ORCAA Responses
Pacific Northwest Renewable Energy (PNWRE)
23NOC1606

ORCAA received feedback from approximately 30 commenters. Some individuals commented more than once, many comments address more than one issue, and a number of issues were raised by multiple commenters. ORCAA has responded to each comment whether it was submitted in writing, by email, or recorded during the January 16, 2024 public hearing held in Hoquiam. In many cases, ORCAA refers the commenter to an earlier response if the subject matter has already been addressed.

Summary

There were nine subjects brought up frequently by commenters, these are addressed in a general manner in this Summary. All comments are addressed individually later in the document, but when these matters are presented in a comment, ORCAA refers the commenter to the appropriate item in this Summary.

1. **Several commenters presented data showing that Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP) emissions from the wet (green) hammer mills are not negligible and expressed concern that the units will not be vented to any VOC controls.** ORCAA staff reviewed the data provided and discussed these concerns with PNWRE. PNWRE submitted information to ORCAA on March 12, 2024 stating exhaust from the wet hammer mill particulate filters will be routed to the proposed Regenerative Catalytic Oxidizer (RCO) for VOC control. Potential VOC emissions from the wet hammer mills, accounting for control from the RCO, is expected to be 0.37 lbs VOC/hour.

   The Final Determination has been revised to address VOC, and toxic air pollutant (TAP) emissions from the wet hammer mills (including a revised ambient analysis for Chapter 173-460 WAC in Section 12.2).

2. **Many commenters raised concerns that emissions were underestimated by the applicant.**

   ORCAA reviewed emission estimation methods and calculations submitted by PNWRE and determined they are acceptable for this proposed facility. Emissions estimates provided by PNWRE for the drying line (furnace + dryer) specifically account for wood species specific to the Pacific Northwest (See Appendix D–Vendor Information). Comparing potential VOC emissions from the PNWRE's facility to VOC emissions from pellet mills in the southeastern United States is not a perfectly equivalent comparison, as those mills dry southern pine wood species, which has the potential to emit VOCs at a significantly higher rate than drying hemlock and Douglas fir–the most common wood species in the Pacific Northwest processed by the wood products industry (see *EPA Region 10 HAP and VOC Emission Factors for Lumber Drying (January 2021)*. This fact played a part in ORCAA's decision to accept–and hold PNWRE fully accountable to–the lower emissions estimates provided in their NOC application. ORCAA added initial testing requirements to the RCO and Regenerative Thermal Oxidizer (RTO) stack exhausts for acetaldehyde, acrolein, phenol, and propionaldehyde in order to obtain site-specific emission factors. If testing indicates

HAP emissions were underestimated by the applicant such that the bases for satisfying the criteria of approval for New Source Review (NSR) are believed to be at risk, PNWRE may be subject to Notices of Violation (NOVs), monetary penalties, and if necessary, a permit modification.

3. **Several commenters stated that PNWRE must submit a case-by-case MACT determination.**

   A case-by-case MACT determination is a transitional measure to ensure facilities that are major Hazardous Air Pollutant (HAP) sources implement "MACT-like" controls, until such time the U.S. Environmental Protection Agency (EPA) issues a MACT standard that would apply to the facility. Major HAP sources are those sources that have the potential to emit 10 tons per year or more of any single HAP, or 25 tons per year of any combination of HAPs. Since PNWRE is not a major source of HAP, the requirement to perform a case-by-case MACT analysis does not apply. PNWRE's application and ORCAA's Preliminary Determination show PNWRE is not expected to be a major source of HAP.

4. **Several commenters stated that PNWRE must be classified as a Fuel Conversion Plant under the federal Clean Air Act Major Source Prevention of Significant Deterioration (PSD) Permit Program.**

   The Washington Department of Ecology (Ecology) is the delegated PSD authority in the state of Washington. ORCAA sought Ecology's opinion on whether the pellet manufacturing facility proposed in Hoquiam should be considered a "fuel conversion plant" for PSD applicability purposes. Ecology responded with a letter (see Attachment 1: Ecology Letter dated February 21, 2024) clarifying the key characteristics of a "fuel conversion plant" based on a review of EPA memos. Based on this letter, ORCAA reaffirms that PNWRE should not be classified as a Fuel Conversion Plant under PSD regulations as the proposed plant will not have any of the key characteristics identified in Ecology's letter (e.g., conversion is irreversible, change in the state of a fuel, involves a fossil fuel).

5. **Many commenters asserted that a PSD permit should be required.**

   In addition to ORCAA's response to #4 in the Summary, ORCAA reaffirmed PNWRE's PTE is below PSD thresholds for all pollutants (250 tons per year).

