the EPA fails to approve a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR 340-223-0030 \(concerning BART requirements based upon permanently ceasing the burning of coal in the Foster-Wheeler Boiler by December 31, 2020\), or OAR 340-223-0060 and 340-223-0070, then the compliance date of July 1, 2014 in OAR 340-223-0060\(2\)\(b\) and \(c\) \(sulfur dioxide and particulate matter emissions limits\) is delayed until three years from the date of EPA approval.](#)

[\(4\) Notwithstanding sections \(1\) and \(3\), if the EPA approves a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR 340-223-0030 \(concerning BART requirements based](#)

upon permanently ceasing the burning of coal in the Foster-Wheeler Boiler by December 31, 2020), then OAR 340-223-0060 and 340-223-0070 are repealed, compliance with OAR 340-223-0060 and 340-223-0070 in lieu of complying with OAR 340-223-0030 is no longer an alternative, and compliance with OAR 340-223-0030 or OAR 340-223-0080 is required.

### **340-223-0060**

#### **Alternative BART Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106) Based Upon Operation Until 2040 or Beyond**

(1) Subject to OAR 340-223-0050, the owner or operator of the Foster-Wheeler boiler at the Boardman coal-fired power plant may elect to comply with this rule and 340-223-0070 in lieu of compliance with OAR 340-223-0030.

(2) Emissions limits:

(a) On and after July 1, 2011, nitrogen oxide emissions must not exceed 0.28 lb/mmBtu heat input as a 30-day rolling average and 0.23 lb/mmBtu heat input as a 12-month rolling average.

(A) If it is demonstrated by July 1, 2012 that the emissions limits in (a) cannot be achieved with combustion controls, the Department may grant an extension of compliance to July 1, 2014.

(B) If an extension is granted, on and after July 1, 2014 the nitrogen oxide emissions must not exceed 0.19 lb/mm Btu heat input as a 30-day rolling average, and the emissions limits of 0.28 lb/mmBtu heat input as a 30-day rolling average and 0.23 lb/mmBtu heat input as a 12-month rolling average no longer apply.

(b) On and after July 1, 2014, sulfur dioxide emissions must not exceed 0.12 lb/mmBtu heat input as a 30-day rolling average.

(c) On and after July 1, 2014, particulate matter emissions must not exceed 0.012 lb/mmBtu heat input as determined by compliance source testing.

(d) During periods of startup and shutdown, the following emissions limits apply instead of the limits in subsections (2)(a) through (c):

(A) Sulfur dioxide emissions must not exceed 1.20 lb/mmBtu, as a 3-hour rolling average;

(B) Nitrogen oxide emissions must not exceed 0.70 lb/mmBtu, as a 3-hour rolling average; and

(C) Particulate matter emissions must be minimized to extent practicable pursuant to approved startup and shutdown procedures in accordance with OAR 340-214-0310.

(3) Compliance demonstration. Using the procedures specified in section (4) of this rule:

(a) Compliance with a 30-day rolling average limit must be demonstrated within 180 days of the compliance date specified in section (2) of this rule.

(b) Compliance with a 12-month rolling average must be demonstrated within 12 months of the compliance date specified in section (2) of this rule.

(4) Compliance Monitoring and Testing.

(a) Compliance with the emissions limits in (2)(a), (b) and (d)(A)-(B) must be determined with a continuous emissions monitoring system (CEMS) installed, operated, calibrated, and maintained in accordance with the acid rain monitoring requirements in 40 CFR Part 75 as in effect on December 9, 2010.

(A) The hourly emissions rate in terms of lb/mmBtu heat input must be recorded each operating hour, including periods of startup and shutdown.

(B) The daily average emissions rate must be determined for each boiler operating day using the hourly emissions rates recorded in (A), excluding periods of startup and shutdown.

(C) 30-day rolling averages must be determined using all daily average emissions rates recorded in (B) whether or not the days are consecutive.

(D) 12-month rolling averages must be determined using calendar month averages based on all daily averages during the calendar month.

(b) Compliance with the particulate matter emissions limit in (2)(c) must be determined by EPA Methods 5 and 19 as in effect on December 9, 2010.

(A) An initial test must be conducted by January 1, 2015.

(B) Subsequent tests must be conducted in accordance with a schedule specified in the Oregon Title V Operating Permit, but not less than once every 5 years.

(C) All testing must be performed in accordance with the Department's Source Sampling Manual as in effect on December 9, 2010.

(7) Notifications and Reports.

(a) The Department must be notified in writing within 7 days after any control equipment (including combustion controls) used to comply with emissions limits in section (2) begin operation.

(b) For nitrogen oxide and sulfur dioxide limits based on a 30-day rolling average, a compliance status report, including CEMS data, must be submitted within 180 days of the compliance dates specified in section (2).

(c) If applicable, a compliance status report for the 12-month rolling average nitrogen oxide limit in section (2)(a) must be submitted by August 1, 2012.

(d) For particulate matter, a compliance status report, including a source test report, must be submitted within 60 days of completing the initial compliance test specified in section (4)(b).

NOTE: This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

**340-223-0070**

**Additional NOx Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106) Based Upon Operation Until 2040 or Beyond**

(1) Subject to OAR 340-223-0050, the owner or operator of the Foster-Wheeler boiler at the Boardman coal-fired power plant may elect to comply with this rule and 340-223-0060 in lieu of compliance with OAR 340-223-0030.

(2) On and after July 1, 2017, nitrogen oxide emissions must not exceed 0.070 lb/mmBtu heat input as a 30-day rolling average, excluding periods of startup and shutdown.

(3) Compliance with the nitrogen oxide emissions limit in section (2) must be determined with a continuous emissions monitoring system in accordance with OAR 340-223-0060(3)-(4).

(4) The Department must be notified in writing within 7 days after any control equipment used to comply with the emissions limit in section (2) begins operation.

(5) A compliance status report, including CEMS data, must be submitted by January 1, 2018.

NOTE: This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

**340-223-0080**

**Alternative Requirements for the Foster-Wheeler Boiler at the Boardman Coal-Fired Power Plant (Federal Acid Rain Program Facility ORISPL Code 6106) Based Upon Permanently Ceasing the Burning of Coal Within Five Years of EPA Approval of the Revision to the Oregon Clean Air Act State Implementation Plan Incorporating OAR Chapter 340, Division 223.**

(1) Subject to OAR 340-223-0050, the owner or operator of the Foster-Wheeler boiler at the Boardman coal-fired power plant may elect to comply with this rule in lieu of compliance with OAR 340-223-0030 if the boiler permanently ceases to burn coal within five years of the approval by the United States Environmental Protection Agency (EPA) of the revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR chapter 340, division 223.

(2) Emissions limits:

(a) Beginning July 1, 2011, nitrogen oxide emissions must not exceed 0.23 lb/mmBtu heat input as a 30-day rolling average, provided that:

(A) If the source submitted a complete application for construction and/or operation of pollution control equipment to satisfy the emissions limit in subsection (2)(a) at least eight months prior to the compliance date of July 1, 2011, and the Department has not approved or denied the application by the compliance date, the compliance date is extended until the Department approves or disapproves the application, but may not be extended to a date more than five years from the date that the EPA approves a revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR 340-223-0030; and

(B) If it is demonstrated by December 31, 2011 that the emissions limit in subsection (2)(a) cannot be achieved with combustion controls, the Department by order may grant an extension of compliance to July 1, 2013.

(b) During periods of startup and shutdown, the emissions limit in subsection (2)(a) does not apply, and nitrogen oxide emissions must not exceed 0.70 lb/mmBtu, as a 3-hour rolling average.

(c) The Foster-Wheeler boiler at the source must permanently cease burning coal by no later than five years after the approval by the EPA of the revision to the State of Oregon Clean Air Act Implementation Plan that incorporates OAR chapter 340, division 223. Notwithstanding the definition of netting basis in OAR 340-200-0020, and the process for reducing plant site emission limits in OAR 340-222-0043, the netting basis and PSELs for the boiler are reduced to zero upon the date on which the boiler permanently ceases burning coal, and prior to that date the netting basis and PSELs for the boiler apply only to physical changes or changes in the method of operation of the source for the purpose of complying with emission limits applicable to the boiler.

(3) Compliance demonstration. Using the procedures specified in section (4) of this rule, compliance with a 30-day rolling average limit must be demonstrated within 180 days of the compliance date specified in section (2) of this rule.

(4) Compliance Monitoring and Testing. Compliance with the emissions limit in subsection (2)(a) must be determined with a continuous emissions monitoring system (CEMS) installed, operated, calibrated, and maintained in accordance with the acid rain monitoring requirements in 40 CFR Part 75 as in effect on December 9, 2010.

(a) The hourly emission rate in terms of lb/mmBtu heat input must be recorded each operating hour, including periods of startup and shutdown.

(b) The daily average emission rate must be determined for each boiler operating day using the hourly emission rates recorded in (a), excluding periods of startup and shutdown.

(c) 30-day rolling averages must be determined using all daily average emissions rates recorded in (b) whether or not the days are consecutive.

(d) The daily average emission rate is calculated for any calendar day in which the boiler combusts any fuel. An operating hour means a clock hour during which the boiler combusts any fuel, either for part of the hour or for the entire hour.

(5) Notifications and Reports

(a) The Department must be notified in writing within 7 days after any control equipment (including combustion controls) used to comply with emissions limit in subsection (2)(a) begin operation.

(b) A compliance status report, including CEMS data, must be submitted within 180 days of the compliance date specified in section (2).

**NOTE:** This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.

Stat. Auth.: ORS 468 & 468A

Stats. Implemented: ORS 468A.025

## **Attachment 4**

### Evidence that the State followed the Administrative Procedures Act

- 4.1 Public notice in the Secretary of State's Oregon Bulletin, September 1, 2010
- 4.2 Certificate and Order for Filing Permanent Administrative Rules, filed and effective December 10, 2010



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# Oregon Bulletin

**September 1, 2010**

## NOTICES OF PROPOSED RULEMAKING AND PROPOSED RULEMAKING HEARINGS

The following agencies provide Notice of Proposed Rulemaking to offer interested parties reasonable opportunity to submit data or views on proposed rulemaking activity. To expedite the rulemaking process, many agencies have set the time and place for a hearing in the notice. Copies of rulemaking materials may be obtained from the Rules Coordinator at the address and telephone number indicated.

Public comment may be submitted in writing directly to an agency or presented orally or in writing at the rulemaking hearing. Written comment must be submitted to an agency by 5:00 p.m. on the Last Day for Comment listed, unless a different time of day is specified. Written and oral comments may be submitted at the appropriate time during a rulemaking hearing as outlined in OAR 137-001-0030.

Agencies providing notice request public comment on whether other options should be considered for achieving a proposed administrative rule's substantive goals while reducing negative economic impact of the rule on business.

In Notices of Proposed Rulemaking where no hearing has been set, a hearing may be requested by 10 or more people or by an association with 10 or more members. Agencies must receive requests for a public rulemaking hearing in writing within 21 days following notice publication in the *Oregon Bulletin* or 28 days from the date notice was sent to people on the agency mailing list, whichever is later. If sufficient hearing requests are received by an agency, notice of the date and time of the rulemaking hearing must be published in the *Oregon Bulletin* at least 14 days before the hearing.

*\*Auxiliary aids for persons with disabilities are available upon advance request. Contact the agency Rules Coordinator listed in the notice information.*

**Rule Caption:** Proposed Revisions to DEQ Regional Haze/BART rules for the PGE Boardman Power Plant.

<b>Date:</b>	<b>Time:</b>	<b>Location:</b>
9-21-10	6 p.m.	Metro Regional Ctr. Council Chambers 600 NE Grand Ave. Portland, OR
9-23-10	6 p.m.	Eugene State Office Bldg., Willamette Conference Rm. 165 East 7th Ave. Eugene, OR
9-28-10	6 p.m.	Hermiston Conference Ctr. 415 S. Hwy. 395 Hermiston, OR
9-29-10	6 p.m.	DEQ Medford Office, Conference Rm.

9-30-10            6 p.m.            221 Stewart Ave., Suite 201  
 Medford, OR  
 Columbia Gorge Community  
 College, 400 E. Scenic Dr.  
 Health Sciences Bldg.,  
 Bldg. 3, Room 3.203  
 The Dalles, OR

**Hearing Officer:** DEQ Staff

**Stat. Auth.:** ORS 468.020 & 468A.310

**Stats. Implemented:** ORS 468A.025

**Proposed Adoptions:** 340-223-0060, 340-223-0070, 340-223-0080, 340-223-0090

**Proposed Amendments:** 340-200-0040, 340-223-0010, 340-223-0020, 340-223-0030, 340-223-0040, 340-223-0050

**Last Date for Comment:** 10-1-10, 5 p.m.

**Summary:** This rulemaking will amend the Oregon Department of Environmental Quality's (DEQ) 2009 regional haze rules adopted for the PGE Boardman coal-fired power plant, as part of a regional haze plan to improve visibility and reduce air pollution in Oregon's Class I wilderness areas and national parks. On June 17, the Environmental Quality Commission voted to deny a petition submitted by Portland General Electric (PGE) to reduce the stringency of these rules, based on a proposal to close the plant by 2020, and directed DEQ to begin rulemaking and examine a wide range of pollution control options, consistent with an early shutdown of the plant.

DEQ is seeking public comment on three early closure options, which each establish regional haze pollution reduction requirements that meet federal Best Available Retrofit Technology (BART) requirements considering the early shutdown dates in each of the three options. If adopted, these options would be added to the current regional haze rules that apply to the Boardman plant. DEQ is proposing to adopt all three options and allow PGE to select the option that matches the closure date the owners select for the plant. To use one of the early closure options, PGE would have to notify DEQ of its intent to do so before July 1, 2014, the date when sulfur dioxide (SO<sub>2</sub>) limits would otherwise go into effect under the current regional haze rules that were adopted in 2009. If PGE selects none of these early closure options, the current regional haze rules adopted in 2009 would apply. Those rules would allow PGE to run the plant indefinitely and do not contain any closure deadline.

DEQ followed EPA guidance for determining BART for each option. DEQ is seeking comment on its evaluation of the BART criteria, including but not limited to:

- The technical feasibility of control options;
- The control effectiveness of each control options; and
- The cost effectiveness of each option.

Additionally, DEQ is seeking comment on its use of \$7,300/ton for reducing emissions as a cost effectiveness threshold. This selected threshold is based on the high end of the range used by other states, based on significant visibility impacts in 14 national parks and wilderness areas (Class I areas) in Oregon and Washington from the PGE Boardman plant.

**The current rules.** The 2009 regional haze rules adopted for the Boardman plant require a 46% reduction of nitrogen oxide (NO<sub>x</sub>) emissions in 2011, an 80 percent reduction of sulfur dioxide (SO<sub>2</sub>) emissions in 2014, and an additional 36 percent reduction of NO<sub>x</sub> emissions in 2017. The estimated cost of the required pollution controls is approximately \$498 million.

**Option 1 - 2020 shutdown.** This option would require the same NO<sub>x</sub> reduction in 2011, the same SO<sub>2</sub> reduction in 2014, but not the additional NO<sub>x</sub> reduction in 2017. Under a 2020 shutdown, the additional pollution controls for NO<sub>x</sub> in 2017 would be replaced by less expensive additional NO<sub>x</sub> controls in 2014. This option has the same 2020 shutdown date as proposed by PGE, but unlike their petition, would still require an 80 percent reduction in SO<sub>2</sub> by 2014. The estimated cost of these pollution controls is approximately \$320 million.

**Option 2 - 2018 shutdown.** This option would require the same NO<sub>x</sub> reduction in 2011, and a 40% reduction in SO<sub>2</sub> emissions in 2014 by installing less expensive SO<sub>2</sub> pollution controls. Like Option 1, the additional pollution controls for NO<sub>x</sub> in 2017 would be replaced by less expensive additional NO<sub>x</sub> controls in 2014. To meet federal BART requirements, this option establishes a shutdown date in 2018. The estimated cost of these pollution controls is approximately \$103 million.

**Option 3 - 2015/2016 shutdown.** This option would require the same NO<sub>x</sub> reduction in 2011, and no other pollution controls after this date. The shutdown date under this option is based on the requirement to install BART pollution controls within five years of federal approval of a state regional haze plan. Since Oregon's 2009 Regional Haze Plan is expected to be approved by late 2010 or early 2011, this option establishes a shutdown date in five years, or by 2015 or 2016. The estimated cost of these pollution controls is approximately \$36 million.

*Note:* All three options still require the Boardman plant to comply in 2012 with DEQ's current mercury regulations.

DEQ is also seeking comment on an alternative proposed by PGE that would be similar to Option 2, but would allow the plant to operate until 2020. For more information on PGE's proposal, see PGE's July 30, 2010 letter "PGE Comments on DEQ's Proposed Revisions to its Regional Haze Rules" at DEQ's PGE Boardman website or go to

[www.deq.state.or.us/eq/haze/shutdown.htm](http://www.deq.state.or.us/eq/haze/shutdown.htm).

This proposed rulemaking includes amending parts of the 2009 Oregon Regional Haze Plan that pertain to the PGE Boardman plant, and then submitting all rule and plan changes to the Environmental Protection Agency as a revision to the Oregon State Implementation Plan under OAR 340-200-0040.

The proposed rulemaking is different from, or in addition to, applicable federal requirements because it is more specific than the federal requirements. Oregon is required by the federal Clean Air Act to establish BART regional haze pollution controls for the PGE Boardman plant, pursuant to rules and guidelines established by the United States Environmental Protection Agency (EPA). However, while Oregon follows EPA rules and guidelines in establishing BART, the determination of what controls satisfy BART is made by Oregon. Also, applicable federal requirements do not require Oregon to establish multiple options for BART based upon potential early closure dates that PGE may choose, but because PGE has requested early closure options, DEQ is proposing options that are different from and are in addition to the minimum federal requirement to establish BART for the remaining useful life of the facility. Additional information on the relationship of the proposed rules to applicable federal requirements may be found online at DEQ's PGE Boardman website under the Relationship to Federal Requirements document, or go to [www.deq.state.or.us/eq/haze/shutdown.htm](http://www.deq.state.or.us/eq/haze/shutdown.htm).

To request additional information regarding this rulemaking, please contact: Brian Finneran at the Department of Environmental Quality, call toll free in Oregon 800-452-4011 or local (503) 229-6278. You may also visit DEQ's at DEQ's PGE Boardman website at [www.deq.state.or.us/eq/haze/shutdown.htm](http://www.deq.state.or.us/eq/haze/shutdown.htm) or see DEQ's proposed administrative rules webpage at [www.deq.state.or.us/regulations/proposedrules.htm](http://www.deq.state.or.us/regulations/proposedrules.htm)

To comment on this rulemaking, submit your comments to: Brian Finneran, Oregon Department of Environmental Quality, 811 SW Sixth Ave. Portland, Oregon 97204, or by fax to (503) 229-5675, or by email to [NewBART4PGE@deq.state.or.us](mailto:NewBART4PGE@deq.state.or.us) (*if you do not receive an auto response to your emailed comments, contact staff listed above*).

**Rules Coordinator:** Maggie Vandehey

**Address:** Department of Environmental Quality, 811 SW Sixth Ave., Portland, OR 97204-1390

**Telephone:** (503) 229-6878

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Secretary of State  
Certificate and Order for Filing  
**PERMANENT ADMINISTRATIVE RULES**

Attachment 4.2, pg. 1

I certify that the attached copies\* are true, full and correct copies of the PERMANENT Rule(s) adopted on December 9, 2010 by  
the Environmental Quality Commission, to be administered by DEQ  
Agency and Division  
Date prior to or same as filing date  
OAR Chapter 340  
Administrative Rules Chapter Number

Maggie Vandehey                      811 SW Sixth Avenue, Portland, OR 97204-1390                      (503) 229-6878  
Rules Coordinator                      Address                      Telephone

to become effective upon filing. Rulemaking Notice was published in the September 1, 2010 Oregon Bulletin.\*\*  
Date upon filing or later                      Month and Year

**RULE CAPTION**

**Revisions to DEQ Regional Haze BART Rules for the PGE Boardman Power Plant**

**RULEMAKING ACTION**

**ADOPT:** OAR 340-223-0060, 340-223-0070, 340-223-0080

**AMEND:** OAR 340-200-0040, 340-223-0010, 340-223-0020, 340-223-0030, 340-223-0040, 340-223-0050

**REPEAL:**

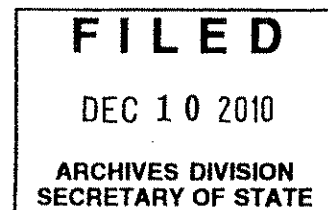
**RENUMBER:**

**AMEND & RENUMBER:**

Stat. Auth.: ORS 468.020 & 468A.310

Other Auth.: N/A

Stats. Implemented: ORS 468A.025



**RULE SUMMARY**

The federal regional haze rule requires states to adopt plans to improve visibility in 156 Class I areas across the country. Plans must address Best Available Retrofit Technology (BART) standards for certain older industrial facilities built before 1977 by evaluating whether they cause significant visibility impacts in wilderness areas and national parks (Class I areas). If they do, the states must require new pollution controls to be installed within five years.

DEQ's current rules, adopted in 2009, included new BART requirements for the PGE Boardman Coal-Fired Power Plant. In April 2010, PGE asked DEQ to adopt less stringent emission limits based on a 2020 closure date. DEQ instead proposed three options with emission limits that would apply if PGE chose to close the plant in 2015, 2018, 2020 or 2040 or later. The comment period for that rule proposal closed on October 1. In late October, PGE proposed a new approach that would require the Boardman facility to meet increasingly stringent emission limits, close no later than Dec. 31 2020 and eliminate existing rules that allow the plant to operate indefinitely. DEQ re-opened the public comment period until November 15, 2010, to take public comments on this proposal.

On December 9, 2010, the Environmental Quality Commission adopted revised BART rules for the PGE Boardman plant which included the stringent emission limits, permanent closure by 2020, and repealing of the 2009 rules, subject to EPA approval.

