

**From:** [Stinson, Colleen \(ECY\)](#)  
**To:** [Guilfoil, Elena \(ECY\)](#)  
**Subject:** FW: WSPA Comments on Regional Haze  
**Date:** Wednesday, February 17, 2021 2:19:21 PM  
**Attachments:** [image001.png](#)  
[WSPA Regional Haze Informal Comments Cover Letter 2 16 21 Final WLR.pdf](#)  
[WSPA Regional Haze Informal Comments Attachment 2 16 21 Final WLR.pdf](#)

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**From:** Bob Poole <bpoole@wspa.org>  
**Sent:** Tuesday, February 16, 2021 3:45 PM  
**To:** Gent, Philip (ECY) <pgen461@ECY.WA.GOV>  
**Cc:** Stinson, Colleen (ECY) <csti461@ECY.WA.GOV>  
**Subject:** WSPA Comments on Regional Haze

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Mr. Gent,

On behalf of our members, please accept the attached WSPA comments on Washington State Dept. of Ecology's current Regional Haze initiative.

Thank you for the opportunity to provide this feedback. Please let me know if you have any questions, etc.

Bob

[Bob Poole](#)  
Director, Northwest Regulatory Affairs



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**Robert Poole**

Director, Northwest Regulatory Affairs

February 16, 2021

Sent online via WA Dept. of Ecology Comment Portal

Phil Gent

Washington Department of Ecology

Subject: Regional Haze Revisions to State Implementation Plan

Dear Mr. Gent,

The Western States Petroleum Association (WSPA) appreciates the continued opportunity to provide input on WA Dept. of Ecology's (Ecology) Regional Haze revisions to the State Implementation Plan. WSPA is a trade association that proudly represents companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas, and other energy supplies in Washington and four other western states.

WSPA's comments submitted during this informal opportunity are broken into the general comments in this cover letter and additional, more specific, comments contained in the accompanying attachment which focuses on information presented by Ecology in the Regional Haze State Implementation Plan (SIP Revision – Second 10-Year Plan, Draft Chapter 11—Four-Factor Analysis (FFA) (dated January 11, 2021)WSPA's comments in the attachment entail both general and refinery specific information. What follows here are general comments for consideration.

- **Transparency of the Four-Factor Analysis Process**

Each WSPA company submitted a FFA in April 2020 after significant effort to review the feasibility and costs associated with installing NOx control equipment at the refineries. Ecology provided no feedback or request for additional details, even after follow-up from WSPA and individual companies. Ecology now has developed and published their own analysis (including own cost estimates) without any review/comments from industry. Ecology notes that they could not "reconcile" cost differences between certain company analysis and their own. Ecology also noted that "limited supporting information" was provided for the WSPA company cost estimates. However, WSPA companies were not contacted or given an opportunity to provide additional details or justify our analyses. Given the potential impact of this rule upon the refining industry in Washington, WSPA requests that Ecology conduct a more transparent process and provide the

WSPA companies an opportunity to justify and provide more details to support the company developed 4-Factor/RACT determinations.

- **Regulatory Mechanism Flexibility:**

Ecology's preliminary 4-Factor Analysis approach potentially relies on a future RACT rulemaking for the refinery source category. WSPA encourages the agency to provide flexibility to consider facility-specific regulatory mechanisms to satisfy the 2018-2028 Regional Haze planning obligation and allow refineries to approach the agency with customized Regional Haze proposals. Source-specific RACT determinations are authorized under RCW 70.94.154(3). WSPA contends that facilities operated by its members have sufficient differences in their potential regional haze impacts to justify a source-specific RACT determination, if that is the enforcement mechanism that Ecology decides to use for Regional Haze emission reductions.

We submit there are facility-specific considerations and opportunities (within the 4-Factor or RACT decision criteria) that could minimize cost impacts yet achieve the amount of emission reductions needed to meet Washington's reasonable progress goal. These considerations and opportunities could include differing production technologies and emission controls, capital investment cycles, and the results of more detailed evaluations of emission impacts on regional haze in the Class I areas.