6. **Many commenters raised concerns regarding noise pollution, the impact on birds and marine life, water pollution, impacts on traffic, economic viability of the project, how PNWRE will be sourcing their biomass feedstock, the effects on forest health, and the potential impacts on existing wood products facilities in the region.**

   These matters are beyond ORCAA's authority and expertise. Whether the proposed facility is viable from a business perspective is PNWRE's issue. ORCAA has nothing to do with public subsidies, tax incentives, etc., and does not consider them when reviewing a project. The health of Washington's forests and wildlife are matters for the Department of Natural Resources (DNR) and the Washington Department of Fish and Wildlife (WDFW). Water quality issues are managed by Ecology and other local governments, such as cities and counties. Noise pollution and traffic impacts are a matter for the City of Hoquiam.

   Secondary effects–effects on wildlife, plants, and the natural environment (e.g., decreased visibility)–are considered by EPA and the Clean Air Science Advisory Committee (CASAC) in

setting the National Ambient Air Quality Standards (NAAQS) to provide public welfare protection. As described in ORCAA's response to Item #7 in the Summary, ORCAA reviews compliance with the NAAQS as one of its five criteria of approval.

7. Many commenters raised concerns about the health impacts from the facility's air pollution.

ORCAA's Mission and Vision are directly related to protecting the health of the citizens in western Washington. ORCAA has a legal mandate to do this in a particular way: by implementing and enforcing those programs in the state and federal Clean Air Acts for which ORCAA is the delegated authority.

As the delegated authority implementing the New Source Review (NSR) program, ORCAA considers five criteria when making the decision to approve or deny a Notice of Construction (NOC) application for a proposed stationary source of air pollution:

1. Will the proposed source comply with all federal, state, and local standards?
2. Will the proposed source use best available control technology (BACT) for all pollutants whose emissions would increase?
3. Will any increase in emissions result in an exceedance of any federal or state air quality standard?
4. If a Prevention of Significant Deterioration (PSD) permit is required, did the applicant obtain one from the delegated PSD authority–in this case, Ecology?
5. Did the applicant meet all the requirements of Washington State's Air Toxics Rule (WAC 173-460)?

These criteria are paraphrased here from ORCAA's Regulations. The original wording can be found on ORCAA's website (www.orcaa.org/about/air-quality-regulations/) under ORCAA Rule 6.1.4(a). If the five criteria listed in ORCAA Rule 6.1.4(a) are met for a proposed source in ORCAA's six-county area, ORCAA is required to approve the project with conditions adequate to verify compliance with all applicable limits and standards. ORCAA believes these criteria have been met. Of the criteria listed above, #3 and #5 are directly related to protecting human health. Furthermore, ORCAA has no authority to require more comprehensive human health risk assessments as part of an application under the NSR program.

8. Many commenters raised concerns regarding climate impacts and the increase of greenhouse gas emissions–from the proposed facility and/or associated with shipping product to overseas markets. There were also concerns that this facility will not be carbon neutral or "green".

Greenhouse gas emissions and climate impacts from transporting the product to Asia is outside of the scope of reviewing and approving a NOC application–please see ORCAA's response to item #7 in the Summary to review ORCAA's authority and the five criteria ORCAA must evaluate when making the decision to approve or deny a proposed stationary source of air pollution. Emissions associated with the end-use of the wood pellets in overseas markets are not part of PWNRE's facility and outside the scope of criteria ORCAA must use when deciding whether to approve or deny a NOC application.

Greenhouse gas emissions are not included as part of the minor NSR review criteria, and ORCAA does not have the authority to deny a project that meets the criteria in ORCAA Rule 6.1.4(a). With that said, PNWRE is expected to be subject to the greenhouse gas (GHG) reporting rule

implemented and enforced by Ecology (Chapter 173-441 WAC). Greenhouse gas (CO_2) emissions were provided in the Preliminary Determination for informational purposes and to help identify if PNWRE would be subject to Ecology's GHG rules, as the requirements will be incorporated into PNWRE's Air Operating Permit (AOP).

9. **Several commenters stated the emergency/fire pump engine proposed by PNWRE was erroneously excluded from New Source Review criteria (e.g., BACT analysis, TAP analysis, etc.).**

   The emergency generator proposed by PNWRE is less than 500 horsepower, therefore, it is categorically exempt from New Source Review (NSR) per ORCAA Rule 6.1(c)(28)(ii). This determination is included on Page 4 of ORCAA's Preliminary Determination. Emissions from the proposed emergency engine were quantified in the application by PWNRE to evaluate Title V and PSD applicability–please refer to Table C-1 Facility-wide Potential Emissions on Page 3 of the PDF titled Appendix C–Emission Calculations. Categorical exemption from NSR does not exempt the engine from applicable federal standards, which will be included in PNWRE's AOP.