Maggie Vandehey                      Maggie Vandehey                      Dec 10, 2010  
Authorized Signer                      Printed name                      Date

\*With this original, file one photocopy of certificate, one paper copy of rules listed in Rulemaking Actions, and electronic copy of rules. \*\*The Oregon Bulletin is published the 1st of each month and updates rules found in the OAR Compilation. For publication in Bulletin, rule and notice filings must be submitted by 5:00 pm on the 15th day of the preceding month unless this deadline falls on a weekend or legal holiday, when filings are accepted until 5:00 pm on the preceding workday.                      ARC 930-2005

## **Attachment 5**

### Evidence of Adequate Public Notice

- 5.1 Affidavit of Publication: The Dalles Chronicle, August 20, 2010 publication
- 5.2 Affidavit of Publication: The Daily Journal of Commerce, August 20, 2010 publication
- 5.3 Affidavit of Publication: East Oregonian, August 21, 2010 publication
- 5.4 Affidavit of Publication: Medford Mail Tribune, August 21, 2010 publication
- 5.5 Affidavit of Publication: The Oregonian, August 21, 2010 publication
- 5.6 Affidavit of Publication: The Register-Guard, August 21, 2010 publication

# Affidavit of Publication

STATE OF OREGON, } SS  
County of Wasco

I, Nick DeLeon, being first duly sworn, depose and say that I am the principal clerk of The Dalles Chronicle, a newspaper of general circulation, published in Hood River, Oregon in the aforesaid state and county of Wasco; that I know from my personal knowledge that the **Revision**, a printed copy of which is hereto annexed, was published in the entire issue of said newspaper once in each of one consecutive weeks in the following issues:  
August 20, 2010

Subscribed and sworn to before me this 24th day of August 2010,



Public Hearing on Proposed Revisions to DEQ Regional Haze BART rules for the PGE Boardman Power Plant

The Department of Environmental Quality (DEQ) is proposing that the Environmental Quality Commission adopt revisions to DEQ's 2009 regional haze rules that apply to the Portland General Electric (PGE) Boardman coal-fired power plant, regarding the possible early shutdown of this facility. These rules were adopted to improve visibility and reduce air pollution in Oregon's Class I wilderness areas and national parks. In addition to rule revisions, DEQ is proposing to amend the 2009 Oregon Regional Haze Plan related to the possible early closure of the PGE Boardman plant. These rule and plan revisions will be submitted to the Environmental Protection Agency as a revision to the Oregon State Implementation Plan under OAR 340-200-0040.

DEQ is seeking public comment on three emission reduction options, which meet the federal Regional Haze Rule and Best Available Retrofit Technology (BART) requirements. These options identify different pollution controls and costs associated with different closure dates of the PGE Boardman plant in 2020, 2018, or 2015-16. If adopted, these options would be added to the current 2009 rules that apply to the Boardman plant. DEQ is proposing to adopt all three options

and allow PGE to select the option that matches the closure date the owners select for the plant. If PGE selects none of these options, the current 2009 rules would apply. The 2009 rules would allow PGE to run the plant indefinitely and do not contain any closure deadline. DEQ is also seeking comment on an alternative to these options that has been proposed by PGE.

The Department will hold a public hearing on September 30, 2010, 6:00 p.m., at Columbia Gorge Community College, Health Sciences Building, Building Three, Room 3.203, at 400 E. Scenic Drive, The Dalles, OR.

Copies of the proposed rule documents and PGE's alternative BART proposal can be found on DEQ's regional haze website at [www.deq.state.or.us/aq/haze/shutdown.htm](http://www.deq.state.or.us/aq/haze/shutdown.htm), or on DEQ's public notice website at [www.deq.state.or.us/news/publicnotice/s/PN.asp](http://www.deq.state.or.us/news/publicnotice/s/PN.asp), or by contacting Brian Finneran at (503) 229-6278, toll-free in Oregon at 1-800-452-4011, or at this address: DEQ Air Quality Division, 811 SW Sixth Avenue, Portland, Oregon

97204.

Comments on the proposed rule-making may be submitted starting September 1, 2010, at the address above, by email to [NewBART4PGE@deq.state.or.us](mailto:NewBART4PGE@deq.state.or.us), by fax at (503) 229-5675 (attention Brian Finneran), or at any of the public hearings. All comments must be received no later than 5:00 p.m. on Friday, October 1, 2010.

August 20, 2010  
#4558

541-296-2141  
541-298-1365 Fax  
P.O. Box 1910  
The Dalles, Oregon 97058



BILLING DATE 08/23/10

PAGE 1 OF 1

INVOICE # 39824

**THE DALLES**  
Chronicle

DEPART OF ENVIRONMENT (DEQ )  
ATTN:ACCOUNTS PAYABLE  
811 SW 6TH AVE STE 330  
PORTLAND OR 97204

*Please return top portion with payment.*

DATE	QTY	RATE	TYPE	DESCRIPTION	ZONES	AMOUNT DUE
08/20	P	10.00	I	REVISION #4558	D	\$62.50
INVOICE TOTAL:						\$62.50

ADVERTISING INVOICE  
DUE UPON RECEIPT

# DJC

921 SW Washington, Suite 210 / Portland, OR 97205  
(503)226-1311 FAX (503) 222-5358

Attachment 5.2, pg. 1  
Department of Environmental Quality  
Air Quality Division

AUG 25 2010

## RECEIVED

STATE OF OREGON, COUNTY OF MULTNOMAH, --ss.

I, MARC CAPLAN, being first duly sworn, depose and say that I am a Manager of the DAILY JOURNAL OF COMMERCE, a newspaper of general circulation in the counties of CLACKAMAS, MULTNOMAH and WASHINGTON as defined by ORS 193.010 and 193.020; published at Portland in the aforesaid County and State; that I know from my personal knowledge that the

PUBLIC HEARING  
PROPOSED REVISIONS TO DEQ REGIONAL HAZE BART RULES FOR THE PGE BOARDMAN POWER PLANT

a printed copy of which is attached, was published in the entire issue of this newspaper for 1 time(s) in the following issues:

08/20/2010.



Subscribed and sworn to before me this 20th day of August, 2010.

### Public Hearings on Proposed Revisions to DEQ Regional Haze BART rules for the PGE Boardman Power Plant

The Department of Environmental Quality (DEQ) is proposing that the Environmental Quality Commission adopt revisions to DEQ's 2009 regional haze rules that apply to the Portland General Electric (PGE) Boardman coal-fired power plant, regarding the possible early shutdown of this facility. These rules were adopted to improve visibility and reduce air pollution in Oregon's Class I wilderness areas and national parks. In addition to rule revisions, DEQ is proposing to amend the 2009 Oregon Regional Haze Plan related to the possible early closure of the PGE Boardman plant. These rule and plan revisions will be submitted to the Environmental Protection Agency as a revision to the Oregon State Implementation Plan under OAR 340-200-0040.

DEQ is seeking public comment on three emission reduction options, which meet the federal Regional Haze Rule and Best Available Retrofit Technology (BART) requirements. These options identify different pollution controls and costs associated with different closure dates of the PGE Boardman plant in 2020, 2018, or 2015-16. If adopted, these options would be added to the current 2009 rules that apply to the Boardman plant. DEQ is proposing to adopt all three options and allow PGE to select the option that matches the closure date the owners select for the plant. If PGE selects none of these options, the current 2009 rules would apply. The 2009 rules would allow PGE to run the plant indefinitely and do not contain any closure deadline. DEQ is also seeking comment on an alternative to these options that has been proposed by PGE.

The Department will hold five public hearings at the following locations:

September 21, 2010, 6:00 p.m., in the Council Chambers at Metro Regional Center, 600 NE Grand Avenue, Portland, OR;

September 23, 2010, 6:00 p.m., in the Willamette Conference Room, at the Eugene State Office Building, 165 East 7th Avenue, Eugene, OR;

September 28, 2010, 6:00 p.m., at the Hermiston Conference Center, at 415 S. Hwy 395, Hermiston, OR;



September 29, 2010, 6:00 p.m., in the Conference Room, Suite 201, at the DEQ Medford Office, 221 Stewart Avenue, Medford, OR; and

September 30, 2010, 6:00 p.m., at Columbia Gorge Community College, Health Sciences Building, Building Three, Room 3.203, at 400 E. Scenic Drive, The Dalles, OR.

Copies of the proposed rule documents and PGE's alternative BART proposal can be found on DEQ's regional haze website at [www.deq.state.or.us/eq/haze/shutdown.htm](http://www.deq.state.or.us/eq/haze/shutdown.htm) or on DEQ's public notice website at [www.deq.state.or.us/news/publicnotices/PN.asp](http://www.deq.state.or.us/news/publicnotices/PN.asp) or by contacting Brian Finneran at (503) 229-6278, toll-free in Oregon at 1-800-452-4011, or at this address: DEQ Air Quality Division, 811 SW Sixth Avenue, Portland, Oregon 97204.

Comments on the proposed rulemaking may be submitted starting September 1, 2010, at the address above, by email to [NewBART4PGE@deq.state.or.us](mailto:NewBART4PGE@deq.state.or.us) by fax at (503) 229-5675 (attention Brian Finneran), or at any of the public hearings. All comments must be received no later than 5:00 p.m. on Friday, October 1, 2010.

Published Aug. 20, 2010. PF10165553-1t

OFFICIAL SEAL  
KAREN A HAYS  
NOTARY PUBLIC - OREGON  
COMMISSION NO. 442314  
MY COMMISSION EXPIRES SEPTEMBER 2, 2013

OREGON DEPT. OF ENV. QUALITY  
Attn: BRIAN FINNERAU  
811 SW 6TH AVE.  
Portland, OR 97204

Order No.: 10165553  
Client's Reference No.:



IN THE CIRCUIT COURT OF THE STATE OF OREGON  
FOR UMATILLA COUNTY



AFFIDAVIT OF PUBLICATION

STATE OF OREGON  
County of Umatilla } ss

I, Dayle Stinson being duly sworn, depose and say that I am the principal clerk of the publisher of the East Oregonian, a newspaper of general circulation, as defined by ORS 193.010 and 193.020; printed and published at Pendleton in the aforesaid county and state; that the

EO-4854 PUBLIC HEARING

a printed copy of which is hereto annexed; was published in the entire issue of said newspaper for 1 successive and consecutive issues in the following issues:

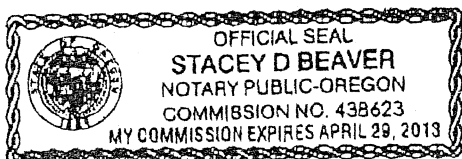
AUGUST 21, 2010

Subscribed and sworn to before me on this, 11 day of

OCTOBER 2010

Dayle Stinson

Stacey D Beaver  
Notary Public of Oregon



EO-4854/HH-4756  
PUBLIC HEARING

on Proposed Revisions to DEQ Regional Haze BART rules for the PGE Boardman Power Plant

The Department of Environmental Quality (DEQ) is proposing that the Environmental Quality Commission adopt revisions to DEQ's 2009 regional haze rules that apply to the Portland General Electric (PGE) Boardman coal-fired power plant, regarding the possible early shutdown of this facility. These rules were adopted to improve visibility and reduce air pollution in Oregon's Class I wilderness areas and national parks. In addition to rule revisions, DEQ is proposing to amend the 2009 Oregon Regional Haze Plan related to the possible early closure of the PGE Boardman plant. These rule and plan revisions will be submitted to the Environmental Protection Agency as a revision to the Oregon State Implementation Plan under OAR 340-200-0040.

DEQ is seeking public comment on three emission reduction options, which meet the federal Regional Haze Rule and Best Available Retrofit Technology (BART) requirements. These options identify different pollution controls and costs associated with different closure dates of the PGE Boardman plant in 2020, 2018, or 2015-16. If adopted, these options would be added to the current 2009 rules that apply to the Boardman plant. DEQ is proposing to adopt all three options and allow PGE to select the option that matches the closure date the owners select for the plant. If PGE selects none of these options, the current 2009 rules would apply. The 2009 rules would allow PGE to run the plant indefinitely and do not contain any closure deadline. DEQ is also seeking comment on an alternative to these options that has been proposed by PGE.

The Department will hold a public hearing on September 28, 2010, 6:00 p.m., at the Hermiston Conference Center, at 415 S Hwy 395, Hermiston, OR.

Copies of the proposed rule documents and PGE's alternative BART proposal can be found on DEQ's regional haze website at [www.deq.state.or.us/aq/haze/shutdown.htm](http://www.deq.state.or.us/aq/haze/shutdown.htm)

or on DEQ's public notice website at [www.deq.state.or.us/news/publicnotices/PN.asp](http://www.deq.state.or.us/news/publicnotices/PN.asp)

or by contacting Brian Finneran at (503) 229-6278, toll-free in Oregon a 1-800-452-4011, or at this address: DEC Air Quality Division, 811 SW Sixth Avenue Portland, Oregon 97204.

Comments on the proposed rulemaking may be submitted starting September 1, 2010, at the address above, by email to [NewBART4PGE@deq.state.or.us](mailto:NewBART4PGE@deq.state.or.us), by fax at (503) 229-5675 (attention Brian Finneran), or at any of the public hearings. All comments must be received no later than 5:00 p.m. on Friday, October 1, 2010. August 21, 2010

### Affidavit of Publication

State of Oregon,                    )  
  )            ss.  
County of Jackson                )

I, Mary K. McEachern, being first duly sworn, depose and say that I am the Principal Clerk of Medford Mail Tribune newspaper of general circulation, printed and published at Medford in the aforesaid county and state; that the

PUBLIC HEARING

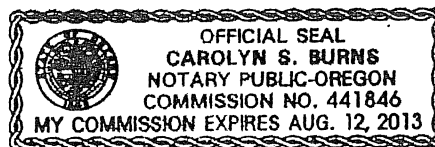
A printed copy of which is hereto annexed, was published in the entire issue of said newspaper for 1 INSERTION in the following issues:  
AUGUST 21, 2010

*Mary K McEachern*

Subscribed and sworn to before me this 30 day of AUGUST, 2010.

*Carolyn S. Burns*

Notary public for Oregon



**Public Hearing on Proposed Revisions to DEQ Regional Haze BART rules  
for the PGE Boardman Power Plant**

The Department of Environmental Quality (DEQ) is proposing that the Environmental Quality Commission adopt revisions to DEQ's 2009 regional haze rules that apply to the Portland General Electric (PGE) Boardman coal-fired power plant, regarding the possible early shutdown of this facility. These rules were adopted to improve visibility and reduce air pollution in Oregon's Class I wilderness areas and national parks. In addition to rule revisions, DEQ is proposing to amend the 2009 Oregon Regional Haze Plan related to the possible early closure of the PGE Boardman plant. These rule and plan revisions will be submitted to the Environmental Protection Agency as a revision to the Oregon State Implementation Plan under OAR 340-200-0040.

DEQ is seeking public comment on three emission reduction options, which meet the federal Regional Haze Rule and Best Available Retrofit Technology (BART) requirements. These options identify different pollution controls and costs associated with different closure dates of the PGE Boardman plant in 2020, 2018, or 2015-16. If adopted, these options would be added to the current 2009 rules that apply to the Boardman plant. DEQ is proposing to adopt all three options and allow PGE to select the option that matches the closure date the owners select for the plant. If PGE selects none of these options, the current 2009 rules would apply. The 2009 rules would allow PGE to run the plant indefinitely and do not contain any closure deadline. DEQ is also seeking comment on an alternative to these options that has been proposed by PGE.

The Department will hold a public hearing September 29, 2010, at 6:00 p.m., in the Conference Room, Suite 201, at the DEQ Medford Office, 221 Stewart Avenue, in Medford.

Copies of the proposed rule documents and PGE's alternative BART proposal can be found on DEQ's regional haze website at [www.deq.state.or.us/aa/haze/shutdown.htm](http://www.deq.state.or.us/aa/haze/shutdown.htm) or on DEQ's public notice website at [www.deq.state.or.us/news/publicnotices/PN.asp](http://www.deq.state.or.us/news/publicnotices/PN.asp) or by contacting Brian Finneran at (503) 229-6278, toll-free in Oregon at 1-800-452-4011, or at this address: DEQ Air Quality Division, 511 SW Sixth Avenue, Portland, Oregon 97204.

Comments on the proposed rulemaking may be submitted starting September 1, 2010, at the address above, by email to [NewBART4PGE@deq.state.or.us](mailto:NewBART4PGE@deq.state.or.us) by fax at (503) 229-5675 (attention Brian Finneran), or at any of the public hearings. All comments must be received no later than 5:00 p.m. on Friday, October 1, 2010.

August 21, 2010

## MAIL TRIBUNE PROOF

Customer: STATE OF OREGON-DEQ      Contact: BRIAN FINNERAN      Phone: 5032295519  
 Ad Number: 645001  
 Notice For:  
 Insertion: Start\_Date - 08/21/2010      End\_Date - 08/21/2010  
 Price: 249.30  
 Section: LE      Class: 0816      Size: 3 x 3.75  
 Printed By: MMTCURTIS      Date: 08/30/2010  
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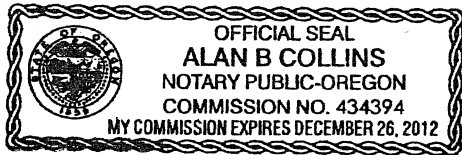
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1320 SW Broadway, Portland, OR 97204-3499

### Affidavit of Publication

I, Terri Hurst duly sworn depose and say that I am the Principal Clerk Of The Publisher of The Oregonian, a newspaper of general circulation, as defined by ORS 193.010 and 193.020, published in the city of Portland, in Multnomah County, Oregon; that the advertisement was published without interruption in the entire and regular issue of The Oregonian or the issue on the following date(s):

8/21/2010



Terri Hurst  
Principal Clerk of the Publisher:  
8/23/10  
Subscribed and sworn to before me this date:  
Alan B. Collins  
Notary:

Ad Order Number: 0003030498

Received  
AUG 24 2010  
DEQ-Accounting

**Oregon Department of Environmental Quality**

**DEQ**

**Public Hearings on Proposed Revisions to DEQ Regional Haze BART rules for the PGE Boardman Power Plant**

The Department of Environmental Quality (DEQ) is proposing that the Environmental Quality Commission adopt revisions to DEQ's 2009 regional haze rules that apply to the Portland General Electric (PGE) Boardman coal-fired power plant, regarding the possible early shutdown of this facility. These rules were developed to improve air quality in Oregon's Cascade and eastern foothill regions. DEQ is proposing to amend the 2009 Oregon Regional Haze Plan related to the possible early closure of the PGE Boardman plant. These rule and plan revisions will be submitted to the Environmental Protection Agency as a revision to the Oregon State Implementation Plan under OAR 340-200-3040.

DEQ is seeking public comment on three emission reduction options, which meet the federal Regional Haze Rule and Best Available Retrofit Technology (BART) requirements. These options identify different pollution controls and costs associated with different closure dates of the PGE Boardman plant in 2021, 2018, or 2017. The rules that apply to the Boardman plant in DEQ's current 2009 rules allow PGE to select the option that matches the closure date the owners select for the plant. If PGE selects none of these options, the current 2009 rules would apply. The 2009 rules would allow PGE to run the plant indefinitely and do not contain any closure deadline. DEQ is also seeking comment on an alternative to these options that has been proposed by PGE.

The Department will hold five public hearings at the following locations:

- September 21, 2010, 6:00 p.m., In the Council Chambers at Metro Regional Center, 601 NE Grand Avenue, Portland, OR;
- September 22, 2010, 6:00 p.m., In the Willamette Conference Room, at the Eugene State Office Building, 165 East 7th Avenue, Eugene, OR;
- September 28, 2010, 6:00 p.m., at the Hermiston Conference Center, at 413 S. Hwy 295, Hermiston, OR;
- September 29, 2010, 6:00 p.m., In the Conference Room, Suite 201, at the DEQ Medford Office, 271 Stewart Avenue, Medford, OR; and
- September 30, 2010, 6:00 p.m., at Columbia George Community College, Health Sciences Building, Third Floor, Room 1.203, at 400 E. Scenic Drive, The Dalles, OR.

Copies of the proposed rule documents and PGE's alternative BART proposal can be found on DEQ's regional haze website at: [www.deq.state.or.us/air/pollution\\_control/bart](http://www.deq.state.or.us/air/pollution_control/bart), or on DEQ's public notice website at: [www.deq.state.or.us/news/publicnotice/PN.asp](http://www.deq.state.or.us/news/publicnotice/PN.asp), or by contacting Brian Finerman at (503) 729-4278, toll-free in Oregon at 1-800-452-4011, or at this address: DEQ Air Quality Division, 811 SW Sixth Avenue, Portland, Oregon 97204.

Comments on the proposed rulemaking may be submitted starting September 1, 2010, at the address above, by email to [NewBART@deq.state.or.us](mailto:NewBART@deq.state.or.us), by fax at (503) 729-5075 (attention Brian Finerman), or at any of the public hearings. All comments must be received no later than 3:00 p.m. on Friday, October 1, 2010.

P.O. BOX 10188 PHONE (541) 485-1234  
EUGENE, OREGON 97440

Legal Notice 4721040

Legal Notice Advertising

Department of Environmental Quality  
Air Quality Division

DEQ AIR QUALITY DIVISION  
ATTN BRIAN FINNERAHN  
811 SW 6TH AVE  
PORTLAND, OR 97204

AUG 25 2010

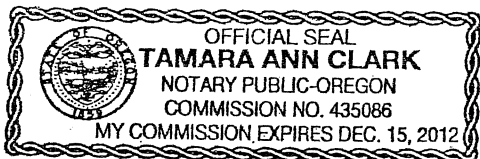
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AFFIDAVIT OF PUBLICATION

STATE OF OREGON, }  
COUNTY OF LANE, } ss.

I, Wendy Raz, being first duly affirmed, depose and say that I am the Advertising Manager, or his principal clerk, of The Register-Guard, a newspaper of general circulation as defined in ORS 193.010 and 193.020; published at Eugene in the aforesaid county and state; that the Notice of Public Meeting/Hearing printed copy of which is hereto annexed, was published in the entire issue of said newspaper for one successive and consecutive Day(s) in the following issues:

August 21, 2010



*Wendy Raz*

Subscribed and affirmed to before me this August 23, 2010

*Tamara Ann Clark*  
Notary Public of Oregon

My commission expires: December 15, 2012

Account #: 1000436

INVOICE 4721040

Case: Proposed Revisions to DEQ Regional Haze BART rules for the PGE Boardman Power

Ad Price: \$175.00

Legal Notices

Public Hearing on Proposed Revisions to DEQ Regional Haze BART rules for the PGE Boardman Power Plant

The Department of Environmental Quality (DEQ) is proposing that the Environmental Quality Commission adopt revisions to DEQ's 2009 regional haze rules that apply to the Portland General Electric (PGE) Boardman coal-fired power plant, regarding the possible early shut-down of this facility. These rules were adopted to improve visibility and reduce air pollution in Oregon's Class I wilderness areas and national parks. In addition to rule revisions, DEQ is proposing to amend the 2009 Oregon Regional Haze Plan related to the possible early closure of the PGE Boardman plant. These rule and plan revisions will be submitted to the Environmental Protection Agency as a revision to the Oregon State Implementation Plan under OAR 340-200-0040.

DEQ is seeking public comment on three emission reduction options, which meet the federal Regional Haze Rule and Best Available Retrofit Technology (BART) requirements. These options identify different pollution controls and costs associated with different closure dates of the PGE Boardman plant in 2020, 2018, or 2015-16. If adopted, these options would be added to the current 2009 rules that apply to the Boardman plant. DEQ is proposing to adopt all three options and allow PGE to select the option that matches the closure date the owners select for the plant. If PGE selects none of these options, the current 2009 rules would apply. The 2009 rules would allow PGE to run the plant indefinitely and do not contain any closure deadline. DEQ is also seeking comment on an alternative to these options that has been proposed by PGE.

The Department will hold a public hearing on September 23, 2010, at 6:00 p.m. in the Willamette Conference Room, at the Eugene State Office Building, 165 East 7th Avenue, in Eugene.