To accommodate unique facility features, WSPA encourages Ecology to not foreclose options for voluntary emission reductions captured in an Agreed Order, considerations of shifting timelines for accomplishing any reductions, or even acknowledging an off-ramp for any source with minimal impact on Regional Haze.

- **Site Specific Cost Estimates:**

Use of site-specific cost estimates included in the refinery 4-Factor Analyses submitted by WSPA members provides more accurate and complete project information compared to the generic information contained in the EPA Control Cost Manual. Site-specific cost estimates also address inappropriate applicability issues. An example of this involves the SCR cost estimation section of the EPA manual which was created to be applicable to the electric utility generating sector, and as such is not scalable to the heaters and boilers present at most WA refineries.

WSPA companies hired separate 3rd party companies to develop cost estimates considering these site-specific challenges. These cost estimates ranged from obtaining unit-specific cost estimates from vendors; scaling costs from actual retrofit costs at different refinery of from a different emission unit the same refinery; and using EPA's Control Cost Manual with a retrofit multiplier and site-specific costs for labor and utilities. These separately developed cost estimates were in general agreement and better reflect the true cost of installing this equipment. WSPA considers the cost estimates development by Ecology to greatly underestimate the actual cost of installing the controls.

- **Technical Feasibility:**

WSPA suggests the technical feasibility of control equipment installation cannot be fully determined until more detailed engineering has been completed. For some refineries, the addition of SCR would require plot space that is simply not available, or unreasonable equipment retrofit challenges. A more detailed review of these issues would demonstrate the technical infeasibility of SCR addition.

- **SCR as RACT:**

WSPA is unconvinced that Ecology's determination that SCR qualifies as RACT can be justified. The agency 4-Factor Analysis takes no account of the full project cost a refinery would incur in installing and operating/maintaining this emission control technology. We respectfully challenge Ecology to find an analogous determination anywhere in the United States outside of California (which is in severe nonattainment for ozone – not the situation in Washington) where the installation of SCR has been determined to be RACT.

- **Economic Analyses Factor:**

WSPA requests that Ecology use the traditional 7% interest rate for control cost-effectiveness calculations. Historical cost analyses done by members have all been based on a 7% interest rate. Use of a 7% interest rate for annualizing capital costs provides more comparability and consistency with previous cost analyses both in Washington and across the country. Additionally, the 7% interest rate would comport with the 2016 federal Regional Haze guidance, which says that states should use "**OMB-approved** discount rates to annualize costs." [emphasis added] The relevant Office of Management and Budget (OMB) guidance<sup>1</sup> concludes that the appropriate discount rate for cost-effectiveness calculation is 7%. The 3.25% interest rate that Ecology used in its Draft 4-Factor Analysis does not reflect the reality of actual borrowing costs for WSPA members, and therefore results in annualized control estimates that are significantly too low.

- **Information Exclusion:**

The refineries provided 4-Factor Analyses that responded to Ecology's November 2019 information request. That request excluded emission units that had been retrofitted after 2005. For that reason, two FCCUs were not addressed in the refineries' 4-Factor Analyses. WSPA requests that either Ecology's 4-Factor Analysis be based on the same universe of sources that was specified in the information request, or that Ecology amend its request to allow refiners to

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<sup>1</sup> U.S Office of Management and Budget, Circular A-94: Guidelines and Discount Rates for Benefit Cost Analysis of Federal Programs, October 29, 1992.

provide site-specific information. If the latter option is selected, the facilities that operate these FCCUs are best suited to prepare the evaluations by using their site-specific knowledge.

As stated above, the enclosed attachment focuses on information presented by Ecology in the draft 4-Factor chapter and entail both general and refinery specific information.

Given the timing of the Second 10-year Plan SIP revision and the issues noted above, we believe it is appropriate for Ecology to remove specific representations and conclusions from the RH FFA chapter and address the topic more generally

Thank you for considering our comments as Ecology moves forward with revisions to the Regional Haze components of the State Implementation Plan. We appreciate the opportunity to continue to provide input on this very important issue. If you have any immediate questions, please contact me via e-mail at [bpooole@wspa.org](mailto:bpooole@wspa.org) or by phone at (805) 833-9760.