Written and Verbal Comments from the January 16, 2024 Public Hearing in Hoquiam

Comment #1: Liz Ellis (written comment, 1/16/2024)

I am writing to comment on the proposed wood pellet plant requested by Pacific Northwest Renewable Energy, LLC. I am concerned that the proposed maximum potential to emit pollutants submitted by the applicant do not accurately reflect real word data as presented by the Southern Environmental Law Center.

I am an Aberdeen City Council member and while I do not speak for the Council today, I am commenting on behalf of many in my community who represent people with existing health concerns and people who care about protecting the air and water quality.

Aberdeen is down wind of Terminal 3 when prevailing winds are out of the west. Cooling winds coming off the ocean help to maintain fresh air and cooler temperatures when summer temperatures climb into the 90's and even 100's.

Wind from the south carries noticeable smelly air from Cosi Fibers resulting in numerous complaints to the WA. Department of Ecology. Added airborne pollutants from this proposed site will result in more bad-air days.

Yes, Grays Harbor County desperately needs well paying jobs for our economy to thrive and to put people to work, but not at the cost of pushing the metrics of poor health–already among the highest in the state-even higher.

According to the Washington health Disparities Map, Hoquiam, Aberdeen, and Cosmopolis fall into the Highest Category for measuring Cancer Deaths, Cardiovascular Disease, Lower Life Expectancy, and Premature Death.

A high rate of Aberdeen residents suffer from Diabetes and Asthma. One of the key recommendations for improving their family's health is to get exercise and this area has many beautiful places we go to walk, bike, hike and run. The Grays Harbor National Wildlife Refuge offers one such place and is located adjacent to Terminal 3 where this project is proposed.

The concern is that PNWRE has vastly underestimated the HAP emissions. Per the Southern Environmental Law Center, this facility is more likely to produce at least 40 tons of total HAPs per year including more than 30 tons of methanol–a notorious greenhouse gas. I ask that you review PNWRE's application in context with similar operating mills.

I support other requests for the applicant to submit a case-by-case Maximum Achievable Control Technology analysis and to provide more complete data for BACT analysis for the wet hammermills.

Until there is better data, ORCAA should withdraw PNWRE's application from notice and comment until the company revises its application to address the issues raised in public comments.

ORCAA Responses

Regarding the concern about health impacts from the facility's air pollution: Please refer to ORCAA's response to item #7 in the Summary.

Regarding the BACT analysis for the wet hammer mills: Please refer to ORCAA's response to item #1 in the Summary.

Regarding the letter submitted by the SELC and underestimating emissions: Please refer to ORCAA's responses to item #2 in the Summary.

Regarding case-by-case MACT analysis: Please refer to ORCAA's response #3 in the Summary.

Comment #2: Jean Davis (written comment, 1/16/2024)

I am completely opposed to this new facility being considered in Hoquiam, WA, for many reasons.

Air Pollution: PNWRE claims "Emissions from the new stationary source will not cause or contribute to a violation of any ambient air quality standard;" The Southern Poverty Law Center has been following this issue since 2017 and has found that "PNWRE has ***vastly underestimated HAP emissions."*** *In the letter from SPLC to you dated January 8, 2024 this claim is detailed with specifics found from other similar plants around the country. Believe them!*

Air toxics: The same letter to you from the SPLC also addresses this, to the detriment of the PNWRE application.

A huge concern is the claim that this mill will source their material from mill waste and forest slash. With the amount of pellets proposed to be manufactured, actual trees will soon need to be felled to fill this need. More clear-cutting, more loss of carbon-absorbing adult trees.

There are many other concerns. The loss of clean air in our community, the noise pollution that will occur, the climate impacts of these pellets being made to be transported to Asia as well as the climate impacts of the manufacture are huge.

Please withdraw this application until the company revises its application to address these concerns.

Note written by commenter on an additional page: *How will air pollution be monitored physically?*

ORCAA Responses

Regarding the letter submitted by the SELC and underestimating emissions: Please refer to ORCAA's responses to item #1 and item #2 in the Summary.

Regarding other concerns, please refer to ORCAA's response to item #6 and #8 in the Summary.

Regarding air pollution monitoring, ORCAA included requirements for monitoring in its Recommended Conditions of Approval. Air pollution will be physically monitored using in-stack measurement techniques to directly monitor pollution coming out of the stack, indirectly by monitoring process parameters and through performing emission calculations to quantify actual emissions.