Copies of the proposed rule documents and PGE's alternative BART proposal can be found on DEQ's regional haze website at [www.deq.state.or.us/air/haze/shut-down.htm](http://www.deq.state.or.us/air/haze/shut-down.htm), or on DEQ's public notice website at [www.deq.state.or.us/news/public-notices/PN.asp](http://www.deq.state.or.us/news/public-notices/PN.asp), or by contacting Brian Finneran at (503) 229-6278, toll-free in Oregon at 1-800-452-4011, or at this address: DEQ Air Quality Division, 811 SW Sixth Avenue, Portland, Oregon 97204.

Comments on the proposed rulemaking may be submitted starting September 1, 2010, at the address above, by email to [NewBART4PGE@deq.state.or.us](mailto:NewBART4PGE@deq.state.or.us), by fax to (503) 229-5675 (attention Brian Finneran), or at any of the public hearings. All comments must be received no later than 5:00 p.m. on Friday, October 1, 2010.

No. 4721040 - August 21, 2010

## **Attachment 6**

### Certification of Public Hearing

See paragraph #3 of cover letter and Attachment 7.1

## **Attachment 7**

### Compilation of Public Comments and Department's Response

7.1 Presiding Officer's Report for Rulemaking Hearings, dated November 12, 2010

7.2 Summary of Public Comments and Agency Responses, dated November 30, 2010



**State of Oregon  
Department of Environmental Quality**

**Memorandum**

---

Date: November 12, 2010

To: Environmental Quality Commission  
From: Brian Finneran, DEQ Air Quality Division  
Subject: Presiding Officer's Report for Rulemaking Hearings

Title of Proposal: Revisions to DEQ Regional Haze BART rules for the PGE Boardman Power Plant

1<sup>st</sup> Comment Period Hearing Dates and Time: September 21, 23, 28, 29, and 30, 2010. 6:00 p.m.

Hearing Locations: 1. Portland OR, Metro Regional Center  
2. Eugene OR, State Office Building  
3. Hermiston OR, Conference Center  
4. Medford OR, DEQ Regional Office  
5. The Dalles OR, Columbia Gorge Community College

2<sup>nd</sup> Comment Period Hearing Dates and Time: November 8, 9, 2010. 6:00 p.m.

Hearing Locations: 6. Portland OR, Metro Regional Center  
7. Boardman OR, Port of Morrow

The Department held seven public hearings on the proposed rulemaking at the locations, dates, and times noted above. The following is a summary of each of these hearings.

**First Comment Period, September 1 – October 1, 2010**

**Public Hearing #1. September 21, 2010, Metro Regional Center, 600 NE Grand Avenue, Portland.** The hearing officer was Linda Hayes-Gorman from DEQ. Present from DEQ were Brian Finneran, Mark Fisher, William Knight and Marcia Danab.

140 people attended the hearing, 42 provided oral testimony, and 193 written comments were submitted.

Linda Hayes-Gorman announced that she was serving as the hearing officer to this hearing. Linda introduced Brian Finneran and Mark Fisher from DEQ, who gave a presentation summarizing the proposed rulemaking. A question and answer period followed the presentation.

Linda announced at 7:08 p.m. she would like to begin the formal hearing on the proposed rulemaking. She informed people that the hearing would be recorded and that testimony would become part of the public record for the rulemaking. Linda explained her role was to take testimony on behalf of the EQC and prepare a report summarizing the written and verbal comments. She asked that people interested in providing oral testimony fill out a witness registration form, and would call people to testify in the order they turned in the form. She added that written comments would be given the same weight as oral comments.

Linda reminded the audience that the deadline date for receipt of written comments on the proposed rules is Friday, October 1, 2010, at 5 p.m. She stated that after reviewing the comments, the department may consider revisions to the proposed rules. She added that the department's final recommendation for rule adoption will be made at the EQC meeting scheduled for December 9-10, 2010, and that the EQC can use its own discretion in deciding whether to adopt all, part or none of the proposed rules, postpone adoption, or hold additional public hearings.

- Summary of the testimony:

42 persons provided oral testimony, and 5 written comments were submitted by persons who did not testify, with one of the five written comments being a form letter that contained 189 signatures. Table 1 lists the names of those who provided testimony and the primary position supported by each person. After this is a summary of the comments provided at the hearing.

<b>Table 1 Portland Hearing 9/21/10</b>		
<i>Name</i>	<i>Affiliation</i>	<i>In Support of</i>
<i>Oral Testimony: (*also provided written comments) (+testified at more than one hearing)</i>		
1. Arya Behbehani * +	Portland General Electric Company	PGE "BART III" 2020 plan
2. Jay Dudley +	Portland General Electric Company	PGE "BART III" 2020 plan
3. Dave Robertson +	Portland General Electric Company	PGE "BART III" 2020 plan
4. Wilda Parks	N.Clackamas Co. Chamber of Commerce	PGE "BART III" 2020 plan
5. Nick Engelfried +	private citizen	2015 closure or sooner
6. John Maloney	private citizen	2020 if PGE needs time
7. Margo Bryant	Portland General Electric Company	PGE "BART III" 2020 plan
8. Larry Givens * +	Umatilla County Commissioner	PGE "BART III" 2020 plan
9. Nancy Hatch	private citizen	2015 closure
10. Bernie Bottomly *	Portland Business Alliance	PGE "BART III" 2020 plan
11. Corky Collier *	Columbia Corridor Association	PGE "BART III" 2020 plan
12. Travis Stovall	East Metro Economic Alliance	PGE "BART III" 2020 plan
13. Jason Brandt	Salem Chamber of Commerce	PGE "BART III" 2020 plan
14. Joe Esmonde	IBEW Local 48	PGE "BART III" 2020 plan
15. John Mohlis	Columbia Pacific Building Trades Council	PGE "BART III" 2020 plan
16. Jonathon Schlueter *	Westside Economic Alliance	PGE "BART III" 2020 plan
17. Debbie Kitchen	Inter Works	PGE "BART III" 2020 plan
18. Mike Holcomb	small business owner	PGE "BART III" 2020 plan
19. Denzel Scheller	Hillsboro Chamber of Commerce	PGE "BART III" 2020 plan
20. Manuel Castaneda	small business owner	PGE "BART III" 2020 plan

21. Tom Wood	Associated Oregon Industries	PGE “BART III” 2020 plan
22. Wayne Lei	private citizen	PGE “BART III” 2020 plan
23. Andree Yost	Portland General Electric Company	PGE “BART III” 2020 plan
24. Elizabeth Kaplan *	private citizen	2015 closure or sooner
25. Rodger Winn	Sierra Club	more protection of health
26. Vern Groves	private citizen	close as soon as possible
27. Roger Cole	Sierra Club	2015 closure
28. Robin Everett	Sierra Club	2015 closure or sooner
29. Robin Fahy	student	closure not addressed
30. Katie Kann	student	close as soon as possible
31. Tyler Gerlach	student	close as soon as possible
32. Geoff Guillory	student	close as soon as possible
33. Maye Thompson *	Oregon Physicians for Social Responsibility	2015 closure Option 3
34. Antonio Samora	private citizen	close as soon as possible
35. Erika Winters	Greenpeace	close as soon as possible
36. Alyssa Ransbury	Greenpeace	close as soon as possible
37. Christopher Froman	Greenpeace	close as soon as possible
38. Anna Sotia Gidlund	Greenpeace	close as soon as possible
39. David Pfsor	Sierra Club	close as soon as possible
40. Wesley Kempler	Sierra Club	early closure in general
41. Cesia Kearns	private citizen	2015 closure or sooner
42. Fred Heutte	Sierra Club & small business owner	2015 closure or sooner
<i>Written comments received from persons who did not testify:</i>		
1. Martin Donohoe, MD	Physician	closure by 2014
2. Borden Beck	private citizen	2015 closure
3. Caitlin Piserchia	student	2020 closure Option 1
4. Louise Waitt	private citizen	close as soon as possible
5. 189 names on form letter submitted	Sierra Club	2015 closure or sooner

**Comment Summary.** At this hearing, the public comments were evenly divided between support of PGE’s “BART III” 2020 plan, and closing the plant in 2015 or as soon as possible. Only a few comments were made in support of DEQ’s proposed Option 3 (reflecting a 2015-16 closure).

Supporters of PGE’s BART III proposal included not only PGE employees, but also representatives of chambers of commerce and business associations. Many of the comments focused on concerns about the economic impact of the plant closing early, and the need to provide PGE with sufficient time (10 years) to buy or build replacement power that is affordable, reliable, cost effective, and includes the potential for renewable and “greener” options. It was pointed out that the PGE Boardman plant is currently an important “base load” source of power, and that it would take time to find replacement power. Many of the commenters expressed concern that while closure of the Boardman plant would worsen the current economy and affect many jobs, PGE’s BART III proposal was clearly better than DEQ’s proposed three options. Other comments in support of PGE’s proposal included the following: (1) it ends reliance on coal and provides a smoother transition into other types of energy; (2) it eliminates all emissions from the plant after 2020; (3) it provides significant cost savings to DEQ’s proposed options, and thus lowers the overall economic impact; (4) rather than using the highest thresholds in the

nation, it represents a lower and reasonable cost effectiveness level that is more consistent with what other states have adopted for BART; (5) avoids a hasty shutdown that could lead to increased electricity rates and impacts on low-income citizens and small businesses; and (6) gives PGE the ability to verify that the proposed dry sorbent injection (DSI) controls are technically feasible by conducting a pilot test study first. Representatives of PGE stated that DEQ's proposed 3 options do provide PGE with some flexibility, but are unworkable and too costly. They said their BART III proposal would meet EPA approvability requirements and result in significant air quality and environmental benefits after 2020, and prior to that date, includes the installation of \$75 million in pollution controls for nitrogen oxide (NOx) and sulfur dioxide (SO2) emissions, significantly reducing these emissions over the next 10 years. They stated that PGE's proposal has no legal barriers in terms of federal approvability or enforceability, and represents a unique opportunity to end coal combustion 20 years early, as an alternative to the plant continuing to operate to 2040 and beyond. They added that PGE is still moving forward to meet DEQ's mercury rules a year ahead of the required 2012 compliance date, which will reduce these emissions by 90 percent.

Supporters of an earlier closure of the PGE Boardman plant than 2020 included environmental groups, students, and private citizens. These comments supported plant closure in 2015 or as soon as possible. The reasons cited focused primarily on concerns about the health effects from the burning of coal, and the need to address global warming now. Health concerns pointed to the plant's current emissions of approximately 25,000 tons of air pollution, as well as mercury emissions, and that these emissions cause significant health problems, including asthma, lung cancer, and other respiratory issues. Global warming concerns pointed to the plant currently emitting about 4 million tons of greenhouse gas emissions, the largest in the state. There was strong support to end reliance on coal technology, to pursue cleaner and renewable energy resources. Others commented that allowing PGE to operate until 2020 was too long, would significantly harm public health and the environment, and that PGE does not need 10 years to find affordable and reliable replacement power, as cleaner forms of power generation are available now. Those who supported DEQ's Option 3 said that closure in 2015 was less expensive than the other options and would provide significant air quality benefits. Other comments included (1) from a cost standpoint, the earliest closure would avoid making unnecessary investments in expensive controls for an "outdated plant"; (2) transitioning to renewable energy could create more "green jobs"; (3) urging DEQ to repeal the existing rules for PGE Boardman which allow the plant to continue operate if PGE decides against any of the options, (4) opposition to giving PGE another 10 years to operate when the plant has avoided installing any major pollution controls since it was constructed in 1977, and (5) criticism of DEQ for not taken action during this time to require controls or close the plant.

There was no other testimony provided. The hearing was adjourned at 9:00 p.m.

**Public Hearing #2. September 23, 2010, Willamette Conference Room, Eugene State Office Building, 165 East 7th Avenue, Eugene.** The hearing officer was William Knight from DEQ. Also present from DEQ were Brian Finneran and Mark Fisher.

33 people attended the hearing, and 15 provided oral testimony.

William Knight announced that he was serving as the hearing officer to this hearing. He introduced Brian Finneran and Mark Fisher from DEQ, who gave a presentation summarizing the proposed rulemaking. A question and answer period followed the presentation.

William announced at 7:14 p.m. he would like to begin the formal hearing on the proposed rulemaking. He stated that the hearing was being recorded and testimony would become part of the public record for the rulemaking. He explained his role was to take testimony on behalf of the EQC and prepare a report summarizing the written and verbal comments. He asked that people interested in providing oral testimony fill out a witness registration form, and would call people to testify in the order they turned in the form. He added that written comments would be given the same weight as oral comments.

William reminded the audience that the deadline date for receipt of written comments on the proposed rules is Friday, October 1, 2010, at 5 p.m. He stated that after reviewing the comments, the department may consider revisions to the proposed rules. He added that the department's final recommendation for rule adoption will be made at the EQC meeting scheduled for December 9-10, 2010, and that the EQC can use its own discretion in deciding whether to adopt all, part or none of the proposed rules, postpone adoption, or hold additional public hearings.

- Summary of the testimony:

15 persons provided oral testimony. Table 2 lists the names of those who provided testimony and the primary position supported by each person. After this is a summary of the comments provided at the hearing.

<b>Table 2 Eugene Hearing 9/23/10</b>		
<i>Name</i>	<i>Affiliation</i>	<i>In Support of</i>
<i>Oral Testimony: (*also provided written comments) (+ testified at more than one hearing)</i>		
1. John Steele	Friends of Dorena Dam Habitat	2015 closure or sooner
2. Katie Taylor *	OSPIRG	2015 closure
3. Casey Gifford *	Climate Justice League	2015 closure
4. Emma Newman	Climate Justice League	2015 closure
5. Dave Hauser	Oregon State Chamber of Commerce	PGE "BART III" 2020 plan
6. Kathy Ging	private citizen	2015 closure Option 3
7. Arya Behbehani * +	Portland General Electric Company	PGE "BART III" 2020 plan
8. Amy Krol	student	2015 closure Option 3
9. Chet Phillips * +	Mayor, City of Boardman	PGE "BART III" 2020 plan
10. Ariel McCoy	OSPIRG	close as soon as possible
11. Sania Radcliffe	Portland General Electric Company	PGE "BART III" 2020 plan
12. Catherine Thomasson	Oregon Physicians for Social Responsibility	2015 closure Option 3
13. Kylie Halloran	Sierra Club	2015 closure Option 3
14. Nick Engelfried +	private citizen	2015 closure or sooner
15. David Besonon	small business owner	close as soon as possible

**Comment Summary.** At this hearing, the testimony reflected the majority of comments and viewpoints expressed at the Portland hearing, and the divergence between those in favor of PGE's BART III proposal and those in favor of an earlier closure. More than half of the comments were in support of a 2015 plant closure and DEQ's Option 3, with fewer advocating the close as soon as possible of the plant.

There was no other testimony provided. The hearing was adjourned at 8:05 p.m.

**Public Hearing #3. September 28, 2010, Hermiston Conference Center, 415 S. Hwy 395, Hermiston.** The hearing officer was William Knight from DEQ. Also present was Brian Finneran, Mark Fisher, and Linda Hayes-Gorman from DEQ, and EQC Commissioner and Vice Chairman, Ken Williamson.

48 people attended the hearing, and 22 provided oral testimony.

William Knight announced that he was serving as the hearing officer to this hearing. He introduced EQC Commissioner Ken Williamson who provided some introductory remarks. Ken informed the audience that the EQC was very interested to hear from the public on this proposed rulemaking. He provided some background on the 2009 rules adopted for PGE Boardman, and how DEQ's rule proposal reflects PGE's proposed 2020 plant closure, and will give PGE the choice to close early or continue operating under the 2009 rules. Next, Brian Finneran and Mark Fisher from DEQ gave a more detailed presentation summarizing the proposed rulemaking. A question and answer period followed the presentation.

William announced at 7:14 p.m. he would like to begin the formal hearing on the proposed rulemaking. He stated that the hearing was being recorded and testimony would become part of the public record for the rulemaking. He explained his role was to take testimony on behalf of the EQC and prepare a report summarizing the written and verbal comments. He asked that people interested in providing oral testimony fill out a witness registration form, and would call people to testify in the order they turned in the form. He added that written comments would be given the same weight as oral comments.

William reminded the audience that the deadline date for receipt of written comments on the proposed rules is Friday, October 1, 2010, at 5 p.m. He stated that after reviewing the comments, the department may consider revisions to the proposed rules. He added that the department's final recommendation for rule adoption will be made at the EQC meeting scheduled for December 9-10, 2010, and that the EQC can use its own discretion in deciding whether to adopt all, part or none of the proposed rules, postpone adoption, or hold additional public hearings.

- Summary of the testimony:

22 persons provided oral testimony. Table 3 lists the names of those who provided testimony and the primary position supported by each person. After this is a summary of the comments provided at the hearing.

<b>Table 3</b>		
<b>Hermiston Hearing 9/28/10</b>		
<i>Name</i>	<i>Affiliation</i>	<i>In Support of</i>
<i>Oral Testimony: (*also provided written comments) (+ testified at more than one hearing)</i>		
1. David Nelson	State Senator, District 29	postpone the rulemaking
2. Bob Jenson	State Representative, District 58	postpone the rulemaking
3. Terry Tallman * +	Morrow County Judge	postpone the rulemaking
4. Larry Givens * +	Umatilla County Commissioner	postpone the rulemaking
5. Chet Phillips * +	Mayor, City of Boardman	PGE “BART III” 2020 plan
6. Karen Wolff	Morrow County resident	PGE “BART III” 2020 plan
7. Arya Behbehani * +	Portland General Electric Company	PGE “BART III” 2020 plan
8. Bill Nicholson	Portland General Electric Company	PGE “BART III” 2020 plan
9. Diane Wolfe	Boardman Chamber of Commerce	PGE “BART III” 2020 plan
10. Rick Main	IBEW Local 125	PGE’s “BART III” or no closure
11. Sheryll Bates	Heppner Chamber of Commerce	PGE “BART III” 2020 plan
12. Karen Pettigrew	City of Boardman	PGE “BART III” 2020 plan
13. Steve Eldrige	Umatilla Electrical Cooperative	oppose early closure
14. Chuck Little +	Pendleton Building Trades	oppose early closure
15. Randy Yates	private citizen	PGE’s 2020 plan or postpone
16. Rod Osgood	IUOE Local 701	oppose early closure
17. John Edmundson	Heppner Chamber of Commerce	oppose early closure
18. Gary Neal	Port of Morrow	concerned about early closure
19. Debbie Pedro	Hermiston Chamber of Commerce	PGE “BART III” 2020 plan
20. Tamra Mabbott	Umatilla County Planning Dept.	need comprehensive planning
21. Don Anderson	NAES Power Contractors	PGE “BART III” 2020 plan
22. David Richards	Boardman resident	oppose early closure

**Comment Summary.** At this hearing, all of the testimony was either in support of PGE’s BART III proposal, or stating that PGE should not close the Boardman plant, including several comments urging postponement of the rulemaking. There was no support for any of DEQ’s proposed three options, and a few comments that the \$7,300 per ton cost effectiveness threshold was too high. Comments in support of PGE’s BART III proposal stated that it represents a reasonable transition plan for workers and the local community to adjust to an early closure, that shutting down before 2020 would have significant economic impacts, and that PGE’s plan was clearly a better alternative than DEQ’s proposed 3 options from an economic standpoint. There were also many comments opposed to any closure of plant, emphasizing concerns about loss of jobs, tax revenue, and other economic impacts. Testimony from local officials with the City of Boardman and Morrow and Umatilla counties pointed out that the plant employs 110 full-time and 225 seasonal workers, and the loss of these jobs could indirectly affect up to 1000 jobs in the area. It was also stated that property taxes from the Boardman plant funds 37 taxing districts, and generates about three-million dollars per year in revenue, or about 15% to local government in Umatilla and Morrow counties. These taxes pay for health services, public safety, and schools. While much of this testimony indicated a preference for the continued operation of the plant, they noted that if PGE chooses to close the plant, the best option would be PGE’s BART III proposal. Several others including a state senator and representative urged DEQ to postpone the rulemaking, citing the same concerns as noted above about major economic impacts if PGE closes the plant.

There was no other testimony provided. The hearing was adjourned at 9:05 p.m.

**Public Hearing #4. September 29, 2010, Conference Room, Suite 201, DEQ Medford Office 221 Stewart Avenue, Medford.** The hearing officer was Brian Finneran from DEQ. Also present was Mark Fisher from DEQ and EQC Commissioner Judy Uherbelau.

12 people attended the hearing, and 9 provided oral testimony.

Brian Finneran announced he was the hearing officer, and that he and Mark Fisher would provide a presentation summarizing the proposed rulemaking. A question and answer period followed the presentation.

Brian announced at 6:55 p.m. he would like to begin the formal hearing on the proposed rulemaking. He stated that the hearing was being recorded and testimony would become part of the public record for the rulemaking. He explained his role was to take testimony on behalf of the EQC and prepare a report summarizing the written and verbal comments. He asked that people interested in providing oral testimony fill out a witness registration form, and would call people to testify in the order they turned in the form. He added that written comments would be given the same weight as oral comments.

Brian reminded the audience that the deadline date for receipt of written comments on the proposed rules is Friday, October 1, 2010, at 5 p.m. He stated that after reviewing the comments, the department may consider revisions to the proposed rules. He added that the department's final recommendation for rule adoption will be made at the EQC meeting scheduled for December 9-10, 2010, and that the EQC can use its own discretion in deciding whether to adopt all, part or none of the proposed rules, postpone adoption, or hold additional public hearings.

- Summary of the testimony:

9 persons provided oral testimony. Table 4 lists the names of those who provided testimony and the primary position supported by each person. After this is a summary of the comments provided at the hearing.

<b>Table 4 Medford Hearing 9/29/10</b>		
<i>Name</i>	<i>Affiliation</i>	<i>In Support of</i>
<i>Oral Testimony: (*also provided written comments) (+testified at more than one hearing)</i>		
1. Bill Hoke	City of Medford	PGE "BART III" 2020 plan
2. Ray Hendricks <sup>+</sup>	Portland General Electric Company	PGE "BART III" 2020 plan
3. Ron Fox <sup>*</sup>	SORED I	PGE "BART III" 2020 plan
4. Monte Mendenhall	Pacific Power	PGE "BART III" 2020 plan
5. Deane Funk	Portland General Electric Company	PGE "BART III" 2020 plan
6. Sarah Westover	Beyond Coal Campaign	2015 closure
7. Meryl Six	Cascade Climate Network + Beyond Coal	close as soon as possible
8. Steve Vincent	Avista Utilities	PGE "BART III" 2020 plan
9. Benji Nagel	student	2015 closure or sooner



**Comment Summary.** At this hearing, most of the testimony supported PGE's BART III proposal, citing the same reasons as noted above at the prior hearings. Two PGE representatives commented that the \$7,300 per ton cost effectiveness is too high, in that unlike other states which used a high cost threshold, it does not take into account the permanent shutdown of the plant and zero emissions after 2020, as does PGE's BART III proposal. The remaining comments supported a 2015 closure or sooner, citing concerns about mostly global warming, and the need to transition to clean energy as quickly as possible.