Sincerely,



Enclosure: Comments on WA Dept. of Ecology's Draft 4-Factor Analysis Chapter

cc: Philip Gent:  
[Philip.Gent@ecy.wa.gov](mailto:Philip.Gent@ecy.wa.gov)

Colleen Stinson  
[CSti461@ecy.wa.gov](mailto:CSti461@ecy.wa.gov)



**February 16, 2021**

**Attachment: WSPA Comments on Ecology's Draft 4-Factor Analysis Chapter**

**Introduction Comments:**

**Page 5, Paragraph 2.** According to the regulation cited in the previous paragraph, the emission reductions resulting from the 4-factor process and other reductions from things such as plant closures, and rules on the books with future applicability dates, are used to establish the reasonable progress goals. This is WSPA's understanding of the rule. However, the way the Ecology text of this paragraph gives the impression that the reasonable progress goals are set, then emission reductions found to accomplish the goals. WSPA requests this paragraph be edited to better conform to EPA's Regional Haze regulations.

**Page 5, Paragraph 2.** Ecology needs to edit this paragraph for clarity. As written, a reader could get the impression that area and mobile sources do not contribute to regional haze. There are multiple analyses that show their contribution to haze, including the modeling that has been done for this SIP. Due to not having fixed locations or having very small emissions, they are not evaluated via the Q/d process. Ecology needs to clarify why it is not addressing area and mobile sources at this time.

**Page 6, Paragraph 1.** Ecology needs to explain why it is committing to the use of a RACT regulation development process for the refineries. As previously stated in our opening remarks, Ecology needs to be open to other regulatory mechanisms to evaluate visibility-impacting emissions and reasonable emission reductions which consider RACT-criteria. Voluntary emission reductions presented in an Agreed Order is one example. The language in the draft chapter suggests that there is a dispute between Ecology and the petroleum refining source category operators; WSPA is not aware that this is the case.

**Source Screening Analysis (Q/d) Comments:**

**Page 7.** Ecology needs to explain the Q/d processes more clearly. WSPA requests that Ecology include discussions on deferring sources with large Q/d values while including other sources with much smaller Q/d values.

**Page 7, Paragraph 1.** WSPA requests the Q/d table (Table 1) should be referenced here to give context for the 'scores' discussed in the last sentence. For example, what does the 'score' of 685

mean? Further, the reference to a score of 685 differs from the use of '80% score' equal to 6.7, in the third paragraph later on the page.

**Page 7, Paragraph 5.** Ecology needs to provide clarification here. Specifically, were three minor sources removed from consideration or two? WSPA requests simply naming the plants removed from consideration and providing the reasons for doing so to lend clarity here.

**Page 7, Paragraph 6.** (Describing initial screening step): Ecology needs to provide more clarity here. Specifically, it is unclear what is being said and what is the conclusion in last sentence.

**Page 7, Paragraph 7.** (Describing the second screening step): WSPA is unclear what second evaluation is being referred to in the first sentence. Further, would not the Q/d process effectively eliminate the 1,121 small sources from consideration, essentially leaving only sources with Air Operating Permits for further evaluation?

**Page 7, Paragraph 8.** WSPA interprets this paragraph to say that using a Q/d of 10 or more yields 16 sources, yet in the third paragraph 17 sources are discussed. What is the source of this difference? Further, the paragraph goes on to state that two of these sources are removed, which would leave 15. Please clarify. Is Ecology stating two separate Q/d evaluations were conducted using differing methods and that what resulted was essentially the same list of sources? Based on this section of the chapter, it is not clear what was done to select the sources that were evaluated.

**Table 1.** There are two plants that are bolded. What does the bolding mean? Why isn't this noted in the text discussing the Q/d evaluation?