There was no other testimony provided. The hearing was adjourned at 7:24 p.m.

**Public Hearing #5. September 30, 2010, Columbia Gorge Community College, Health Sciences, Building Three, Room 3.203, 400 E. Scenic Drive, The Dalles.** The hearing officer was William Knight from DEQ. Brian Finneran and Mark Fisher from DEQ were also present.

39 people attended the hearing, and 21 provided oral testimony.

William Knight announced that he was serving as the hearing officer to this hearing. He introduced Brian Finneran and Mark Fisher from DEQ, who gave a presentation summarizing the proposed rulemaking. A question and answer period followed the presentation.

William announced at 7:20 p.m. he would like to begin the formal hearing on the proposed rulemaking. He stated that the hearing was being recorded and testimony would become part of the public record for the rulemaking. He explained his role was to take testimony on behalf of the EQC and prepare a report summarizing the written and verbal comments. He asked that people interested in providing oral testimony fill out a witness registration form, and would call people to testify in the order they turned in the form. He stated that written comments would be given the same weight as oral comments.

William reminded the audience that the deadline date for receipt of written comments on the proposed rules is Friday, October 1, 2010, at 5 p.m. He stated that after reviewing the comments, the department may consider revisions to the proposed rules. He added that the department's final recommendation for rule adoption will be made at the EQC meeting scheduled for December 9-10, 2010, and that the EQC can use its own discretion in deciding whether to adopt all, part or none of the proposed rules, postpone adoption, or hold additional public hearings.

- Summary of the testimony:

21 persons provided oral testimony. Table 5 lists the names of those who provided testimony and the primary position supported by each person. After this is a summary of the comments provided at the hearing.

<b>Table 5</b>		
<b>The Dalles Hearing 9/30/10</b>		
<i>Name</i>	<i>Affiliation</i>	<i>In Support of</i>
<i>Oral Testimony: (*also provided written comments) (+ testified at more than one hearing)</i>		
1. Ted Ferrioli	State Senator, District 30	concerned about early closure
2. John Huffman	State Representative, District 59	PGE “BART III” 2020 plan
3. Terry Tallman * +	Morrow County Judge	concerned about early closure
4. Larry Givens * +	Umatilla County Commissioner	concerned about early closure
5. Ray Hendricks +	Portland General Electric Company	PGE “BART III” 2020 plan
6. Jay Dudley +	Portland General Electric Company	PGE “BART III” 2020 plan
7. Dave Robertson +	Portland General Electric Company	PGE “BART III” 2020 plan
8. Dale Coyle	Portland General Electric Company	PGE “BART III” 2020 plan
9. John McClain	Portland General Electric Company	PGE “BART III” 2020 plan
10. Chuck Little +	Pendleton Building Trades	PGE “BART III” 2020 plan
11. Barry Beyeler *	City of Boardman	PGE “BART III” 2020 plan
12. Daniel Spatz	Columbia Gorge Community College	PGE “BART III” 2020 plan
13. Paul Woodin	Community Renewable Energy Association	PGE “BART III” 2020 plan
14. Peter Cornelison	Friends of the Columbia Gorge	2015 closure Option 3
15. John Wood	private citizen	close as soon as possible
16. Mary Repar *	private citizen	2015 closure or sooner
17. Tom Wood	private citizen	2015 closure or sooner
18. John Nelson	private citizen	2015 closure or sooner
19. Tom Ivancie *	Energy Action NW	PGE “BART III” 2020 plan
20. Jurgen Hess *	private citizen	2015 closure Option 3
21. Dave Berger	private citizen	2015 closure or sooner

**Comment Summary.** At this hearing, the comments were similar to those expressed at the earlier hearings, in terms of the divergence in support between PGE’s BART III proposal and those supporting an earlier closure in 2015 or sooner. Most of the comments in support of PGE’s BART III proposal cited the following: (1) provides PGE with sufficient time (10 years) to develop affordable and reliable replacement power, including renewable energy; (2) a 2020 closure eliminates all emissions, provides significant air quality and visibility benefits, and represents a unique opportunity to end coal combustion 20 years early, as an alternative to the plant continuing to operate to 2040 and beyond; (3) DEQ’s three options cost too much, and the \$7,300 cost effectiveness level is too high, and not consistent with the cost effectiveness used by other states; (4) avoids a hasty shutdown that could lead to increased electricity rates, affecting those on fixed incomes the most; and (5) gives PGE the ability to verify that the proposed dry sorbent injection (DSI) controls are technically feasible by conducting a pilot test study first. Most of the comments supporting a 2015 or earlier closure focused on the magnitude of the Boardman plant emissions, and the affects this has on public health and global warming. These comments included concerns about the extent of air quality impacts in the Columbia Gorge from the Boardman plant. Other comments opposed giving PGE another 10 years to operate when the plant has avoided installing any major pollution controls since it was constructed in 1977, and criticized DEQ for not taken action during this time to require controls or close the plant. A few comments were made that not enough focus has been give to energy efficiency and conservation, and that this would allow PGE to close in 2015 or even sooner.

There was no other testimony provided. The hearing was adjourned at 9:05 p.m.

### **Second Comment Period, October 29 – November 15, 2010**

**Public Hearing #6. November 8, 2010, Metro Regional Center, 600 NE Grand Avenue, Portland.** The hearing officer was Pat Vernon from DEQ. Present from DEQ were Brian Finneran, Mark Fisher, Joanie Stevens-Schwenger, and David Collier.

55 people attended the hearing, 41 provided oral testimony, and 4 written comments were submitted.

Pat Vernon announced that she was serving as the hearing officer to this hearing. She introduced Mark Fisher from DEQ, who gave a presentation summarizing the proposed rulemaking. A question and answer period followed the presentation.

Pat announced at 6:35 p.m. that she would like to begin the formal hearing on the proposed rulemaking. She informed people that the hearing would be recorded and that testimony would become part of the public record for the rulemaking. Pat explained her role was to take testimony on behalf of the EQC and prepare a report summarizing the written and verbal comments. She asked that people interested in providing oral testimony fill out a witness registration form, and would call people to testify in the order they turned in the form. She added that written comments would be given the same weight as oral comments.

Pat reminded the audience that the deadline date for receipt of written comments on the proposed rules is Monday, November 15, 2010, at 5 p.m. She stated that after reviewing the comments, the department may consider revisions to the proposed rules. She added that the department's final recommendation for rule adoption will be made at the EQC meeting scheduled for December 9-10, 2010, and that the EQC can use its own discretion in deciding whether to adopt all, part or none of the proposed rules, postpone adoption, or hold additional public hearings.

- Summary of the testimony:

41 persons provided oral testimony, and 4 written comments were submitted, one by a person who did not testify. Table 6 lists the names of those who provided testimony and the primary position supported by each person. After this is a summary of the comments provided at the hearing.

<b>Table 6 Portland Hearing 11/8/10</b>		
<i>Name</i>	<i>Affiliation</i>	<i>In Support of</i>
<i>Oral Testimony: (*also provided written comments) (+testified at more than one hearing)</i>		
1. Dave Robertson <sup>+</sup>	PGE	revised PGE 2020 proposal
2. Wendi Eiland	Beaverton Chamber of Commerce	revised PGE 2020 proposal
3. Marcy Putman	IBEW Local 125	revised PGE 2020 proposal
4. Kristan Sheeran, Phd	Economics for Equity and Environment Network	support closure before 2020
5. Erika Winters-Heilman	Private citizen	close by summer 2011

6. Kaician Kitko	Private citizen	support closure before 2020
7. Kyle Gorman *	Clackamas county Fire District #1	revised PGE 2020 proposal
8. Linda Moholt	Tualatin Chamber of Commerce	revised PGE 2020 proposal
9. Jay Halladay	Coaxis	revised PGE 2020 proposal
10. Mark Clemons	Group MacKenzie	revised PGE 2020 proposal
11. Samantha Cummings	Private citizen	close in 2011
12. Jon Pauletto	Private citizen	close by July 2011
13. Adam Walters	Student	close by July 2011
14. Trevor Griffith	Private citizen	close by July 2011
15. Robin Everett	Sierra Club	support early closure
16. Sofia Gidlund	Greenpeace	close in 2011
17. Elizabeth Kaplan	Private citizen	2015 closure or sooner
18. Geoff Guillory	Private citizen	close as soon as possible
19. Roger Cole	Sierra Club	close as soon as possible
20. Liam Doherty-Nicholson	Greenpeace	close by July 2011
21. Bob Jenks *	Citizen Utility Board	close no later than 2020
22. Jason Lehne	Foundation Life Management	revised PGE 2020 proposal
23. Angi Dilkes *	Oregon Business Association	revised PGE 2020 proposal
24. Caitlin Piserchia	Private citizen	support early closure option
25. Cesia Kearns	Private citizen	support early closure options
26. Duncan Reid	Private citizen	collaboration, early closure
27. Nathan Jones	Private citizen	collaboration, early closure
28. Alden Moss	Private citizen	2014 or 2015 closure
29. Jenny Bedell-Stiles	Private citizen	support DEQ 3 options
30. NickEngelfried	Private citizen	2015 closure or sooner
31. Maye Thompson	Oregon Physicians for Social Responsibility	2015 closure Option 3
32. Daniel Cobb	Private citizen	close as soon as possible
33. Nancy Hatch	Private citizen	close by 2016 at latest
34. Antonio Zamora	Greenpeace	close as soon as possible
35. Bill Bigelow	Private citizen	close as soon as possible
36. Borden Beck	PGE customer	2015 closure
37. Tom Wood	Associate Oregon Industries	close as soon as possible
38. Mathilde Mouw	Student	2015 closure
39. Joel Durr	Private citizen	close as soon as possible
40. Natasha Hultmann	Private citizen	close as soon as possible
41. Tom Ivancie	Energy Action Northwest	close as soon as possible
<i>Written comments received from persons who did not testify:</i>		
1. Nicole Forbes	Friends of the Columbia Gorge	comments from 5 members

**Comment Summary.** At this hearing, the public comments were evenly divided between support of PGE’s revised 2020 proposal, and closing the plant in 2015 or as soon as possible. Supporters of PGE’s revised 2020 proposal commented that it represented a good compromise between DEQ’s Option 2 with a 2018 closure date, and PGE’s BART III proposal with a 2020 closure date. They also restated their original support for PGE’s BART III proposal, noting that a 2020 closure would provide PGE with sufficient time (10 years) to buy or build replacement power that is affordable, reliable, and cost effective, and allows time for workers at the Boardman plant to transition to new jobs after the closure of the plant. They also pointed out

that PGE's proposal represents a significant cost savings to DEQ's proposed options, and thus lowers the overall economic impact, and that a hasty shutdown could lead to increased electricity rates and impacts on low-income citizens and small businesses.

Supporters of an earlier closure of the PGE Boardman plant cited the need to close the plant in 2015 or as soon as possible. They expressed concerns about the health effects from the plant's emissions, and the need to address global warming now. The health problems mentioned included asthma, lung cancer, and other respiratory issues. Global warming concerns focused on the plant being the largest source of greenhouse gas emissions in the state. There was strong support to end reliance on coal technology, to pursue cleaner and renewable energy resources. Other comments included (1) from a cost standpoint, the earliest closure would avoid making unnecessary investments in expensive controls for an "outdated plant"; (2) transitioning to renewable energy could create more "green jobs"; (3) opposition to giving PGE another 10 years to operate when the plant has avoided installing any major pollution controls since it was constructed in 1977, and (4) criticism of DEQ for not taken action related to a Notice of Violation recently issued recently against the PGE Boardman plant by EPA for allegedly violating New Source Performance Standards.

There was no other testimony provided. The hearing was adjourned at 8:26 p.m.

**Public Hearing #7. November 9, 2010, Port of Morrow, River Front Room, Boardman.**

The hearing officer was Larry Calkins from DEQ. Present from DEQ were Mark Fisher and Joanie Stevens-Schwenger.

32 people attended the hearing, and 17 provided oral testimony.

Larry announced that he was serving as the hearing officer to this hearing. He introduced Mark Fisher from DEQ, who gave a presentation summarizing the proposed rulemaking. A question and answer period followed the presentation.

Larry announced at 6:35 p.m. he would like to begin the formal hearing on the proposed rulemaking. He informed people that the hearing would be recorded and that testimony would become part of the public record for the rulemaking. Larry explained his role was to take testimony on behalf of the EQC and prepare a report summarizing the written and verbal comments. He asked that people interested in providing oral testimony fill out a witness registration form, and would call people to testify in the order they turned in the form. He added that written comments would be given the same weight as oral comments.

Larry reminded the audience that the deadline date for receipt of written comments on the proposed rules is Monday, November 15, 2010, at 5 p.m. He stated that after reviewing the comments, the department may consider revisions to the proposed rules. He added that the department's final recommendation for rule adoption will be made at the EQC meeting scheduled for December 9-10, 2010, and that the EQC can use its own discretion in deciding whether to adopt all, part or none of the proposed rules, postpone adoption, or hold additional public hearings.

- Summary of the testimony:

17 persons provided oral testimony. Table 7 lists the names of those who provided testimony and the primary position supported by each person. After this is a summary of the comments provided at the hearing.

<b>Table 7</b>		
<b>Boardman Hearing 11/8/10</b>		
<i>Name</i>	<i>Affiliation</i>	<i>In Support of</i>
<i>Oral Testimony: (*also provided written comments) (+testified at more than one hearing)</i>		
1. Terry Tallman	Morrow County Judge	concerned about early closure
2. Chet Phillips	Mayor, City of Boardman	revised PGE 2020 proposal
3. Dave Robertson	Portland General Electric Company	revised PGE 2020 proposal
4. Barry Beyeler	City of Boardman	revised PGE 2020 proposal
5. Rick Main	IBEW Local 125	revised PGE 2020 proposal
6. Marcy Putman	IBEW Local 125	revised PGE 2020 proposal
7. Sheryll Bates	Heppner Chamber of Commerce	revised PGE 2020 proposal
8. Diane Wolfe	Boardman Chamber of Commerce	revised PGE 2020 proposal
9. Steve Doherty	Private Citizen	opposed to any closure
10. Chuck Little	Pendleton Building Trades	revised PGE 2020 proposal
11. Dave De Mayo	City of Heppner	continued use of coal
12. Karen Pettigrew	City of Boardman	revised PGE 2020 proposal
13. Karen Wolff	Morrow County resident	revised PGE 2020 proposal
14. Randal Curtis	Private Citizen	revised PGE 2020 proposal
15. Don Russell	Private Citizen	opposed to any closure
16. Gary Neal	Port of Morrow	revised PGE 2020 proposal
17. Jody Marston	Private Citizen	revised PGE 2020 proposal

**Comment Summary.** At this hearing, most of the testimony was in support of PGE's revised 2020 proposal, which would set one closure date (2020) and eliminate the current rules adopted in 2009. Some of the testimony expressed a preference for continued operation of the plant until 2040, but recognized that since PGE has proposed a 2020 closure, the new proposal was the best alternative. There was also testimony that in adopting PGE's new 2020 proposal, there should be no earlier closure options added to the rules, such as DEQ's Option 2 and 3, which had 2018 and 2015-16 closure dates, respectively. The comments stressed the importance of one closure date in 2020, and nothing else. A few comments were made opposing any closure of the Boardman plant, citing the importance of continuing to use coal for energy, and that the regional haze regulations are not valid reasons for requiring expensive pollution controls for the plant.

There was no other testimony provided. The hearing was adjourned at 7:37 p.m.

## Summary of Public Comments and Agency Responses

### Revisions to DEQ Regional Haze BART rules for the PGE Boardman Power Plant

**Prepared by:** Brian Finneran, Mark Fisher, Pat Vernon, DEQ Air Quality

**Date:** November 30, 2010

<b>Comment Period:</b>	There were two public comment periods associated with this rulemaking. The first was from September 1, 2010, to October 1, 2010, with five public hearings. The second was from October 29, 2010, to November 15, 2010, with two additional public hearings.
<b>Public Hearings:</b>	<p>DEQ held the following public hearings:</p> <ul style="list-style-type: none"> <li>• September 21, 2010, 6 p.m. Metro Regional Center, Council Chambers 600 NE Grand Avenue Portland, OR 140 people attended the hearing; 42 people testified.</li> <li>• September 23, 2010, 6 p.m. Eugene State Office Building, Willamette Conference Room 165 East 7<sup>th</sup> Avenue Eugene, OR 33 people attended the hearing; 15 people testified</li> <li>• September 28, 2010, 6 p.m. Hermiston Conference Center 415 S. Hwy 395 Hermiston, OR 48 people attended the hearing; 22 people testified</li> <li>• September 29, 2010, 6 p.m. DEQ Medford Office, Conference Room, Suite 201 221 Stewart Avenue Medford, OR 12 people attended the hearing; 9 people testified</li> <li>• September 30, 2010, 6 p.m. Columbia Gorge Community College Health Sciences Building Building Three, Room 3.203 400 E. Scenic Drive The Dalles, OR 39 people attended the hearing; 21 people testified</li> </ul>

	<ul style="list-style-type: none"> <li>• November 8, 2010, 6 p.m. Metro Regional Center Council Chambers 600 NE Grand Avenue Portland, OR 55 people attended the hearing; 41 people testified</li> <li>• November 9, 2010, 6 p.m. River Front Room 2 Marine Drive Boardman, OR 32 people attended the hearing; 17 people testified</li> </ul> <p>Total attendance at public hearings: 359 persons Total number providing verbal testimony: 167 persons</p>
<p><b>Organization of comments and responses:</b></p>	<p>Summaries of the comments received and DEQ’s response are provided below. Comments are summarized by issue category. The full public record is available for review by the public at the Portland DEQ office (811 SW 6th Ave.). Copies are available upon request.</p>
<p><b>Explanation of acronyms used in this document</b></p>	<p>BART = Best Available Retrofit Technology  DSI = Dry Sorbent Injection  DEQ = Department of Environmental Quality  EPA = Environmental Protection Agency  EQC = Environmental Quality Commission  LNB/MOFA = Low NOx Burner with Modified Overfire Air (control equipment)  NOx = Nitrogen oxides  PGE = Portland General Electric  PM10 = Particulate Matter under 10 microns in size  SO<sub>2</sub> = Sulfur dioxide  SDFGD = Semi-dry Flue Gas Desulfurization (also called a “dry scrubber”)  SNCR = Selective Non-Catalytic Reduction (control equipment)  SIP = State Implementation Plan  VOC = Volatile Organic Compounds</p>



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### Overview of Public Comment process

DEQ presented this proposed rulemaking for public comment from Sept. 1, 2010 to Oct. 1, 2010, and from Oct. 29, 2010 to Nov. 15, 2010. Comments were received via email, in writing and orally. DEQ received the following types of comments:

- 1795 emails
- 91 written letters (by mail, at hearings, or attached to emails)
- 5728 postcards
- 167 persons testified at the public hearings. (see DEQ's Hearing Officer's Report on Public Hearings, Attachment C)

Overall, DEQ received 8193 comments.

All comments received have been made part of the public record and have been reviewed by DEQ. In addition to this summary, the full record of individual comments will be made available to the Environmental Quality Commission. A copy of the full public comment record is available for the DEQ Headquarters, 811 SW 6<sup>th</sup> Ave. Portland. Photocopies of the record are available for a fee.

## **Overview of this Comment and Response Document**

Due to the large number public comments, this document is organized by type of comment, rather than name of commenter. Comments are grouped into six issue categories, as described below. DEQ responses correspond to the order of the comments listed in each issue category. In a few cases, there may be one DEQ response addressing several comments. Due to this format of grouping comments by issue category, most comments have been summarized or paraphrased.

The following describes the six sections in this document:

1. Comments related primarily to DEQ's proposed three emission reduction options. Subcategories in this section address various comments on each of the three options, the cost effectiveness threshold of \$7,300 per ton, DEQ's fiscal impact analysis, and miscellaneous related comments.
2. Comments related primarily to support of PGE's "BART III" 2020 plan. Subcategories in this section include the proposed pilot study for dry sorbent injection (DSI) controls, specific DSI feasibility comments, and the BART approvability of PGE's plan.
3. Comments primarily in support of other options or approaches to the proposed early closure of the Boardman plant by PGE. Subcategories include comments opposed to any plant closure, various comments supporting immediate closure, or prior to 2020, and comments in favor of postponing or taking no action.
4. Comments related primarily to PGE's revised 2020 proposal and DEQ's re-opening of the comment period. Subcategories include comments in favor or opposed to the proposal, and whether to add earlier closure options to the rules.
5. Other comments and issues related to this rulemaking, but not falling into any of the above sections. Subcategories include comments on impacts on air quality and public health, opposition to coal burning, and comments related to DEQ's BART analysis for the Boardman plant. In most cases these comments are beyond the scope of this rulemaking, but DEQ responses have been provided.
6. Miscellaneous comments, similar to Section 5, but beyond the scope of this rulemaking with no DEQ response. These are included as general issues and concerns being included for the record.

## **How to Find Your Comments**

Using the overview described above, go to the section that corresponds to the comment you provided to DEQ. DEQ made every effort to identify as many comments as possible, and has provided a response to each one. However, due to the extremely high number of comments, DEQ was not able to cross reference each comment to the person or organization providing the comment.

All persons who provided comments are listed at the back of this document, starting on page 28. This list is divided into (1) written letters, sent by mail, provided at a hearing, or attached to an

email; (2) oral testimony provided at the public hearings; and (3) email comments.<sup>1</sup> Commenters are also listed by whether the comment was provided in the first or second public comment period. To avoid duplication, those who provided both oral and written comments, priority was given responding to comments provided in writing rather than oral testimony, based on time limitations on testimony that were necessary at the hearings. Also, many of the comments were provided via a form letter, either by email or a postcard. These names are listed separately in an attachment to this document, due the very high volume of names. See Attachment 1. Both this document and Attachment 1 are provided on DEQ's website at [www.deq.state.or.us/aq/pge.htm](http://www.deq.state.or.us/aq/pge.htm).

### General Guide to Comments

To assist in finding your comments, the following is a summary of the different groups that commented on this rulemaking, and notes where in this document the responses can be found. This is intended to be a general guide to finding most of the comments, but not all.