#### **Source Specific 4-factor Analysis Section Comments:**

#### **Facility Specific 4-Factor Analyses: Refinery Section:**

**Page 40, Paragraph 3.** Ecology needs to compare the records on both the age of the federal Clean Air Act and the refineries. Not all of them existed before the federal Clean Air Act came into existence. Did Ecology mean the 1970 amendments to the Act? It would be more direct to simply identify when the refineries were built and perhaps when any major expansions/modifications occurred. Ecology's reliance on what are now obsolete facility names is confusing. The ownerships have changed through time. It would be more accurate to use current ownership names.

**Page 42, Paragraph 5.** Ecology states that two of the three refineries with FCCUs did not submit information on FCCU controls. But Ecology asked for information on projects in a specific date range and the referenced FCCUs were outside of the requested date range. It is also our understanding all the PSD cost analyses for these projects are available in Ecology's permit files. Otherwise, an inquiry to the refineries requesting this information is another available option.

**Page 42, Last Paragraph.** Ecology states the SCR cost estimates from the companies differed from what is estimated by the EPA's Control Cost Manual. WSPA suggests a discussion on what is different and its importance in the analysis will be useful to provide context. The below paragraphs discuss specific considerations for discussion within the document:

The capital cost estimates provided by members include site specific factors and costs that are not reflected in the EPA control cost manual's calculations. Members engaged engineering consultants to help evaluate project scopes plus site-specific issues such as physical space for new emission controls, need for new foundations or demolition and relocation of other existing equipment or piping to make space for SCR controls, safety requirements for the use of ammonia at the refinery, feasibility of using one or a number of ammonia storage tanks, and the anticipated capital costs to accomplish these changes.

**Page 42, Last Paragraph.** This paragraph contains two very separate discussions, one discussion is about costs of controls. The other is a decision to utilize the state RACT process to develop a NO<sub>x</sub> control rule rather than other approaches to getting emission reductions. This discussion should include Ecology's rationale for not using the other options to get emission reductions available under state law.

**Table 7.** How does Ecology explain the factor of 10 differences in cost effectiveness for installation of SCR between its estimates and those provided by the refineries? Will the proposed RACT Rule development process be used to further refine these costs and possibly change the current emission control proposal?

WSPA's preliminary review of the work on estimating costs indicates that Ecology used the included default values and factors almost exclusively. As both EPA's Control Cost Manual and EPA Regional Haze August 2019 guidance state, acquisition of site-specific information is preferable when making estimates. Ecology recognized a preference of site-specific cost information over generic factors on page 37 of the draft 4-Factor analysis when the agency states the following:



*“This approach does not take into account the site-specific information we requested from the mills and is therefore less accurate and harder to reconcile. According to page 32 of EPA’s August 2019 RH guidance document: “We recommend that states exercise caution before accepting or rejecting controls based on generic cost estimates if adequately documented source-specific estimates are available or can be prepared.”*

In addition, it appears Ecology used the default 2016 costs the EPA Control Cost Manual’s formulas are based on rather than inflating the costs to a more current year, as directed by the Manual. For all of these reasons, WSPA contends that the control cost estimates that appeared in the members’ 4-Factor Analyses are more reliable than those appearing in Ecology’s Draft 4-Factor Analysis.

**Page 42, Last Paragraph.** WSPA suggests it would be helpful to have Ecology’s discussion about its decision to use the state RACT process to develop a NOX control rule for the refineries match up with the discussion on how controls could be required earlier in this chapter. (Very awkward sentence.)

**Tables 7, 8, 12, 15.** WSPA requests clarity on whether the “TPY reduced” column indicates the tons no longer emitted or the tons remaining after control? Is Ecology’s estimate of tpy reduced based on a potential to emit calculation or the actual emissions that occurred in 2014? WSPA’s analysis indicates that the tons reduced column is not based on actual 2014 emissions. Ecology needs to explain why they chose the approach presented or make adjustments to use site-specific actual emissions.

**Page 44.** Ecology appears to be providing a very short RACT decision summary that does not comport with prior agency RACT analyses (e.g., the 2017 Pulp and Paper and the Refinery Greenhouse Gas RACT analyses). Since it does not meet the process used in the prior agency RACT analyses, WSPA contends this is an incomplete and therefore premature analysis. WSPA recommends the detailed analysis should be part of the proposed RACT rulemaking exercise, similar to what was done for the Refinery Greenhouse Gas RACT rule.

**The following comments use the numbering convention of Ecology in its summary RACT analysis:**

**Item I.d.** This statement is premature in light of the need for Ecology to show that emissions from one or both refineries are contributing to the “health disparities.” The mere adjacency of the plants and the community do not equate to the implied cause and effect, as can be shown by many dispersion modeling studies. **Item I.e.** It is WSPA’s view the health impacts caused by NOx are not an ambient air quality impact. Health impacts from NOx only occur under very high concentrations and should be removed from this list. Ambient air concentrations in the airsheds where refineries operate are compliant with NAAQS, and as such, suggesting a health impact

from point source emissions in these areas cannot be asserted. WSPA submits Ecology has not shown that the concentration of NO<sub>x</sub> in Anacortes that is attributable to emissions from the

March Point refineries is such that the health impact would occur. Given this, WSPA believes such a statement is inappropriate for this presentation.

**Item 2.** Availability of additional controls. This evaluation is incomplete in that it does not list or evaluate other controls that can be used, including combustion controls and alternate stack controls, i.e., SNCR, Low NO<sub>x</sub> and Ultra Low NO<sub>x</sub> burners. Ecology needs to present an analysis of why “most major US refineries have already installed SCR or Low NO<sub>x</sub> burners.”

**Item 3.** Emission reductions. The information discussed in this item is also incomplete in that it focuses solely on one possible control and not other available options such as those noted above. WSPA requests a more comprehensive discussion.

**Item 3.d.** Stating that health impacts will decrease due to a decrease in emissions may not be true. For example, using SCR will reduce stack temperatures, which may affect stack exit velocity and effective stack height; thus, the dispersion characteristics will change. The changed dispersion may even result in higher concentrations at ground level compared to current conditions. Further, WSPA is concerned with the focus on Anacortes. This focus may justify treatment of these refineries differently than the others.

**Item 4, Capital and operating cost of controls.** Ecology provides a wide range of estimated costs in \$/ton reduced that it considers to be cost-effective for RACT. It is not clear what Ecology has selected as criteria for determining if a control is or is not cost effective for RACT. In determining cost effectiveness for NO<sub>x</sub> control in ozone nonattainment areas, most states, and local agencies in the US (but not California’s South Coast AQMD) have chosen to use a NO<sub>x</sub> control cost effectiveness value in the \$1500 – \$3000/ton reduced range.<sup>1</sup> Ecology should either consider the approaches and analyses used by these other jurisdictions in their determination of cost effectiveness or justify why a different cost-effectiveness threshold is necessary in Washington.

**Page 45, Low-NO<sub>x</sub> Burners.** WSPA believes Low NO<sub>x</sub> burners and Ultra Low NO<sub>x</sub> burners have similar combustion characteristics, but due to specific installation issues should not be considered the same technology. Furthermore, Low NO<sub>x</sub> burners have a long track record of successful retrofit installations. Ultra-Low NO<sub>x</sub> burners have a less uniform success rate in retrofit applications.

Ecology’s analysis should not focus solely on the use of SCR as a control technology but include consideration of Low and Ultra Low NO<sub>x</sub> burners as appropriate options for NO<sub>x</sub> control. The discussion should include what boiler or heater fire-box characteristics would favor the use of

<sup>1</sup> See SIP documents for Ozone nonattainment plans for Pennsylvania, New York, Philadelphia, PA, Mojave and Ventura county AQMDs in California as examples

these burners and identify which heaters or boilers at the refineries which meet these characteristics.

Ecology requested that the refineries evaluate installation of Ultra Low NOx burners and not Low NOx burners. Ecology's request of the refineries should be reflected in the agency's final 4-Factor Analysis.

**Page 47, Third paragraph.** Here and elsewhere, WSPA requests when Ecology provides costs estimated or incurred by other entities to support the use of the Control Cost Manual's calculations that Ecology shows the basis for the calculations and name the installations and specific costs being referenced. Being transparent with this information would greatly help reviewers evaluate, understand and comment on Ecology's work.