1. *Comments provided by EPA, National Park Service, and the U.S. Forest Service.* These comments focused on the technical and cost aspects of DEQ's three proposed emission reduction options, citing general support of them, but suggesting more stringency in some cases. These comments also did not support PGE's BART III 2020 proposal, citing technical and cost concerns.
2. *Comments from PGE, Industry, Business and Utility related groups, city and county governments, chambers of commerce, and Morrow County government.* The majority of these comments supported PGE's BART III 2020 proposal and PGE's revised 2020 proposal, and generally opposed DEQ's proposed three options, citing concerns primarily about the cost and timing of DEQ's options. There were also comments about potential impacts to the economy under any early closure scenario.
3. *Comments provided by environmental organizations.* This included the Oregon Environmental Council, Sierra Club, Northwest Environmental Defense Center, Friends of the Columbia Gorge, Columbia Riverkeeper, Hells Canyon Preservation Council, Environment Oregon, National Parks Conversation Association, Greenpeace, and others. These comments generally supported DEQ's proposed three options, but also suggested more stringency in some cases. They focused on the importance of an early closure of PGE Boardman plant, citing concerns about the plant's visibility impacts in Class I areas and the Columbia Gorge, on public health and the environment, and global warming. Some cited specific technical and cost reasons for more stringent emission limits prior to an early shutdown of the plant. Other comments focused on the need to end reliance on coal energy, avoid making additional major investments in the Boardman plant if it is closing, and instead invest in cleaner, lower-carbon energy resources.
4. *Comments from the general public.* These comments reflected the divergent opinions between support of PGE's two proposals, and those in favor of an earlier closure. Many of the latter comments supported a 2015 plant closure, such as DEQ's Option 3, or the earliest possible

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<sup>1</sup> Those who submitted written letters with verbal testimony or attached to an email are listed under "written letters". This grouping of comments is based on ease of organization, and does not reflect any ranking or priority order based on type of comment provided to DEQ.

closure of the plant. Separate from these comments were some which did not support any early closure, and instead urged PGE to continue operating the plant until 2040 and beyond.

## SUMMARY OF COMMENTS AND DEQ RESPONSES

<b>I. Comments on DEQ's Proposed Three Emission Reductions Options 1, 2 and 3</b>	
1. DEQ's Option 1 should consider selective catalytic reduction for NO <sub>x</sub>	<ul style="list-style-type: none"> <li>a) In determining that selective catalytic reduction was not cost effective for Option 1, DEQ overestimated the cost of Option 1 controls, and underestimated the control effectiveness of selective catalytic reduction, which can achieve a 90 percent NO<sub>x</sub> reduction. DEQ should consider selective catalytic reduction as BART for Option 1.</li> <li>b) Selective catalytic reduction can reduce emissions by 90 percent. The emission limit that is achievable for selective catalytic reduction is 0.02 lb/mmBtu heat input, not 0.07 lb/mmBtu, as currently in DEQ's rules.</li> <li>c) Using EPA's Cost Manual, if selective catalytic reduction is operated for at least five years, the cost meets the \$7,300/ton threshold used by DEQ.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>a) <i>DEQ evaluated the cost of selective catalytic reduction for the rules adopted in 2009. DEQ contracted with ERG to specifically evaluate the costs of selective catalytic reduction. ERG concluded that PGE's analysis is on the high end of the range of costs associated with selective catalytic reduction retrofits. DEQ accepted PGE's cost analysis due to the unique technical difficulties associated with retrofitting the Boardman plant with selective catalytic reduction. DEQ agrees that selective catalytic reduction on some units can achieve actual emissions at or below 0.05 lb/mmBtu, but setting an emission limit at those levels would be difficult to comply with at all times. The limit that would represent BART for selective catalytic reduction was chosen at a level that can be achieved at all times. The limit was then used to evaluate emission reductions due to selective catalytic reduction.</i></li> <li>b) <i>DEQ does not agree that the Boardman Plant could consistently achieve 0.02 lb/mmBtu, if at all.</i></li> <li>c) <i>DEQ's consultant, ERG, concluded that the actual cost of retrofits is higher than the estimates provided by CUE cost and EPA's Cost Manual. DEQ understands this is due to a very dramatic increase in labor and material costs in recent years.</i></li> </ul>
2. DEQ's Option 1 is too costly.	<ul style="list-style-type: none"> <li>a) Cost information provided by the engineering company Sargent &amp; Lundy indicates that the true cost of SDFGD is 30 percent higher than DEQ's estimate, and thus exceeds the \$7,300 cost-effective threshold, making Option 1 too costly.</li> <li>b) DEQ's Option 1 is just too expensive. Claiming this option cost \$177 million</li> </ul>

	<p>less than the existing rules makes no sense either, as both approaches are too expensive and unsound investments.</p> <p>c) DEQ's Option 1 imposes significant costs (\$300 million) with little or no environmental benefit, and just doesn't make sense.</p> <p>d) DEQ's Option 1 cost \$217 million more than Option 2. That is significant, and the money would be better spent on securing the cleanest and most reliable power by 2020.</p>
<b>Response</b>	<p>a) <i>DEQ is not relying on the cost estimates provided by Sargent &amp; Lundy because the analysis did not include any supporting documentation.</i></p> <p>b) <i>Option 1 was based on PGE's BART proposal in April, which did not include consideration of dry sorbent injection (DSI). Without DSI as a consideration for a 2020 closure, DEQ determined that semi-dry flue gas desulfurization is a cost effective control for a 2020 closure. DEQ concluded that selective catalytic reduction is not a cost effective control for a 2020 closure. In comparison to the rules adopted in 2009, Option 1 would save \$191 million dollars in capital investment for selective catalytic reduction. DEQ concluded that the suite of controls associated with the 2009 rules were cost effective considering the plant could operate indefinitely.</i></p> <p>c) <i>Option 1 provided significant environmental benefit: SO<sub>2</sub> reduction of 11,988 tons/yr and visibility improvement of 3 dv in the Mt. Hood Wilderness area, not to mention the visibility improvement in 13 other Class I areas.</i></p> <p>d) <i>PGE could decide to close the plant in 2018 and use the \$217 million to develop replacement power.</i></p>
3. DEQ Option 2 should not have been proposed	a) DEQ should not propose an option that anticipates a 2018 closure, since PGE has not offered such a closure date, and DEQ lacks legal authority to require it.
<b>Response</b>	a) <i>DEQ's Option 2 was not being proposed as a required closure date. This decision is to be made by PGE. DEQ's Option 2 was a choice for PGE, should it desire an earlier date than 2020. Option 2 represents an alternative for meeting BART that has a significantly lower cost associated with it, due to different SO<sub>2</sub> controls being proposed than DEQ's Option 3.</i>
4. DEQ Options 1 and 2 need modeling	a) DEQ failed to conduct a complete modeling analysis for Options 1 and 2.
	a) <i>DEQ evaluated the impacts in 6 of the 14 Class I areas, as well as the Columbia River Gorge. Total impacts for all Class I areas was estimated by interpolation of the existing modeling data. Since the rules were proposed, DEQ has completed modeling of all Class I areas. The results are provided in an addendum to DEQ's BART report.</i>
5. DEQ's Option 2 should consider SDFGD for SO <sub>2</sub>	<p>a) In determining that Semi-dry flue gas desulfurization (SDFGD) was not cost effective for Option 2, the cost of SDFGD was overestimated and its effectiveness was underestimated. DEQ should consider SDFGD as BART for Option 2.</p> <p>b) SDFGD can reduce emissions by 95 percent. A permit recently issued to a plant in Nevada set an emission limit of 0.09 lb/mmBtu heat input, based on a 24-hr rolling average, and not 0.07 lb/mmBtu, as currently in DEQ's rules.</p>

	d) Using EPA's Cost Manual, if SDFGD is operated for three years, the cost meets the \$7,300/ton threshold used by DEQ.
<b>Response</b>	<p>a) <i>Based on DEQ's evaluation of PGE's cost analysis of selective catalytic reduction, as discussed above, DEQ concluded that PGE's cost analysis for SDFGD was acceptable. DEQ evaluated the performance of SDFGD at other plants and concluded that a limit of 0.12 lb/mmBtu could be achieved at all times and represents BART. Lower limits may not be achievable at all times for a retrofit installation.</i></p> <p>b) <i>95 percent reduction depends on the uncontrolled SO<sub>2</sub> limits. The higher the uncontrolled emissions, the more emission reduction is possible. The federal New Source Performance Standards take this into consideration, so it is reasonable to also consider it for BART. The Boardman Plant's uncontrolled emissions are relatively low due to the use of low-sulfur coal. New plants are expected to meet lower limits because they can be specifically designed to meet the lower limits.</i></p> <p>c) <i>Please see the response to (a).</i></p>
6. DEQ's Option 2 DSI controls can achieve much higher efficiency	a) DEQ has assumed that Dry Sorbent Injection (DSI) can only achieve a 35 percent SO <sub>2</sub> emission reduction, when 90 percent efficiency can be achieved. DEQ should require the lowest emission limit possible.
<b>Response</b>	a) <i>DEQ is not aware of a DSI system such as proposed for the Boardman Plant to have been installed on a similar sized unit. DSI has been used on smaller units that also included fabric filters, which both contribute to improved efficiency of the DSI system. DEQ's proposal relies on the existing ESP and does not include the installation of a fabric filter, which would cost over \$100 million. In addition, the ducts between the air heater and the ESP are much larger at the Boardman Plant. It is more difficult to adequately disperse the sorbent reagent in larger ducts and still maintain enough residence time for the sorbent to react with the SO<sub>2</sub>. 35 percent efficiency is probably a little conservative, but a BART limit should be achievable at all times.</i>
7. DSI controls should be installed sooner rather than later	a) The DSI controls being proposed as part of this rulemaking should be installed as expeditiously as possible, in according with BART requirements.
<b>Response</b>	a) <i>The BART rules allow controls to be installed up to 5 years after EPA approves revisions to the state implementation plan (SIP). EPA may approve the SIP revision as early as May 2011, so the absolute latest the controls could be installed would be May 2016. DEQ recommends the DSI controls be installed by 7/1/14, nearly two years before the BART rules would require. The proposed compliance date allows PGE three years to design the system and conduct the pilot study, which may involve evaluation of several types of sorbent materials and injection locations, along with particulate matter stack testing. Given the extent of the pilot study, three years to install the controls is considered "as expeditiously as possible."</i>
8. DEQ's Option	a) If DEQ agrees to PGE's proposal for a DSI pilot study to evaluate the feasibility

2 emission limit enforceability	of DSI technology, DEQ rules will need to ensure that the emission limit found to be achievable is also enforceable.
<b>Response</b>	a) <i>DEQ agrees. The revised rules include provisions for establishing the alternative limit in the Oregon Title V Operating permit to ensure that the limit is federally enforceable.</i>
9. DEQ's Option 2 should extend to 2020.	<p>a) Since there is some question about DSI equipment on facilities as large as Boardman, technology, a reasonable compromise may be to extend DEQ's Option 2 to 2020, but include more stringent emission limits of 0.35 lb/mmBtu in 2019, and 0.30 lb/mmBtu in 2020.</p> <p>b) Allow the Boardman plant to operate until 2020, but for the last 3 years (2017-2020), limit the plant's emissions by two-thirds, so that total emissions during this time would be the same as DEQ's Option 2, which has a 2018 closure date.</p> <p>c) Pursue a compliance agreement that combines Option 2 and PGE's BART III, and achieves the optimum pollution control at a reasonable cost to PGE, based on reduced hours of plant operations during the final two to three years of plant operation.</p> <p>d) DEQ's Option 2 should extend to 2020, provided PGE take immediate steps to develop replacement power to offset the early closure. PGE's proposed 2020 shutdown is reasonable because it is only two years beyond the 2018 date in DEQ's Option 2, and is technically similar.</p>
<b>Response</b>	<p>a) <i>DEQ agrees this approach may be a reasonable compromise, subject to conducting a pilot study of DSI to determine the feasibility of this technology, as proposed by PGE. DEQ is recommending a limit of 0.40 lb/mmBtu in 2014 and 0.30 lb/mmBtu in 2018, contingent on the results of the pilot studies.</i></p> <p>b) <i>DEQ evaluated lowering the limit to accommodate 2 additional years of operation and determined that limits in 2014 and 2018 are reasonable considering the time it will take to conduct the pilot studies.</i></p> <p>c) <i>DEQ believes that limits on hours of operation would have to be proposed by PGE, much the same as a commitment to closing the plant. DEQ does not have the authority to close a plant or limit hours of operation, unless specifically requested by the owner of the facility.</i></p> <p>d) <i>DEQ has no authority over the development of replacement power. DEQ must ensure that the BART requirements are met for the existing unit during the time that it is operating.</i></p>
10. DEQ's Option 2 cost is uncertain	<p>a) DEQ's analysis suggests Option 2 will cost \$103 million. However, if the DSI controls increase particulate emissions and triggers the need for a baghouse, the cost could double. This would make Option 2 no longer cost effective.</p> <p>b) Cost of the controls under this option won't be determined until this equipment is installed. This option does not make sense.</p>
<b>Response</b>	<p>a) <i>DEQ agrees. DEQ's analysis of DSI did not include a fabric filter. DEQ has revised the proposed rule to include a pilot study to ensure that a fabric filter will not be required.</i></p> <p>b) <i>DEQ's cost estimate is based on vendor data, but the cost may be overstated because it is not clear whether the vendor would include a fabric filter or not.</i></p>

	<i>PGE provided a cost estimate that does not include a fabric filter. PGE's cost estimate is less than DEQ's estimate by about \$28 million.</i>
11. DEQ's Option 3 should consider DSI for SO <sub>2</sub>	a) Under BART, the five-year requirement to install BART says "as expeditiously as practicable." It is possible that DSI could meet DEQ's cost-effectiveness threshold if only used for a few years, and therefore should be required under Option 3.
<b>Response</b>	a) <i>DEQ has agreed to a pilot study to ensure that the DSI limit will not result in a requirement to install a fabric filter. PGE will probably not initiate the study until the rules are approved by EPA in 2011. This allows PGE about 3 years to conduct the pilot study and make any permit revisions necessary to install and operate the DSI system. A compliance date of 7/1/14 will require installation of the DSI system as expeditiously as practicable.</i>
12. DEQ's Option 3 should include SNCR	a) In addition to Low NOx burners and Over-fire air system, Option 3 should include Selective Non-Catalytic Reduction, as it meets DEQ's \$7,300 cost effectiveness threshold.
<b>Response</b>	a) <i>DEQ included SNCR in Options 1 and 2, but no longer recommends SNCR because it will only provide 0.18 dv improvement and there are concerns with the ammonia slip contributing to fine particulate matter emissions. DEQ does not believe it is cost effective for Option 3, which will result in closure of the plant 5 years sooner than the 2020 option.</i>
13. DEQ's Option 3 closure date	a) The closure date under Option 3 needs further clarification, as it is tied to EPA approval of the Oregon SIP within 5 years. In case approval is delayed, the following language should be added: "but in no event later than May 16, 2016."
<b>Response</b>	a) <i>DEQ does not agree. The whole concept of Option 3 is tied to EPA's approval of the SIP as specified in the BART requirements.</i>
14. DEQ's Option 3 should be adopted.	a) The PGE Boardman plant is Oregon's largest source of smog, acid rain, haze, and carbon dioxide. DEQ's Option 3 2015 closure is the best alternative. b) Option 3 represents the best balance between the environment, public health, and electricity rates.
<b>Response</b>	• <i>DEQ appreciates the support for Option 3.</i>
15. Support 2015 closure	a) Support ending coal burning by 2015 and transitioning to cleaner energy sources, in order to reduce haze, acid rain, and mercury contamination, especially in Columbia Gorge. b) Closing the Boardman plant in 2015 gives PGE enough time to develop alternatives and cleaner energy. c) The pollution from the PGE Boardman plant poses a major risk to public health and global warming, and the cheapest and environmentally responsible option is to close the plant by 2015.
<b>Response</b>	• <i>DEQ believes the proposed Option 3 is the best approach to a plant closure in 2015, should PGE choose this option.</i>
16. DEQ's 3 options should be	a) DEQ's 3 proposed options should be adopted as proposed. They provide the greatest practicable protection of visibility in the Columbia Gorge, when



adopted.	<p>considering technical feasibility, costs, and other important socio-economic values.</p> <p>b) DEQ's three early closure options should not be watered down.</p>
<b>Response</b>	<ul style="list-style-type: none"> <li>• <i>DEQ appreciates the support for the three options being proposed.</i></li> </ul>
17. DEQ's cost effectiveness threshold of \$7,300	<p>a) DEQ's cost effectiveness threshold is too high, as other BART analyses across the country are much less. DEQ used the highest cost it could find, citing a proposed BART determination in another state that has not yet been officially approved.</p> <p>b) DEQ's cost effectiveness threshold is too high and too expensive.</p> <p>c) DEQ's cost effectiveness threshold does not take into account the benefits associated with early closure, and should be lower.</p> <p>d) DEQ's approach to cost effectiveness is problematic, in that it is much different than the PUC's view of cost effectiveness. It should be more flexible.</p> <p>e) DEQ should not be proposing one of the highest thresholds of \$7,300, but rather a reasonable lower cost way to meet federal requirements. DEQ should be trying to make this affordable for customers, not the most expensive.</p> <p>f) Using DEQ's \$7,300 per ton cost threshold, installing selective catalytic reduction controls for the remaining useful life of 5 years under this threshold, and should be considered under DEQ's Option 1.</p> <p>g) Using DEQ's \$7,300 per ton cost threshold, installing SDFGD controls for the remaining useful life of 3 years falls under this threshold, and should be considered under DEQ's Option 2.</p> <p>h) Using DEQ's \$7,300 per ton cost threshold, installing SNCR controls for the remaining useful life of 2 years is under this threshold, and should be considered under DEQ's Option 3.</p>
<b>Response</b>	<p>a) <i>BART is based on several factors. No single factor can determine BART. DEQ considers \$7,300 to be cost effective considering the number of Class I areas impacted and the magnitude of the impacts. Plant closure will provide significant visibility improvement in the long term, but not for the short term. BART must address both short and long term impacts. The remaining useful life of the plant is a significant factor for determining the cost effectiveness of a control option. DEQ has included the remaining useful life of the plant in its analysis.</i></p> <p>b) <i>See response (a).</i></p> <p>c) <i>See response (a).</i></p> <p>d) <i>DEQ is unable to respond to this comment.</i></p> <p>e) <i>DEQ is aware of the potential cost to rate payers. The modified 2020 proposal does not include SDFGD or selective catalytic reduction, which are the most expensive control options.</i></p> <p>f) <i>DEQ does not agree that selective catalytic reduction is cost effective for 5 years. The incremental cost as compared to LNB is greater than \$10,000/ton if selective catalytic reduction is installed on 7/14, which is 6.5 years of operation. The incremental cost would be even higher for 5 years of operation.</i></p> <p>g) <i>According to DEQ's analysis, the cost effectiveness of SDFGD is approximately \$7,300/ton, which is the threshold for cost effectiveness. That is why SDFGD is not included in option 2. The incremental cost as compared to DSI is approximately \$7,200/ton if the plant runs until 12/31/20. Therefore,</i></p>

	<p><i>DEQ does not consider SDFGD cost effective for a 2020 closure, as well.</i></p> <p><i>h) DEQ agrees that SNCR is cost effective, but SNCR will only achieve .018 dv further visibility improvement as compared to LNB. Considering the negligible improvement and the potential PM issues associated with ammonia slip, DEQ does not recommend SNCR.</i></p>
18. DEQ's cost per deciview	a) DEQ used a cost per deciview of \$10 million/dv as a factor in determining BART. This is below the national average of \$14-\$18 million/dv.
<b>Response</b>	a) <i>Cost effectiveness in terms of deciviews is not a well established parameter. DEQ has tried to incorporate the parameter into its BART analysis using information from several, but not all BART evaluations. DEQ appreciates the additional information.</i>
19. DEQ's use of incremental cost	<p>a) According to EPA's BART Guidelines, incremental cost should be used in combination with the average cost effectiveness in determining BART. To use incremental cost correctly, it must be compared to other similar situations. DEQ did not provide comparisons of incremental cost used by other states for BART.</p> <p>b) DEQ should clarify that the \$7,300/ton threshold applies to both the annualized cost effectiveness and the incremental cost effectiveness.</p>
<b>Response</b>	<ul style="list-style-type: none"> <li>• <i>DEQ used incremental cost in addition to average cost effectiveness in its analysis. The same threshold is used for incremental cost as is used for the average cost effectiveness.</i></li> </ul>
20. Emission reductions after closure	a) DEQ's proposed rulemaking fails to fully consider or recognize the impact of an early closure, in terms of the elimination of all emissions.
	a) <i>DEQ acknowledges that plant closure will eliminate 25,700 tons of visibility impairing pollutant emissions from the coal-fired power plant and will eliminate its impact on the visibility in Class I areas. This is a significant factor for meeting the reasonable progress goals of the regional haze program. However, DEQ must also satisfy the BART requirements in the near term.</i>
21. Determining compliance with NOx limits	a) As currently proposed, DEQ's rules allow PGE an entire year to demonstrate compliance with the 30-day rolling average NOx emission limit. This amount of time is unnecessary, and should be changed to 30 days after the emission limit goes into effect.
	a) <i>DEQ recommends changing the evaluation period to 180 days based on a 30-day rolling average. This will provide PGE time to fine tune the low NOx burners.</i>
22. Startup/shutdown emissions not addressed	a) DEQ's proposed BART rules improperly exclude emissions during periods of startup and shutdown, related to the emission limits proposed for NOx, SO2, and PM. The rules need to account for the frequency and duration of these periods, the quantity of emissions, and the visibility impacts during these periods in Class I areas.
	a) <i>DEQ does not necessarily agree that BART was intended to establish emission</i>

	<p><i>limits and controls for startup and shutdown periods. The BART guidelines specifically state that emissions during startup and shutdown should not be used in the visibility analysis used to determine if a source is subject to BART. (Guidelines III.A.2.Option 1) This analysis is not only used to establish whether a source is subject to BART, but also establishes the baseline for evaluating the visibility improvement due to various control technology options. Without determining the visibility impacts during periods of startup and shutdown in the baseline period, it is not possible to evaluate the visibility improvement of retrofit control technologies during periods of startup and shutdown. However, to minimize the emissions during periods of startup and shutdown, DEQ recommends making the current NSPS limits for SO<sub>2</sub> and NO<sub>x</sub> applicable at all times. For PM, DEQ recommends adding a reference to DEQ's excess emission rules that require approved startup/shutdown plans for minimizing emissions to the extent practicable, including minimizing the duration of startups. (see OAR 340-214-0310)</i></p>
<p>23. DEQ's Fiscal Impact Statement</p>	<ul style="list-style-type: none"> <li>a) DEQ's Fiscal and Economic Impact Statement was flawed, in that it failed to consider the cost of replacement power associated the with Boardman plant closure.</li> <li>b) The cost of any BART option that includes mandatory or premature plant closure must include cost of replacement power.</li> <li>c) In identifying increases in electricity rates, DEQ did not consider factors such as the timing of these rate impacts and whether they might affect different customer classes disproportionately.</li> <li>d) DEQ's Fiscal and Economic Impact Statement should have included an analysis of the benefits of greenhouse gas reductions associated with early plant closure.</li> <li>e) DEQ's Fiscal and Economic Impact Statement did not adequately consider the impact of plant closure on the economy, such as loss of employment and tax revenue.</li> </ul>
<p><b>Response</b></p>	<ul style="list-style-type: none"> <li>a) <i>DEQ is required to conduct a fiscal and economic impact analysis on the costs related to the rulemaking it proposes. This rulemaking would require the installation of pollution control equipment, or other changes at the Boardman plant to meet emission limits based on DEQ's BART determination. As a result, the costs identified in the fiscal and economic impact statement address the costs of purchasing, installing, and operating the pollution controls. It should also be noted that the proposed rules provide PGE with the option of closing or continuing to operate to 2040 and beyond, under the existing rules. DEQ is not requiring early closure, nor has the authority to do so. Decisions that PGE may make in the future about replacement power, should Boardman close, is part of the Integrated Resource Planning process that involves PGE and the Public Utilities Commission, and therefore beyond the scope of this rulemaking. Having said this, DEQ did include did include information provided by PGE on likely rate impact increases if PGE decides to close the plant, that included potential cost of replacement power, and cost associated with decommissioning the plant.</i></li> <li>b) <i>See response (a).</i></li> <li>c) <i>DEQ's Fiscal and Economic Impact Statement did include estimates of</i></li> </ul>

	<p><i>electricity rate increases on different customer classes, such as residential, small business, local government, and others, based on the three options being proposed, and in comparison to the rate impacts under the current 2009 rules. The estimates of rate increases did vary between these customer classes, showing how the potential impacts could be disproportional between these classes.</i></p> <p>d) <i>DEQ’s Fiscal and Economic Impact Statement did not an analysis of the greenhouse gas emission reduction benefits. As noted above, this rulemaking addresses regional haze/BART requirements, not carbon regulation. An analysis of these benefits is beyond the scope of this rulemaking.</i></p> <p>e) <i>DEQ did include a preliminary assessment of the potential economic impacts on employment and local government tax revenues, even though these costs are not a direct result of the proposed rules, but rather the result of a decision made by the PGE and owners of the Boardman plant to close early.</i></p>
<p>24. Miscellaneous</p>	<p>a) DEQ should add to its proposed rules additional time for compliance, if DEQ cannot act on a permit application to install controls in a reasonable timeframe.</p> <p>b) Remove the reference in the rules to the “Foster-Wheeler boiler” at the Boardman plant. DEQ should strike this name, and replace it with “any coal-fired boiler”, so that no other coal-fired boiler could be installed.</p> <p>c) The enforceability of DEQ’s three options is not strong enough. The rules should void the operating permit for the plant if PGE fails to comply with the selected closure deadline. Also, the rules should state that non-compliance would result in the state, EPA, and citizens are able to apply for both injunctive and civil penalty relief.</p> <p>d) DEQ should correct its definition of deciview in Section 340-223-0020 to: (<math>dv = 10\ln(b_{ext}/10 \text{ Mm}^{-1})</math>)</p> <p>e) In Section 340-223-0040, please specify the averaging period for the 0.070 lb/mmBtu NOx emission limit.</p> <p>f) Please specify the control technologies assumed to be implemented to achieve the emission rates in each rule section on DEQ’s three options.</p> <p>g) As currently proposed, the rule allows PGE an entire year to demonstrate compliance with the 30-day rolling average NOx emission limit. Rather than a year, the rule should say “within 30-days after the emission limit goes into effect.”</p> <p>h) Section 340-223-0080 in (2)(b)(A) has a typo. It says the emission limit is 0.40 lb/mmBtu, but it should be 0.12 lb/mmBtu.</p> <p>i) DEQ should work openly and collaboratively with the Oregon PUC and utilities to find a workable solution.</p> <p>j) DEQ’s proposed rules, when combined with many other federal regulations, such as greenhouse gas emissions and hazardous air pollutants, impose such significant costs that they are essentially regulating the plant out of business.</p>
<p><b>Response</b></p>	<p>a) <i>DEQ has added provisions for extending the compliance date in the event the DEQ does not issue a timely permit revision, but the extension is limited to no more than 5 years from the date EPA approves the SIP revision.</i></p> <p>b) <i>DEQ has revised the rules to “cease firing coal” instead of requiring shutdown of the Foster Wheeler boiler.</i></p> <p>c) <i>DEQ believes that the rules for ceasing to fire coal are enforceable by the state</i></p>

	<p><i>and will be federally enforceable once EPA approves the revision to the SIP.</i></p> <p>d) <i>The proposed rules have been revised as requested.</i></p> <p>e) <i>DEQ will add a 30-day rolling average to the limit.</i></p> <p>f) <i>Option 1 and 2 are now combined. The control technologies are low NOx burners with over-fire air on 7/1/11, SNCR contingency by 7/1/13 if 0.23 lb/mmBtu can't be met by 7/1/11 with the low NOx burners, dry sorbent injection on 7/1/14 with a limit of 0.40 lb/mmBtu and dry sorbent injection with a limit of 0.30 lb/mmBtu by 7/1/18.</i></p> <p>g) <i>DEQ agrees. The evaluation period has been shortened to 180 days.</i></p> <p>h) <i>DEQ has made the correction.</i></p> <p>i) <i>The PUC is considered a significant stakeholder for DEQ's rulemaking.</i></p> <p>j) <i>DEQ agrees there are many uncertainties associated with future regulations and the viability of the plant.</i></p>
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## II. Comments on PGE's BART III 2020 Proposal alternative to DEQ's three options

### A. Comments in Support

1. 2020 closure is reasonable	<p>a) PGE's BART III proposal meets federal requirements, is cost effective, and is the best approach for the economy in meeting PGE's objective for an early closure.</p> <p>b) PGE's BART III proposal should be supported as it is reasonable approach for closing the plant 20 years earlier than planned.</p> <p>c) PGE's BART III proposal is the least expensive to customers and provides environmental benefits.</p> <p>d) PGE's BART III proposal is a reasonable, cost-effective step to improve air quality in the near term, while providing even greater improvements over the long term.</p> <p>e) PGE's BART III proposal for a 2020 shutdown is reasonable, in that it provides enough transition time to buy or build affordable replacement power.</p> <p>f) PGE's BART III proposal for a 2020 shutdown is reasonable, in that it would lessen the economic impact, and allow workers at the plant and nearby communities to make transition and adjust to this shutdown.</p> <p>g) With 110 full-time employees, 30 contractor positions, and 225 seasonal workers, the Boardman plant is a critical employment source in the region. PGE's BART III proposal is the best approach to address early closure and loss of these jobs.</p> <p>h) Prefer the plant operate until 2040, given the impact early closure would have on jobs and the economy. But if early closure must happen, support PGE's BART III proposal.</p> <p>i) While I'm not convinced the plant should be closed in 2020, PGE has made a generous offer that should be considered.</p> <p>j) Closing the plant too early could have significant impact on low-income families. For them, low cost power is essential.</p> <p>k) PGE's BART III plan gives enough time to develop renewable energy.</p> <p>l) Global warming is a real problem. But we need to find environmentally sound business solutions to meet all of our needs. PGE's proposal is the kind of compromise that can be an example for the rest of the country.</p>
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<b>Response</b>	<ul style="list-style-type: none"> <li>• <i>DEQ appreciates these comments and understands the concerns about the economic impact of PGE's decision for early closure, the need for time to develop replacement power and transition to a new technology, the importance of providing reliable, affordable, and renewable energy to PGE customers, and the others concerns expressed above.</i></li> </ul>
2. DSI Pilot Study	<p>a) If the pilot study that PGE is proposing demonstrates that the 0.4 lb/mmBtu SO2 limit cannot be reached, DEQ will need to set an alternate limit that PGE can meet without affecting the performance of mercury controls or triggering PSD for PM2.5.</p> <p>b) The DSI pilot studies need to focus on technical issues and not cost.</p>
<b>Response</b>	<p>a) <i>DEQ has restructured the rules to add provisions for conducting a pilot study and establishing alternative emission limits.</i></p> <p>b) <i>The proposed rules specifically state that alternative limits for DSI would be considered if it is demonstrated that DSI would either reduce the efficiency of the mercury controls or increase fine particulate matter that would result in ambient concentrations above the significant impact level. DEQ believes it is very important that the mercury emissions be reduced by 90 percent if at all possible. DEQ did not intend for the DSI system to include a fabric filter in place of the existing ESP. Adding a fabric filter would increase the efficiency of the DSI system, but would not be cost effective considering the capital cost of a fabric filter is approximately \$100 million. DEQ proposes a limit of 0.40 lb/mmBtu for the DSI system specifically to avoid a requirement to install a fabric filter. The pilot study will further evaluate whether the limit can be met without affecting the mercury controls and/or increase PM ambient concentrations above the significance level. The pilot study is not intended to further evaluate the cost effectiveness of a fabric filter.</i></p>
<b>B. Support Opposed</b>	
3. Not protective enough	<p>a) PGE's BART III plan will not protect Oregon's special places, air quality, or the health of our families and should be rejected.</p>
<b>Response</b>	<p>a) <i>DEQ's proposed three options would provide more emission reductions and visibility improvement than PGE's BART III plan. However, all approaches include a shutdown of the plant, which eliminates all emissions, and therefore would have significant benefits to visibility, as well as result in improvements in air quality.</i></p>
4. Disagree with PGE on SDFGD being BART in 2020	<p>a) DEQ's Option 1 states that SDFGD is BART in 2020. PGE submitted costs that SDFGD is 30 percent over its previous estimates, but has not provided sufficient information to support this claim.</p>
<b>Response</b>	<p>a) <i>DEQ agrees. DEQ is not relying on PGE's revised cost analysis. DEQ believes SDFGD is still cost effective if the plant operates through 2020 based on the average cost effectiveness of the controls. However, with DSI included in the rules, the incremental cost of SDFGD is nearly \$7,300/ton. Therefore, DEQ does not believe SDFGD is cost effective if the plant closes down on 12/31/20 and DSI is installed on 7/1/14.</i></p>

5. PGE's claim DSI is infeasible is without merit	<p>a) Just because no DSI system has been demonstrated on a boiler exactly the same the Boardman plant does not mean the technology is infeasible. DSI technology is feasible for this plant. (23)(49)</p> <p>b) In looking at other similar plants in the country, the PPL Montour power plant in Washingtonville PA is currently installing DSI on two 750 MM coal-fired boilers.</p>
<b>Response</b>	<ul style="list-style-type: none"> <li>As stated in DEQ's BART Report for PGE Boardman Plant, DEQ has determined that DSI is BART for this facility, even though this technology has been only demonstrated on smaller boilers than the one at the Boardman plant. DEQ sees no reason why DSI would not be feasible for the Boardman boiler. The proposed pilot study to test the effectiveness of DSI will allow the control effectiveness of this technology to be fully evaluated.</li> </ul>
6. DSI would trigger PSD is without merit	<p>a) PGE's claim that DSI would increase particulate emissions and trigger pollution controls such as a baghouse is premature and without merit, unless further documentation, such as modeling, can be provided and verified.</p>
<b>Response</b>	<p>a) DEQ acknowledges that the use of sorbent injection will increase particulate emissions, but not to the point of triggering additional pollution controls. This will be confirmed by further evaluation through the pilot study being proposed as part of these rule changes. The pilot study will include an evaluation of available sorbent materials, the effect of the sorbent materials on the existing particulate matter control system and mercury control system, and finally, air dispersion modeling will be conducted if necessary to determine if PM emissions will have an adverse impact on air quality.</p>
7. PGE's BART III fails to satisfy BART	<p>a) If interim controls such as DSI are not feasible, PGE proposes to use low-sulfur coal, which would reduce SO<sub>2</sub> emission by less than 2 percent from the baseline emission rate. A 2 percent reduction for a facility that continues to operate five years after EPA's approval of the SIP is not BART, and would not be approvable by EPA.</p>
<b>Response</b>	<p>a) DEQ believes DSI is feasible and will achieve emission reductions in the range of 20 to 35 percent initially.</p>
8. PGE's BART cost analysis needs more evaluation	<p>a) PGE's cost analysis for its' BART III proposal needs to be reviewed to determine if it was done in accordance with EPA's OAQPS Cost Manual. PGE should not have included the cost of replacement power in its' BART analysis.</p>
<b>Response</b>	<p>a) The cost analysis performed by PGE was not in strict adherence to EPA's OAQPS Cost Manual. PGE's estimates more closely reflect real world cost due to higher than normal escalation of costs in recent years. PGE did not include the cost of replacement power in its BART analysis. The cost of replacement power is a concern, but the cost was not included in the BART analysis.</p>
9. Miscellaneous	<p>a) The heat input rates in PGE's proposal are unclear. DEQ should clarify the appropriate heat input from which to measure the emission reductions that are claimed by PGE, and how these calculations were done.</p> <p>a) DEQ should also ensure that the calculations of annual pollution under BART are correct given PGE Boardman's maximum capacity to emit for purposes of</p>

	setting the PSEL.
<b>Response</b>	<p>a) <i>The heat inputs for each pollutant represent the highest 12-month heat input associated with the highest 24-hour emissions during calendar years 2003 through 2005. This information is provided in Table 5-1 of PGE's report. The values are 48,630,688 mmBtu/yr for NO<sub>x</sub>, 48,571,330 mmBtu/yr for SO<sub>2</sub>, and 49,093,487 mmBtu/yr for PM. These values were also used to calculate the projected actual emissions after installing the BART controls.</i></p> <p>b) <i>The heat inputs were used to calculate the projected annual emissions after the BART controls are installed for the purpose of determining emission reductions and visibility analysis. The Plant Site Emission Limits will be based on the capacity of the facility using the BART control limits.</i></p>

<b>III. Comments in support of other options related to an early closure of the PGE Boardman plant.</b>	
1. Do not allow Boardman plant to continue operation to 2040	<p>a) The PGE Boardman plant should not be allowed the option of continuing to operate until 2040 and beyond, due to the amount of air pollution it produces. The existing rules should be eliminated.</p> <p>b) The PGE Boardman plant should not be allowed to continue to operate through 2040 due to its mercury emissions, and the resulting impact on water quality and fish.</p> <p>c) Keeping the PGE Boardman plant running until 2040 is ludicrous, and the plant should be shutdown in 2020.</p> <p>d) Most important goal is to avoid making a large investment in coal that results in Boardman operating thru 2040, and find a single closure option that is reasonable, and meets both DEQ and PGE needs.</p> <p>e) DEQ's existing rules will cost the PGE Boardman plant over \$500 million. Investing this amount of money in coal power is not in the best interests of Oregon.</p>
<b>Response</b>	<ul style="list-style-type: none"> <li>• <i>PGE's revised 2020 proposal would eliminate the 2009 rules adopted for the PGE Boardman plant, which allowed the plant to continue to operate indefinitely, and would instead establish a firm closure date of Dec. 31, 2020. The control technologies identified as BART with a 2020 closure were chosen taking into consideration the remaining useful life of the plant. The revised recommendation does not require selective catalytic reduction or SDFGD, but would require the less expensive DSI system.</i></li> </ul>
2. Find a middle ground between Option 2 and PGE's 2020 proposal	<p>a) Efforts should be made to finding an agreeable result between DEQ's Option 2 and PGE's BART III 2020 proposal, with adjustments to avoid triggering additional pollution controls, and then closing the plant. Both approaches involve the same DSI technology, and only two years apart, which could be a time to find cleaner replacement power.</p> <p>b) Since there is some question about DSI equipment on facilities as large as Boardman, technology, a reasonable compromise may be to extend DEQ's Option 2 to 2020, but include more stringent emission limits of 0.35 lb/mmBtu in 2019, and 0.30 lb/mmBtu in 2020.</p> <p>c) Allow the Boardman plant to operate until 2020, but for the last 3 years (2017-</p>



	<p>2020), limit the plant's emissions by two-thirds, so that total emissions during this time would be the same as DEQ's Option 2, which has a 2018 closure date.</p> <p>d) Pursue a compliance agreement that achieves optimum pollution control at a reasonable cost to PGE, based on reduced hours of plant operations during the final two to three years of plant operation.</p> <p>e) Keeping the PGE Boardman plant running until 2040 is ludicrous, and the plant should be shutdown in 2020.</p> <p>f) DEQ should remove the 2040 option and work with PGE and other stakeholders to find practical options for closure no later than 2020.</p> <p>g) PGE has voluntarily offered to cut the plant's useful lifespan by 20 years. DEQ needs to find a practicable approach to balancing the environmental and economic issues.</p> <p>h) Give PGE the time it needs to develop replacement power that is affordable.</p>
<b>Response</b>	<ul style="list-style-type: none"> <li>• <i>PGE's revised 2020 proposal does represent a middle ground between their BART III proposal and DEQ's 2018 Option 2. First, it removes the 2040 option, and establishes a firm 2020 closure date. Second, after 2018, it establishes a lower SO<sub>2</sub> emission limit for the two years prior to 2020 closure</i></li> </ul>
3. Close the plant earlier than 2015	a) Close the PGE Boardman plant in 2014, rather than 2020, and transition to cleaner energy sources.
<b>Response</b>	a) <i>DEQ's Option 3 includes a closure date of 2015-16, which is based on the federal requirement to install BART in five of EPA approval of the Oregon Regional Haze Plan. Under this option, PGE may choose to close the plant at that time, and not install any BART controls, beyond those required in 2011 for NOx. As noted below, DEQ does not have authority to require an earlier shutdown (or any shutdown other than those established by rule as an option for PGE).</i>
4. Close the plant as soon as possible	a) The PGE Boardman plant should be closed at the earliest date possible, to end reliance on coal, and transition to cleaner energy sources.
<b>Response</b>	a) <i>DEQ lacks the authority under its current regulations to simply close the PGE Boardman plant. This facility currently operates under an approved air quality permit, and therefore cannot be shutdown, unless there is regulatory authority to do so. DEQ has proposed three options to meet federal BART requirements that allow PGE to close the plant early. Should PGE choose one of these options, the date for plant closure under that option would be mandatory and enforceable. Outside of this regulatory authority, there is no other means to require plant closure.</i>
5. Postpone this rulemaking	a) DEQ should postpone any decision on this rulemaking. Shutting down the PGE Boardman plant is unnecessary. The economic impact would be too severe, and now is not the time to be considering this action.
<b>Response</b>	a) <i>DEQ is required under the federal Regional Haze Rules to meet BART regulations that apply to facilities like PGE Boardman. In 2009, the EQC adopted the Oregon Regional Haze Plan that included rules to meet federal BART requirements, and then submitted this plan to EPA for approval. The</i>

	<p><i>plan included a provision that allowed PGE to make a formal request for a rule change to the newly adopted BART rules, should PGE wish to close the plant early. This rulemaking is in response to such a request from PGE. Postponing this rulemaking would require PGE to rescind their request, and continue under the 2009 rules. Over the last six months, PGE has made it clear to DEQ, the PUC, and their stakeholders that they seek rule changes to allow for an early closure of the plant.</i></p>
6. More collaboration and less regulation	<ul style="list-style-type: none"> <li>a) DEQ should take a balanced, reasonable approach to this rulemaking with PGE, which focuses more on collaboration than regulation.</li> <li>b) DEQ should work openly and collaboratively with the Oregon PUC and utilities to find a workable solution.</li> <li>c) DEQ should adopt a proposal that inflicts the least cost on Oregon's ailing economy and minimizes further job losses.</li> <li>d) First approach should be to develop comprehensive energy plan, which involves collaboration between PUC, EFSC, and DEQ. Need an impact analysis on jobs and economy if plant were to shutdown.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>• <i>As noted above, this rulemaking was triggered by a formal request from PGE for a rule change. Upon receiving this request, DEQ has taken a collaborative approach in working with PGE to develop regulatory options to address PGE's stated objective for an early closure of the plant. This has included seeking public comment on two proposals developed by PGE, as part of this rulemaking effort.</i></li> </ul>
7. Set 2011 as decision date	<ul style="list-style-type: none"> <li>a) Set 2011 as the decision point to either close Boardman or make PGE comply with new rules on an accelerated schedule.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>a) <i>In essence, PGE will be required to decide what option to take in 2011 because of the lead time to procure and install the control equipment. The decision date in the rule merely requires PGE to confirm what option they have chosen before the compliance dates in Options 1 and 2.</i></li> </ul>
<b>IV. Comments related to the new PGE BART proposal on 2020 closure, associated with the re-opening of the comment period.</b>	
1. Support the revised proposal	<ul style="list-style-type: none"> <li>a) PGE's new BART proposal is a reasonable approach that sets one date, eliminates the existing rules and ability to operate until 2040, and is a good compromise with DEQ's Option 2.</li> <li>b) In addition to the revised proposal, also still support PGE's BART III proposal.</li> <li>c) Would prefer the plant to continue operating until 2040, but if early closure must happen, support PGE's revised 2020 proposal.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>• <i>DEQ agrees with PGE's proposal to close the plant in 2020. By presenting the 2020 proposal, PGE has decided not to run the plant beyond 12/31/20.</i></li> </ul>
2. Do not add early closure options to the rules	<ul style="list-style-type: none"> <li>a) Support PGE's new 2020 proposal, and do not add any earlier closure date options to the rules, such as 2018 or 2015-16. Rules should just have one closure date.</li> </ul>

<b>Response</b>	a) <i>DEQ appreciates these comments, but believes there is still merit in retaining the 2015/2016 closure option. If PGE chooses to close the plant within 5 years of the date EPA approves the SIP, the cost savings from not purchasing and installing the dry sorbent injection system could offset the costs of replacement power. The 2015/2016 option may also be useful in responding to future regulatory requirements, such as the National Emission Standard for Hazardous Air Pollutant Standard scheduled for adoption in 2011 and carbon regulations.</i>
3. Add early closure date options	b) Both the 2015/16 and 2018 closure options should be added to the rules.
<b>Response</b>	b) <i>As noted above, DEQ recommends adding the 2015/16 closure option, within 5 years after EPA approves the SIP revision. The Boardman plant would have to comply with NO<sub>x</sub> limits in 2011, but not the SO<sub>2</sub> limits in 2014. DEQ does not recommend including BART requirements for a 2018 closure because it would not be substantively different than the BART requirements for the 2020 closure.</i>
4. Opposed to the revised proposal	a) The new proposal from PGE is not much different than the prior proposal, and is therefore not much of an improvement, or supportable. b) Still support early closure in 2015 or sooner. c) Still support closure as soon as possible.
<b>Response</b>	<ul style="list-style-type: none"> <li><i>The revised proposal from PGE is different than their prior BART III proposal, in that it proposes to eliminate the current rules and the 2040 option and set a firm closure date of 2020, and also establishes a lower SO<sub>2</sub> emission limit for the two year period from 2018 to 2020 closure.</i></li> </ul>
5. 2020 closure must be federally enforceable	a) Under PGE's new BART proposal, any rule requirement for permanent closure in 2020 must be federally enforceable.
<b>Response</b>	a) <i>The requirement to cease burning coal by 12/31/20 will be federally enforceable if the requirement is approved by EPA as a revision to DEQ's state implementation plan. Failure to comply with the requirement would result in enforcement action (civil or criminal).</i>
6. Repowering the plant after closure	a) The plant can't be repowered without permitting it as if it were a new source.
<b>Response</b>	a) <i>The proposed rules require PGE to cease burning coal in the Foster-Wheeler boiler by 12/31/20. Since the Foster-Wheeler boiler is currently designed to burn only coal, other than during short periods of startup, the requirement to cease burning coal will eliminate the netting basis for the Foster-Wheeler boiler in accordance with the definition of "netting basis" in OAR 340-200-0020. If there are future modifications to the boiler, such as re-powering using fuels other than coal, the requested emissions associated with the modification will be compared to the netting basis in accordance with the definition of "major modification" in OAR 340-200-0020. If the requested emissions due to</i>

	<i>the modification are equal to or greater than a significant emission rate above the netting basis, the modification would be subject to PSD because the source will still be a federal major source by virtue of the co-located Carty Plant (permit pending). It would be physically impossible to re-power a boiler the size of the Foster-Wheeler boiler with any type of fuel without at least one criteria pollutant emissions greater than a significant emission rate. Therefore, repowering would be subject to PSD.</i>
7. Opposed to any plant closure	<p>a) Opposed to this rulemaking, and to any early closure of the plant.</p> <p>b) Coal burning is still a viable option and should not be eliminated</p>
<b>Response</b>	<ul style="list-style-type: none"> <li>As noted above, this rulemaking was triggered by a request from PGE for a rule change to reflect their desire for an early plant closure. This decision is being made by PGE and other co-owners of the plant, and will be subject to review by the Public Utilities Commission.</li> </ul>

<b>V. Other Comments and Issues Raised during this proposed rulemaking</b>	
1. PGE Boardman plant is health threat	a) PGE Boardman is a large source of mercury, toxic air pollutants, and other dangerous pollutants, which represent a serious threat to public health. DEQ should be addressing this as well as regional haze. It's time to move beyond coal and transition to cleaner energy source.
<b>Response</b>	a) <i>DEQ recognizes these concerns. While the Boardman plant is a major source of air pollutants, it is a permitted source, and as such is required to operate in compliance with established air quality health standards, which DEQ is responsible to enforce. The purpose of this rulemaking is to meet the requirements of the federal Regional Haze Rule, related to improving visibility in Class I areas. DEQ's Air Quality Division conducts other rulemakings directed at protecting public health and meeting the requirements of the Clean Air Act. It should be noted that if PGE does decide to close the plant early by a certain date, this will eliminate all of the plant's emissions, which will have public health benefits, and reduce acid deposition, greenhouse gases, and other air pollutants.</i>
2. Comments on DEQ's existing 2009 rules for PGE Boardman	a) DEQ should significantly strengthen the rules involving the "no closure option" (i.e., the existing 2009 rules). The NOx, SO2, and PM emission limits set forth in these rules do not reflect the best demonstrated system of continuous emission reduction that can be achieved at Boardman, and thus do not meet BART.
<b>Response</b>	a) <i>DEQ's existing regional haze rules that were adopted for the PGE Boardman plant in 2009 are not part of this rulemaking, and therefore DEQ is not seeking comment on these rules. Additionally, these comments were previously submitted by the commenter during the 2009 rulemaking (on Jan. 30, 2009) and were specifically addressed by DEQ at that time.</i>
3. PGE Boardman plant is out of	a) DEQ needs to take action to remedy the violation of the Clean Air Act, related to the failure to comply with New Source Performance Standards and

compliance	Prevention of Significant Deterioration requirements, including a Notice of Violation recently issued by EPA against the PGE Boardman plant
<b>Response</b>	<p>a) <i>The recent action taken by EPA involving the issuance of a Notice of Violation against the PGE Boardman plant is not related to this rulemaking.</i></p> <p>b) <i>DEQ acknowledges that there is a pending law suit with allegations that PGE has not complied with PSD and NSPS requirements that were applicable to the facility due to physical modifications in the past. More recently, EPA issued a Notice of Violation for not complying with the NSPS requirements due to physical changes in 1998 through 2004. Given the complexity of the factual and legal issues involved in resolving whether the Boardman facility undertook a modification or a series of modifications which triggered NSPS requirements, and given that these issues are being litigated in the case of Sierra Club, et al. v. PGE, Federal District Court for the District of Oregon, Case No. CV 08-1136 HA, DEQ declines to make a specific finding of non-applicability of any NSPS modification requirements.</i></p> <p><i>The issuance of an NOV by EPA is not, by itself, sufficient to demonstrate that the Boardman Plant is not in compliance with the Clean Air Act, pursuant to section 502(b)(2) of the Act. An NOV is an early step in the process for determining whether a violation has occurred, and is not a final EPA determination that a violation occurred. Likewise, as a legal matter it is not final agency action subject to judicial review. DEQ understands that EPA is still in the process of obtaining further information from PGE about whether a violation occurred. Therefore, DEQ lacks sufficient information at this point to reach a conclusion about whether PGE violated NSPS requirements. Like EPA, DEQ will consider additional information from PGE before reaching a conclusion.</i></p>
4. Adopt CO2 rules now	a) Climate change and greenhouse gases are the most important issue that DEQ should be addressing.
<b>Response</b>	a) <i>This rulemaking is not being proposed to adopt greenhouse gas limits or requirements for the Boardman plant, but rather meet federal requirements for BART.</i>
5. DEQ should not aggregate PGE Boardman impacts.	a) By stating that PGE Boardman impacts 14 Class I areas, DEQ is aggregating these impacts, which distorts and exaggerates the true impact on these areas.
<b>Response</b>	a) <i>DEQ does not intend to exaggerate the impacts of the Boardman Plant, but it is important to recognize that the Boardman Plant impacts numerous Class I areas. The purpose of the regional haze rules is to reduce the visibility impacts in all Class I areas, not just the one closest to a plant.</i>
6. Only DEQ has authority to determine BART.	a) Legally, DEQ not EPA has the authority to determine BART. EPA has a limited role.

<b>Response</b>	a) <i>EPA must take action on DEQ's regional haze plan, which must include a BART determination for affected facilities. EPA can disapprove the plan if it does not meet the requirements of the Clean Air Act.</i>
7. Issues with DEQ's BART analysis for the Boardman plant	<ul style="list-style-type: none"> <li>a) Costs associated with the BART control options have been overstated.</li> <li>b) The BART control options can achieve lower emission limits.</li> <li>c) DEQ's BART analysis fails to account for the cost of replacement power, should the plant close early.</li> <li>d) DSI is an unproven technology that has not been demonstrated for a plant with a boiler the size of the one at PGE Boardman. For that reason, it is neither technically feasible nor cost effective for BART. Also, it is reasonable to expect that the sorbent injection will trigger PSD for PM2.5, requiring additional controls.</li> <li>e) Using Indonesian coal to reduce SO2 emissions is neither technically feasible nor cost-effective for BART.</li> <li>f) DEQ's BART analysis failed to take into account the rate of progress at the 14 Class I areas within 300 kilometers of the Boardman plant.</li> <li>g) In the modeling, if SDFGD controls are compared to DSI, the visibility improvement is below 0.5 deciviews, which is not a perceptible change.</li> <li>h) DEQ's modeling of the PGE Boardman plant's visibility impacts is highly questionable. The modeling results are not credible.</li> <li>i) The visibility improvement needs to be documented for all the affected Class I areas.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>a) <i>DEQ disagrees. DEQ was concerned with PGE's cost estimates when evaluating their BART analysis for the rules adopted in 2009 because PGE concluded that selective catalytic reduction was not cost effective for BART. As a result, DEQ contracted with ERG to evaluate the cost of selective catalytic reduction. ERG concluded that the tools usually used to estimate costs (e.g., CUE Cost and EPA's Cost Manual) underestimated real world costs. ERG further concluded that PGE's cost estimates were within the range of real world costs, albeit at the high end of the range. Although DEQ did not request ERG to specifically evaluate PGE's cost estimates for SDFGD, DEQ assumed that the real world costs for SDFGD would also be higher than estimates obtained from the usual cost estimation tools. The overall cost estimate using ERG's estimates was about 11 percent less than PGE's cost estimate. Due to the uncertainties associated with the cost estimates, DEQ decided to use PGE's cost estimates. The cost estimates for the 2009 rules were based on 2007 dollars. PGE adjusted the costs to 2010 dollars using a factor of 9.2 percent for the three year period. DEQ received a comment that the adjustment factor should only be 5.9 percent. DEQ acknowledges this discrepancy, but does not believe that a correction of 3.3 percent would change the BART conclusions.</i></li> <li>b) <i>As noted in Section 1 of this document, DEQ received several comments that selective catalytic reduction and SDFGD can achieve lower emission rates than proposed by DEQ. If the control effectiveness were based on lower limits, there would be more emission reductions and the controls might be considered cost effective even if the plant were to shutdown on 12/31/20. The requests for using lower limits for the control technologies (~0.05 vs. 0.07</i></li> </ul>

*lb/mmBtu for selective catalytic reduction and ~0.09 vs. 0.12 lb/mmBtu for SDFGD) are based on actual emissions data from other coal-fired plants, as well as permit limits in recently issued permits for new sources. DEQ agrees that in some cases the controls can achieve lower emissions than the limits used in the BART analysis. In fact, DEQ expects that the actual emissions will be less than the limits because the source would otherwise be out of compliance. DEQ does not believe that the actual emissions of other plants justifies establishing lower limits considering normal process and control device variables. DEQ believes that it is important to establish a limit that will require at least the type of control being considered in the BART analysis, but can be met at all times provided the controls are operated properly. DEQ does not believe a limit should be established that can be met only part of the time under ideal conditions. DEQ also believes it is not appropriate to use emission limits established for new sources for retrofit technologies; especially if it has not been demonstrated that the sources can actually meet the limit. Controls for new sources are an integral part of the design and should be able to achieve slightly lower limits.*

- c) DEQ agrees. The BART determination includes an analysis of the cost of compliance, energy impacts, non-air quality environmental impacts, and the remaining useful life of the plant. The BART guidelines specify that “the analysis should focus on the direct impact of the control alternative.” [BART guidelines III.Step 4]*
- d) DEQ disagrees. DSI is a proven technology that is feasible for the Boardman plant. DEQ agrees that there are potential side effects that need to be evaluated before establishing a firm limit for DSI.*
- e) DEQ agrees that using Indonesian coal may not be feasible at this time. However, it is possible that coal from the western US may be shipped to other countries from western ports in the future. If the infrastructure is developed to ship coal out of the country, it is possible that coal could be shipped into the country using the same infrastructure.*
- f) The rate of progress in the Mt. Hood Wilderness area as a result of the proposed BART requirements for the Boardman plant will be approximately 1.44 dv on 7/1/11, 2.41 dv on 7/14, 2.75 dv on 7/1/18, and 4.98 dv on 12/31/20.*
- g) DEQ agrees that SDFGD only provides about 0.4 dv improvement over DSI in 2014, assuming that the DSI system can meet a limit of 0.40 lb/mmBtu. In addition, DEQ has determined that the incremental cost of SDFGD over DSI is nearly \$7,300/ton. For these reasons, DEQ does not believe SDFGD is BART if the plant closes on 12/31/2020 and DSI is installed and operated from 7/1/14 through 12/31/20.*
- h) DEQ and PGE conducted modeling in accordance with a modeling protocol developed and approved in corroboration with EPA, the National Park System, US Forest Service, Washington DOE, and Idaho DEQ. Air dispersion modeling is a tool for estimating the impacts of sources and tends to be conservative. The model uses actual meteorological data from the period of 2003 through 2005. Haze in the Columbia River Gorge and Class I areas has been documented with actual monitoring data.*
- i) DEQ has conducted additional modeling. The results of the modeling for each Class I area are provided in Table 10.5.1-2 under Section 10.5.1, Chapter 10,*

	<i>of DEQ's revised 2009 Oregon Regional Haze Plan.</i>
8. BART is not "all or nothing"	a) The regional haze BART requirements was never intended to be an all-or-nothing approach forcing plant closures or intended to apply control technology considerations similar to MACT.
<b>Response</b>	a) <i>DEQ agrees. BART requirements are intended to achieve emission reductions and visibility improvement based on an analysis of available controls. They were not intended to close down a plant. However, PGE has requested that the remaining useful life of the plant be considered in the BART determination process. For this to be possible, the remaining useful life of the plant must be federally enforceable. PGE has decided to close the plant, not DEQ. The rules adopted in 2009 did not include a closure date for the plant.</i>
9. Hold local meeting before adopting rules.	a) It is vital that meetings be held in both Morrow and Umatilla Counties before a final decision is made. It is important to understand the impact in these areas.
<b>Response</b>	a) <i>DEQ agrees on the importance of holding local meetings, and for that reason held two of the public hearings in this area – one in Hermiston, and one in Boardman. These hearings allowed local citizens to voice their concerns about the possible closure of PGE Boardman plant, and DEQ's proposed rule options related to this decision by PGE. At the beginning of each hearing, DEQ presented information on this proposed rulemaking, and participated in a question and answer discussion prior to accepting public testimony. The comments DEQ received at these public hearings expressed many of the concerns of local residents about the impact of this rulemaking. DEQ is carefully considering all of the comments submitted in making its final recommendation on this rulemaking to the EQC.</i>
10. Keep the plant open through 2040	a) PGE Boardman provides cheap electrical power and jobs. Do not close the plant by 2020. It should be kept open until at least 2040. b) Given the current economy, please do not impose expensive and burdensome regulations on PGE. This especially affects the jobless, elderly, and the poor.
<b>Response</b>	• <i>DEQ agrees that the Boardman plant currently provides cheap and reliable power. A decision to close the plant can only be made by PGE, not DEQ. Consistent with this, DEQ has proposed rule changes with less expensive controls, which contain early closure date options for PGE. PGE could also continue to operate the plant if they so choose.</i>
11. DEQ's reasonable progress demonstration	a) In the Oregon 2009 Regional Haze Plan, DEQ's reasonable progress demonstration shows a slower rate of progress than what is needed to attain natural conditions in 2064. Under federal rules, DEQ needs to show that the 2064 target is not reasonable.
	a) <i>Oregon's haze plan does not assert the 2064 glideslope or target is "not reasonable." In fact, DEQ maintains that rate of progress identified in the plan to attain natural conditions in 2064 is reasonable. DEQ notes that it would be</i>



	<i>premature to reject or replace the 2064 glideslope to reach natural conditions just because initial projections for the worst 20 percent days in the first haze plan were less than the 2018 milestone. The next plan update in 2013 will contain several work products that are likely to provide additional emission reductions needed for reasonable progress. In addition, revisions to Oregon's regional haze plan based on this rulemaking do acknowledge the PGE Boardman emission reductions after 2018, which could be considerable, as part of the reasonable progress demonstration in the plan.</i>
12. Comments on coal burning	<ul style="list-style-type: none"> <li>a) Coal contributes to four of the five leading causes of mortality in the US – heart disease, cancer, stroke, and COPD. DEQ should consult regularly with the Center for Research on Occupational and Environmental Toxicology at OHSU and the Department of Environmental and Molecular Toxicology at OSU.</li> <li>b) Oregon should be coal-free.</li> <li>c) Clean coal does not exist.</li> <li>d) Coal is plentiful and very economical compared to other fuels, and is reliable for base load applications. Emissions from coal burning can be effectively controlled.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>• <i>DEQ agrees there are other cleaner sources of electricity than coal, such as natural gas, wind, and solar energy. Decisions regarding the future of coal use, or the continued operation of the PGE Boardman plant, are beyond the scope of this rulemaking.</i></li> </ul>

## VI. Miscellaneous Comments

<ul style="list-style-type: none"> <li>• There is no credible evidence that regional haze is a problem, or that the Boardman plant is causing haze problems.</li> </ul>
<ul style="list-style-type: none"> <li>• Replacing the Boardman coal plant with biomass combustion is just as bad as coal, in terms of carbon emissions and contributing to global warming.</li> </ul>
<ul style="list-style-type: none"> <li>• The 2020 closure date allows sufficient time to evaluate a different fuel source such as biomass.</li> </ul>
<ul style="list-style-type: none"> <li>• DEQ should conduct more monitoring of priority pollutants, visibility, and mercury, so that data can be properly shared and analyzed.</li> </ul>
<ul style="list-style-type: none"> <li>• PGE Boardman has been operating for far too long without any pollution controls, and causing impacts on public health. Enough is enough. The plant should be closed as soon as possible.</li> </ul>
<ul style="list-style-type: none"> <li>• Aggressive action is needed to pursue energy conservation and energy efficiency programs.</li> </ul>
<ul style="list-style-type: none"> <li>• Replacing the Boardman coal plant with a natural gas plant just replaces one type of pollution with another.</li> </ul>
<ul style="list-style-type: none"> <li>• Electricity costs are going up because of regulations like this. Nuclear power and increased use of hydroelectric power should be pursued.</li> </ul>
<ul style="list-style-type: none"> <li>• DEQ is not adequately considering the well-being of the state's manufacturing sector in requiring unnecessary controls which will drive up operational costs for the state's remaining manufacturing base. DEQ should adopt rules that inflict the least cost to Oregon's ailing economy and minimizes further job loss.</li> </ul>
<ul style="list-style-type: none"> <li>• Further investment in coal will prevent us from meeting state climate goals</li> </ul>

<ul style="list-style-type: none"> <li>Regulations on climate change are currently being developed, and reducing Boardman plant's greenhouse gas emissions is therefore important.</li> </ul>
<ul style="list-style-type: none"> <li>PGE should develop a plan for closing the Boardman plant as soon as possible, and develop a long-range master plan for transitioning into more energy conservation and renewable energy.</li> </ul>
<ul style="list-style-type: none"> <li>The PGE Boardman plant is a critical base load facility, and as such is a key source of reliable energy. It is important to provide enough time to replace such energy generation for overall grid reliability, especially as we transition to more renewable generation sources.</li> </ul>
<ul style="list-style-type: none"> <li>I believe in global liberation</li> </ul>

## List of People and Organizations Submitting Comments

### Public Comments from first Comment Period 9/1/10 to 10/1/10

#### Letters

Letters include written comments received by mail, at public hearings, and attached to emails. Does not include attachments (see footnote <sup>2</sup>)

No.	Name	Location	Affiliation or Organization	Submit Date
1.	Arya Behbehani <sup>2</sup> Manager, Environmental Services	Portland	Portland General Electric Company	9/08/2010 10/01/2010
2.	Catherine Collins	Gresham		9/11/2010
3.	Keith Mays, Mayor	Sherwood	City of Sherwood	9/14/2010
4.	Andy Duyck Washington County Commissioner, District 4	Hillsboro	Washington County Board of County Commissioners	9/15/2010
5.	Denny Doyle, Mayor	Beaverton	City of Beaverton	9/15/2010
6.	Steve and Patricia Mosbacher	Beaverton		9/15/2010
7.	Craig E. Dirksen, Mayor	Tigard	City of Tigard	9/16/2010
8.	Pat Shaw Gilliam County Judge	Condon	Gilliam County	9/20/2010
9.	Martin Donohoe, MD	Portland		9/21/2010
10.	Jonathan Schlueter Executive Director	Tigard	Westside Economic Alliance	9/21/2010
11.	Elizabeth B. Kaplan	Portland		9/21/2010
12.	Bernie Bottomly	Portland	Portland Business Alliance	9/21/2010
13.	Maye Thompson	Portland	OR Physicians for Social Responsibility	9/21/2010
14.	Borden Beck	Portland		9/21/2010
15.	Caitlin Piserchia	Portland		9/21/2010
16.	Louise Waitt	Portland		9/21/2010
17.	Andrew Sherman	Vancouver		9/21/2010
18.	Tom Stodd	Portland		9/22/2010
19.	Stephen M. Amy Robin Bloomgarden	Beaverton		9/22/2010

20.	Casey Gifford	Eugene		9/23/2010
21.	Katie Taylor	Eugene		9/23/2010
22.	Enid Griffin	Portland		9/24/2010
23.	Mary Wagner <sup>2</sup> Regional Forester	Portland	U.S. Forest Service Pacific Northwest Region	9/27/2010
24.	Joanne Delmonico	Portland		9/27/2010
25.	Lorraine Heller Sandy Sieglinger	Portland		9/27/2010
26.	David Sykes, President	Heppner	Willow Creek Valley Economic Development Group	9/27/2010
27.	Claire Sponseller Lisanne Currin Sheryll Bates	Heppner	Heppner Chamber of Commerce	9/27/2010
28.	Elwood Patawa, Chairman	Pendleton	Confederated Tribes of the Umatilla Indian Reservation	9/28/2010
29.	Rodney B. Mruk Reverend	Hermiston Pendleton	Trinity Evangelical Lutheran Church Faith Lutheran Church	9/28/2010
30.	Beth Anderson	Molalla		9/28/2010
31.	anonymous	n/a		9/28/2010
32.	W. Lawrence Givens, Commissioner Terry K. Tallman, Judge	Pendleton Heppner	Umatilla County Morrow County	9/28/2010
33.	Terry K. Tallman, Judge	Heppner	Morrow County	9/28/2010
34.	Barry C. Beyeler, Community Development Director	Boardman	City of Boardman	9/28/2010
35.	Pamela Barrow	Portland	Northwest Food Processors Association	9/29/2010
36.	Lou Ogden, Mayor	Tualatin	City of Tualatin	9/29/2010
37.	Gary Thompson, Sherman County Judge	Moro	Sherman County	9/29/2010
38.	Janet Taylor, Mayor	Salem	City of Salem	9/29/2010
39.	Ron Fox Executive Director	Medford	SOREDI (Southern Oregon Regional Economic Development, Inc.)	9/29/2010
40.	Chet Phillips, Mayor	Boardman	City of Boardman	9/29/2010
41.	Jurgen A. Hess	Hood River		9/30/2010
42.	Jill Arens Executive Director	White Salmon, WA	Columbia River Gorge Commission	9/30/2010
43.	Marcy Putman	Portland	International Brotherhood of Electrical Workers, Local 125	9/30/2010
44.	Jeanne E. Burch Wheeler County Judge	Fossil	Wheeler County	9/30/2010
45.	Corky Collier Executive Director	Portland	Columbia Corridor Association	9/30/2010
46.	Pam Gilmer President	Portland	The Mazamas	9/30/2010
47.	Sam Adams, Mayor	Portland	City of Portland	9/30/2010
48.	John Ledger Vice President	Salem	Associated Oregon Industries	9/30/2010
49.	Brian Pasko Michael Lang Mark Riskedahl Lauren Goldberg Brian Kelly Brock Howell	Portland, other	Sierra Club, Oregon Chapter Friends of the Columbia Gorge Northwest Environmental Defense Center Columbia Riverkeeper Hells Canyon Preservation Council Environment Oregon	10/01/2010
50.	Andrea Durbin	Portland	Oregon Environmental Council	10/01/2010

	Executive Director			
51.	Eric Chung	Portland	PacifiCorp	10/01/2010
52.	Bob Jenks Executive Director	Portland	Citizens Utility Board of Oregon	10/01/2010
53.	Kevin Lynch <sup>2</sup> Stephanie Kodish	Boulder, CO Knoxville, TN	Environmental Defense Fund National Parks Conservation Association	10/01/2010
54.	John Bunyak <sup>2</sup> Acting Chief, Air Resources Division	Denver, CO	National Park Service	10/01/2010
55.	Richard Albright Director	Seattle, WA	EPA Region 10	10/01/2010
56.	Mike McArthur Executive Director	Salem	Association of Oregon Counties	10/01/2010
57.	Kathleen F. Martin	The Dalles		10/01/2010
58.	Mary J. Repar	Stevenson, WA		10/01/2010
59.	Tom Ivancie	Portland	Energy Action Northwest	10/01/2010
60.	Steven Weiss	Seattle, WA	NW Energy Coalition	10/01/2010
61.	Rachel Shimshak Executive Director	Portland	Renewable Northwest Project	10/01/2010
62.	William L. Kovacs	Washington D.C.	Chamber of Commerce of the United States of America	10/01/2010
63.	Angus Duncan, Chair	Salem	Oregon Global Warming Commission	10/01/2010
64.	Kathryn VanNatta	Mercer Island, WA	Northwest Pulp & Paper Association	10/01/2010
65.	Manuel Castaneda President	Hillsboro	Washington County Business Council	10/01/2010
66.	Terry K. Tallman, Judge Ken A. Grieb, Commissioner Leann Rea, Commissioner	Heppner	Morrow County	10/01/2010
67.	Joan Barton	Portland		10/01/2010
68.	Form Letter 1 (189) <sup>3</sup>	n/a	Sierra Club members	9/21/2010
69.	Form Letter 2 (36) <sup>3</sup>	n/a		9/27/2010
70.	Form Letter 3 (25) <sup>3</sup>	n/a	Sierra Club members	10/01/2010
71.	Form Letter 4 (38) <sup>3</sup>		Misc. local government, chambers of commerce, and businesses	10/01/2010
72.	Form Letter/postcard 1 (2396) <sup>3</sup>	n/a		9/01/2010 to 10/01/2010
73.	Form Letter/postcard 2 (155) <sup>3</sup>	n/a		9/01/2010 to 10/01/2010
<b>Oral Testimony</b>				
Location represents the site of the public hearing. Those who provided written comments are noted with *. To avoid duplication, those who provided both oral and written comments, priority was given referencing the written comments, rather than the oral testimony. Those who testified are more than one hearing are noted with +. For additional information, see Attachment C "DEQ Hearing Officer's Report on Public Hearings."				
74.	Arya Behbehani * +	Portland	Portland General Electric Company	9/21/2010
75.	Jay Dudley * +	Portland	Portland General Electric Company	9/21/2010
76.	Dave Robertson * +	Portland	Portland General Electric Company	9/21/2010
77.	Wilda Parks	Portland	N.Clackamas Co. Chamber of Commerce	9/21/2010
78.	Nick Engelfried +	Portland	private citizen	9/21/2010
79.	John Maloney	Portland	private citizen	9/21/2010
80.	Margo Bryant	Portland	Portland General Electric Company	9/21/2010

81.	Larry Givens * +	Portland	Umatilla County Commissioner	9/21/2010
82.	Nancy Hatch	Portland	private citizen	9/21/2010
83.	Bernie Bottomly *	Portland	Portland Business Alliance	9/21/2010
84.	Corky Collier *	Portland	Columbia Corridor Association	9/21/2010
85.	Travis Stovall	Portland	East Metro Economic Alliance	9/21/2010
86.	Jason Brandt	Portland	Salem Chamber of Commerce	9/21/2010
87.	Joe Esmonde	Portland	IBEW Local 48	9/21/2010
88.	John Mohlis	Portland	Columbia Pacific Building Trades Council	9/21/2010
89.	Jonathon Schlueter *	Portland	Westside Economic Alliance	9/21/2010
90.	Debbie Kitchen	Portland	Inter Works	9/21/2010
91.	Mike Holcomb	Portland	small business owner	9/21/2010
92.	Denzel Scheller	Portland	Hillsboro Chamber of Commerce	9/21/2010
93.	Manuel Castaneda	Portland	small business owner	9/21/2010
94.	Tom Wood	Portland	Associated Oregon Industries	9/21/2010
95.	Wayne Lei	Portland	private citizen	9/21/2010
96.	Andree Yost	Portland	Portland General Electric Company	9/21/2010
97.	Elizabeth Kaplan *	Portland	private citizen	9/21/2010
98.	Rodger Winn	Portland	Sierra Club	9/21/2010
99.	Vern Groves	Portland	private citizen	9/21/2010
100.	Roger Cole	Portland	Sierra Club	9/21/2010
101.	Robin Everett	Portland	Sierra Club	9/21/2010
102.	Robin Fahy	Portland	student	9/21/2010
103.	Katie Kann	Portland	student	9/21/2010
104.	Tyler Gerlach	Portland	student	9/21/2010
105.	Geoff Guillory	Portland	student	9/21/2010
106.	Maye Thompson *	Portland	OR Physicians for Social Responsibility	9/21/2010
107.	Antonio Samora	Portland	private citizen	9/21/2010
108.	Erika Winters	Portland	Greenpeace	9/21/2010
109.	Alyssa Ransbury	Portland	Greenpeace	9/21/2010
110.	Christopher Froman	Portland	Greenpeace	9/21/2010
111.	Anna Sotia Gidlund	Portland	Greenpeace	9/21/2010
112.	David Pfosr	Portland	Sierra Club	9/21/2010
113.	Wesley Kempler	Portland	Sierra Club	9/21/2010
114.	Cesia Kearns	Portland	private citizen	9/21/2010
115.	Fred Heutte	Portland	Sierra Club & small business owner	9/21/2010
116.	John Steele	Eugene	Friends of Dorena Dam Habitat	9/23/2010
117.	Katie Taylor *	Eugene	OSPIRG	9/23/2010
118.	Casey Gifford *	Eugene	Climate Justice League	9/23/2010
119.	Emma Newman	Eugene	Climate Justice League	9/23/2010
120.	Dave Hauser	Eugene	Oregon State Chamber of Commerce	9/23/2010
121.	Kathy Ging	Eugene	private citizen	9/23/2010
122.	Arya Behbehani +	Eugene	Portland General Electric Company	9/23/2010
123.	Amy Krol	Eugene	student	9/23/2010
124.	Chet Phillips +	Eugene	Mayor, City of Boardman	9/23/2010
125.	Ariel McCoy	Eugene	OSPIRG	9/23/2010
126.	Sania Radcliffe	Eugene	Portland General Electric Company	9/23/2010
127.	Catherine Thomasson	Eugene	OR Physicians for Social Responsibility	9/23/2010
128.	Kylie Halloran	Eugene	Sierra Club	9/23/2010
129.	Nick Engelfried +	Eugene	private citizen	9/23/2010
130.	David Besonon	Eugene	small business owner	9/23/2010
131.	David Nelson	Hermiston	State Senator, District 29	9/28/2010
132.	Bob Jenson	Hermiston	State Representative, District 58	9/28/2010
133.	Terry Tallman * +	Hermiston	Morrow County Judge	9/28/2010

134.	Larry Givens * +	Hermiston	Umatilla County Commissioner	9/28/2010
135.	Chet Phillips * +	Hermiston	Mayor, City of Boardman	9/28/2010
136.	Karen Wolff	Hermiston	Morrow County resident	9/28/2010
137.	Arya Behbehani +	Hermiston	Portland General Electric Company	9/28/2010
138.	Bill Nicholson	Hermiston	Portland General Electric Company	9/28/2010
139.	Diane Wolfe	Hermiston	Boardman Chamber of Commerce	9/28/2010
140.	Rick Main	Hermiston	IBEW Local 125	9/28/2010
141.	Sheryll Bates	Hermiston	Heppner Chamber of Commerce	9/28/2010
142.	Karen Pettigrew	Hermiston	City of Boardman	9/28/2010
143.	Steve Eldrige	Hermiston	Umatilla Electrical Cooperative	9/28/2010
144.	Chuck Little +	Hermiston	Pendleton Building Trades	9/28/2010
145.	Randy Yates	Hermiston	private citizen	9/28/2010
146.	Rod Osgood	Hermiston	IUOE Local 701	9/28/2010
147.	John Edmundson	Hermiston	Heppner Chamber of Commerce	9/28/2010
148.	Gary Neal	Hermiston	Port of Morrow	9/28/2010
149.	Debbie Pedro	Hermiston	Hermiston Chamber of Commerce	9/28/2010
150.	Tamra Mabbott	Hermiston	Umatilla County Planning Dept.	9/28/2010
151.	Don Anderson	Hermiston	NAES Power Contractors	9/28/2010
152.	David Richards	Hermiston	Boardman resident	9/28/2010
153.	Bill Hoke	Medford	City of Medford	9/29/2010
154.	Ray Hendricks * +	Medford	Portland General Electric Company	9/29/2010
155.	Ron Fox *	Medford	SORED I	9/29/2010
156.	Monte Mendenhall	Medford	Pacific Power	9/29/2010
157.	Deane Funk	Medford	Portland General Electric Company	9/29/2010
158.	Sarah Westover	Medford	Beyond Coal Campaign	9/29/2010
159.	Meryl Six	Medford	Cascade Climate Network/Beyond Coal	9/29/2010
160.	Steve Vincent	Medford	Avista Utilities	9/29/2010
161.	Benji Nagel	Medford	student	9/29/2010
162.	Ted Ferrioli	The Dalles	State Senator, District 30	9/30/2010
163.	John Huffman	The Dalles	State Representative, District 59	9/30/2010
164.	Terry Tallman * +	The Dalles	Morrow County Judge	9/30/2010
165.	Larry Givens * +	The Dalles	Umatilla County Commissioner	9/30/2010
166.	Ray Hendricks * +	The Dalles	Portland General Electric Company	9/30/2010
167.	Jay Dudley +	The Dalles	Portland General Electric Company	9/30/2010
168.	Dave Robertson +	The Dalles	Portland General Electric Company	9/30/2010
169.	Dale Coyle	The Dalles	Portland General Electric Company	9/30/2010
170.	John McClain	The Dalles	Portland General Electric Company	9/30/2010
171.	Chuck Little +	The Dalles	Pendleton Building Trades	9/30/2010
172.	Barry Beyeler *	The Dalles	City of Boardman	9/30/2010
173.	Daniel Spatz	The Dalles	Columbia Gorge Community College	9/30/2010
174.	Paul Woodin	The Dalles	Community Renewable Energy Assoc.	9/30/2010
175.	Peter Cornelison	The Dalles	Friends of the Columbia Gorge	9/30/2010
176.	John Wood	The Dalles	private citizen	9/30/2010
177.	Mary Repar *	The Dalles	private citizen	9/30/2010
178.	Tom Wood	The Dalles	private citizen	9/30/2010
179.	John Nelson	The Dalles	private citizen	9/30/2010
180.	Tom Ivancie *	The Dalles	Energy Action NW	9/30/2010
181.	Jurgen Hess *	The Dalles	private citizen	9/30/2010
182.	Dave Berger	The Dalles	private citizen	9/30/2010

#### Emails

Those who provided written testimony along with an email are listed above under letters.

183.	Aaron Douglas		9/7/2010
184.	Andy Palmer		9/21/2010
185.	Anita Morrison		9/9/2010
186.	Audie Huber		9/28/2010
187.	Bill and Lucy Kimbro		9/2/2010
188.	Bill Lonerman		9/9/2010
189.	Chris Cook		9/4/2010
190.	Chuck Little		9/3/2010
191.	Craig Smith		9/17/2010
192.	Curtis Cutsforth		9/1/2010
193.	Dan Jaffee		9/1/2010
194.	Dave Vanderzanden		9/21/2010
195.	David and Patti Lane		9/23/2010
196.	David Shapiro		9/17/2010
197.	Denis Mososwski		9/2/2010
198.	Denise Steffenhagen		9/1/2010
199.	Diane Winn		9/22/2010
200.	Don Scholter		9/3/2010
201.	E. Marlow		9/6/2010
202.	Ed Berg		9/1/2010
203.	Ellyne Kutschera		9/17/2010
204.	Garey Kurtz		9/8/2010
205.	Gerald Waters		9/1/2010
206.	Greg Debros		9/21/2010
207.	Iriana Phillips		9/22/2010
208.	Harry Shaich		9/23/2010
209.	Jim Conroy		9/18/2010
210.	Jodi Miller		9/2/2010
211.	John Denton		9/1/2010
212.	Judi L. Baker		9/2/2010
213.	Keith and Karen Harding		9/18/2010
214.	Kevin Horan		9/29/2010
215.	Linda Cate		9/30/2010
216.	Lisa Caballery		9/28/2010
217.	L J Ross		9/29/2010
218.	Lowrey Brown		9/20/2010
219.	Margaret Davies		9/21/2010
220.	Marilyn Burke		9/1/2010
221.	Mike Litt		9/2/2010
222.	Nicholas Loos		9/22/2010
223.	Nicholas Page		9/7/2010
224.	Pam Barrow		9/29/2010
225.	Randall Webb		9/8/2010
226.	Sara W. Baker		9/11/2010
227.	Shane Dugherty		9/1/2010
228.	Shirley Cereghino		9/27/2010
229.	Stuart Phillips		9/1/2010
230.	Tanya Baikow-Smith		9/27/2010
231.	W. Badrick		9/1/2010
<b>232.</b>	Email form letter 1 - (244) <sup>3</sup>		9/01/2010 to 10/01/2010
<b>233.</b>	Email form letter 2 - (5) <sup>3</sup>		9/01/2010 to 10/01/2010

234.	Email form letter 3 - (63) <sup>3</sup>			9/01/2010 to 10/01/2010
235.	Email form letter 4 - (140) <sup>3</sup>			9/01/2010 to 10/01/2010
<b>Public Comments from second Comment Period 10/29 to 11/15</b>				
<b>Letters</b>				
Letters includes written comments received by mail, at public hearings, and attached to emails. Does not include attachments (see footnote <sup>2</sup> )				
No.	Name	Location	Affiliation or Organization	Submit Date
236.	Nicole Forbes	Portland	Friends of the Columbia Gorge	11/8/2010
237.	Kyle Gorman	Milwaukie	Clackamas Fire District #1	11/8/2010
238.	Maye Thompson	Portland	OR Physicians for Social Responsibility	11/8/2010
239.	Stephen M. Amy	Beaverton		11/11/2010
240.	Steven Quennoz <sup>2</sup> Vice President, Power Supply/Generation	Portland	Portland General Electric Company	11/15/2010
241.	Brian Pasko Mark Riskedahl Michael Lang Greg Dyson Maye Thompson Bret VandenHeuvel Steve Pedery Brent Fenty Josh Laughlin Mary Preveto Lisa Arkin	Portland, and other	Sierra Club, Oregon Chapter Northwest Environmental Defense Center Friends of the Columbia Gorge Hells Canyon Preservation Council OR Physicians for Social Responsibility Columbia Riverkeeper Oregon Wild Oregon Natural Desert Association Cascadia Wildlands Project Neighbors for Clean Air Oregon Toxics Alliance	11/15/2010
242.	Rick Till	Portland	Native Plant Society of Oregon	11/15/2010
243.	John Bunyak <sup>2</sup> Acting Chief, Air Resources Division	Denver, CO	National Park Service	11/15/2010
244.	Arya Behbehani	Portland	Portland General Electric Company	11/15/2010
245.	Andrea Durbin Executive Director	Portland	Oregon Environmental Council	11/15/2010
246.	Keith Rose	Seattle WA	EPA Region 10	11/15/2010
247.	Terry K. Tallman, Judge Ken A. Grieb, Commissioner Leann Rea, Commissioner	Heppner	Morrow County	11/15/2010
248.	Janette K. Brimmer Aubrey Balwin		Earthjustice on behalf of Sierra Club Pacific Environmental Advocacy Center, on behalf of Sierra Club, Northwest Environmental Defense Center, Friends of the Columbia Gorge, Columbia Riverkeepers, and Hells Canyon Preservation Council	11/15/2010
249.	Lucy Roberts	n/a		11/15/2010
250.	Emily Tuchman	Portland		11/15/2010
251.	Lauren Reiterman	Portland		11/15/2010
252.	Hillary Patin	Portland		11/15/2010



253.	Miriam Coe	Portland		11/15/2010
254.	Tom Lang	Portland		11/15/2010
255.	Barbara Robinson	Mosier		11/15/2010
256.	Form Letter 1 <sup>3</sup> (118)	n/a		11/8/2010
257.	Form Letter/postcard 1 (238) <sup>3</sup>	n/a		9/01/2010 to 10/01/2010
258.	Form Letter/postcard 2 (1928) <sup>3</sup>	n/a		9/01/2010 to 10/01/2010
259.	Form Letter/postcard 3 (11) <sup>3</sup>	n/a		9/01/2010 to 10/01/2010

### Oral Testimony

Location represents the site of the public hearing. Those who provided written comments are noted with \*. To avoid duplication, those who provided both oral and written comments, priority was given referencing the written comments, rather than the oral testimony. Those who testified are more than one hearing are noted with +. For additional information, see Attachment C "DEQ Hearing Officer's Report on Public Hearings."

260.	Dave Robertson +	Portland	PGE	11/8/2010
261.	Wendi Eiland	Portland	Beverton Chamber of Commerce	11/8/2010
262.	Marcy Putman	Portland	IBEW Local 125	11/8/2010
263.	Kristan Sheeran, Phd	Portland	Economics for Equity and Environment Network	11/8/2010
264.	Erika Winters-Heilman	Portland	Private citizen	11/8/2010
265.	Kaician Kitko	Portland	Private citizen	11/8/2010
266.	Kyle Gorman *	Portland	Clackamas county Fire District #1	11/8/2010
267.	Linda Moholt	Portland	Tualatin Chamber of Commerce	11/8/2010
268.	Jay Halladay	Portland	Coaxis	11/8/2010
269.	Mark Clemons	Portland	Group MacKenzie	11/8/2010
270.	Samantha Cummings	Portland	Private citizen	11/8/2010
271.	Jon Pauletto	Portland	Private citizen	11/8/2010
272.	Adam Walters	Portland	Student	11/8/2010
273.	Trevor Griffith	Portland	Private citizen	11/8/2010
274.	Robin Everett	Portland	Sierra Club	11/8/2010
275.	Sofia Gidlund	Portland	Greenpeace	11/8/2010
276.	Elizabeth Kaplan	Portland	Private citizen	11/8/2010
277.	Geoff Guillory	Portland	Private citizen	11/8/2010
278.	Roger Cole	Portland	Sierra Club	11/8/2010
279.	Liam Doherty-Nicholson	Portland	Greenpeace	11/8/2010
280.	Bob Jenks *	Portland	Citizen Utility Board	11/8/2010
281.	Jason Lehne	Portland	Foundation Life Management	11/8/2010
282.	Angi Dilkes *	Portland	Oregon Business Association	11/8/2010
283.	Caitlin Piserchia	Portland	Private citizen	11/8/2010
284.	Cesia Kearns	Portland	Private citizen	11/8/2010
285.	Duncan Reid	Portland	Private citizen	11/8/2010
286.	Nathan Jones	Portland	Private citizen	11/8/2010
287.	Alden Moss	Portland	Private citizen	11/8/2010
288.	Jenny Bedell-Stiles	Portland	Private citizen	11/8/2010
289.	NickEngelfried	Portland	Private citizen	11/8/2010
290.	Maye Thompson	Portland	OR Physicians for Social Responsibility	11/8/2010
291.	Daniel Cobb	Portland	Private citizen	11/8/2010
292.	Nancy Hatch	Portland	Private citizen	11/8/2010
293.	Antonio Zamora	Portland	Greenpeace	11/8/2010
294.	Bill Bigelow	Portland	Private citizen	11/8/2010

295.	Borden Beck	Portland	PGE customer	11/8/2010
296.	Tom Wood	Portland	Associate Oregon Industries	11/8/2010
297.	Mathilde Mouw	Portland	Student	11/8/2010
298.	Joel Durr	Portland	Private citizen	11/8/2010
299.	Natasha Hultmann	Portland	Private citizen	11/8/2010
300.	Tom Ivancie	Portland	Energy Action Northwest	11/8/2010
301.	Terry Tallman	Boardman	Morrow County Judge	11/9/2010
302.	Chet Phillips	Boardman	Mayor, City of Boardman	11/9/2010
303.	Dave Robertson	Boardman	Portland General Electric Company	11/9/2010
304.	Barry Beyeler	Boardman	City of Boardman	11/9/2010
305.	Rick Main	Boardman	IBEW Local 125	11/9/2010
306.	Marcy Putman	Boardman	IBEW Local 125	11/9/2010
307.	Sheryll Bates	Boardman	Heppner Chamber of Commerce	11/9/2010
308.	Diane Wolfe	Boardman	Boardman Chamber of Commerce	11/9/2010
309.	Steve Doherty	Boardman	Private Citizen	11/9/2010
310.	Chuck Little	Boardman	Pendleton Building Trades	11/9/2010
311.	Dave De Mayo	Boardman	City of Heppner	11/9/2010
312.	Karen Pettigrew	Boardman	City of Boardman	11/9/2010
313.	Karen Wolff	Boardman	Morrow County resident	11/9/2010
314.	Randal Curtis	Boardman	Private Citizen	11/9/2010
315.	Don Russell	Boardman	Private Citizen	11/9/2010
316.	Gary Neal	Boardman	Port of Morrow	11/9/2010
317.	Jody Marston	Boardman	Private Citizen	11/9/2010

#### Emails

Those who provided written testimony along with an email are listed above under letters.

318.	Alyssa Ransbury			11/15/2010
319.	Andrew			11/6/2010
320.	Brad Mattison			11/10/2010
321.	Carol Crawford			11/13/2010
322.	Charles Little			n/a
323.	Cheryl McEvoy			11/15/2010
324.	Christa Sprinkle			11/12/2010
325.	Clay Spencer			10/31/2010
326.	Curtis French			11/14/2010
327.	Dan Huntington			11/15/2010
328.	Darryl Lloyd			11/13/2010
329.	Darvel Lloyd			11/12/2010
330.	Dave Mull			11/9/2010
331.	Deb Hupcey			11/12/2010
332.	Donn Chalfant			10/30/2010
333.	Ellen Cantwell			11/14/2010
334.	Gladys Biglor			11/6/2010
335.	Ineke Deruyter			11/8/2010
336.	James Adcock			11/15/2010
337.	Jay D. McIntosh			11/13/2010
338.	John Gear			11/13/2010
339.	Kelsey Ward			11/12/2010
340.	Kipp Coddington			11/11/2010
341.	Larry Read			n/a
342.	Laura Carver			11/11/2010
343.	Marcia Turnquist			n/a

344.	Marcus Lanskeyh		10/29/2010
345.	Mona Price		11/11/2010
346.	Neal s. Walker		11/15/2010
347.	Nicole		11/13/2010
348.	Patty Sittser		n/a
349.	Pixahm Cuj		11/14/2010
350.	Ramona Crocker		11/14/2010
351.	Robert Graham		11/7/2010
352.	Robert Kimbro		n/a
353.	Ron Mink		11/7/2010
354.	Ruth Phinney		11/15/2010
355.	Scott Mara		11/12/2010
356.	Scott & Tracey		11/9/2010
357.	Sue and Pat Harford		10/29/2010
358.	Ted Ernst		11/12/2010
359.	Tyler Grimes		11/10/2010
<b>360.</b>	Email form letter - (1255) <sup>3</sup>		10/29/2010 - 11/15/2010

<sup>2</sup> Commenters who provided attachments (available upon request)

<sup>3</sup> For the list of commenters in this group, see Attachment 1 (available upon request). Numbers in **bold** reflect multiple commenters (via form letter or email).