Comment #3: Tammy Domike (verbal comment, 1/16/2024)

I am a community organizer for citizens for clean harbor so you will be hearing from other folks too.

These guys took all my good numbers. I am very much in agreement with what everyone has been saying here tonight.

I did look up to see where the air quality monitors are and there is one at Harbor High, which is at the middle swanson, which is about 2 miles away. The other one is in south Aberdeen behind the college on north Rogers Street. So, it is quite a long ways away and won't be picking up anything ambient that we have here in Hoquiam.

Again, the estimated 1.3 tons of HAP that we know that stacks in the south emit 40 tons out of that same size stack, which is why I was asking about comparing it to any of the facilities already being in Washington state. I don't know if there are any.

The noise from continuous operation is going to be really detrimental to everyone in town. Quite near where this plant will be, the city just put in a nice little new park. We have a park right close to there and that won't get used by anybody after this starts its continuous operation. 128 trucks per day, have any of you ever tried to go to the ocean on a Friday? There is no way to move anything through town. We have one road in and out and all the trucks will be competing with the giant campers and things that get hauled out from Seattle.

It is kind of bad for the birds. This, where are preserve is, is a hemispheric migration point. It is the entire west coast here, coming through. The light, the noise, the pollution is going to wind up on the mud flats and mud slime which is so beneficial for all of the birds.

This is not a carbon neutral project and I would ask that you would look at all the communitive impacts that will be happening to our town and please pull this permit.

ORCAA Responses

The purpose of ORCAA's air quality monitor at Harbor High School is to measure ambient $PM_{2.5}$ (a criteria air pollutant) to ensure the region meets the NAAQS. The monitors are not collecting fence line emission data of any one source. PNWRE is not subject to any clean air act rules requiring placement of a fence line monitor.

Please see ORCAA's response to item #6 in the Summary regarding comments on noise from facility operations, traffic impacts, impacts on birds and migration, and impacts from facility lighting.

Comment #4: Savannah Rose (verbal comment, 1/16/2024)

I am a staff attorney for Twin Harbors Water Keeper, which is a nonprofit organization dedicated to protecting this community's water sheds, including the area where this wood pellet manufacturing facility is proposed to be constructed.

Twin Harbors understands that Grays Harbor County has among the highest unemployment rate out of all the counties in Washington. But these job opportunities, from the proposed facility do not need to come at the expense of our health. We all know this facility will result in more air pollution and greenhouse gases during the manufacturing process. But this facility will also result in environmental harm in other ways that are not being considered, such as increase in logging rates, ship traffic, dredging in Grays Harbor, water pollution and noise.

Page 4 of ORCAA's preliminary determination states because there are no permanent air monitors in our county it is considered unclassifiable which on page 31 of ORCAA's preliminary determination it states that because Grays Harbor County as a whole is designated as unclassifiable, there are no preexisting non-attainment issues identified within the county. Furthermore, the ambient air quality analysis provided by PNWRE's application demonstrates the air emissions will not cause or contribute to any exceedance to any NAAQS.

On page 6 of ORCAA's preliminary determination it states there are no dust control systems proposed for the disc screen and further down in that paragraph it states the white wood disc screening unit is considered a point source of fugitive particulate emissions. I am asking ORCAA why there is no dust control system proposed for that point source.

Finally, on page 8 of ORCAA's preliminary determination it talks about emergency bypass stacks. And that when the emergency bypass stacks are used, they will exhaust the emissions from the stacks bypass the air pollution controls system and are emitted directly into the atmosphere at approximately 50 feet above grade. I just want to call out to ORCAA's attention that this facility can, and plans on, needing to use the emergency bypass stacks quite frequently throughout the year. So therefore, on behalf of Twin Harbors Water Keeper we request ORCAA denies this proposal.

ORCAA Responses

Please refer to ORCAA's response to item #6, and #7 in the Summary.

As described in the Preliminary Determination, the disc screen will be used for white wood (mill residuals) to separate larger pieces for further sizing in the wet hammer mills. PNWRE expects the white wood material stream to be relatively free of dust and contaminants, therefore, airborne dust is expected to be minimal, and a dust control system was not proposed. PNWRE is required to devise and implement a dust prevention plan as part of their Operation and Maintenance Plan (Condition 13 in the Preliminary and Final Determination). If fugitive dust becomes an issue, ORCAA will enforce the general requirements related to fugitives (see Table 5 of the Preliminary and Final Determination).

ORCAA has reviewed all scenarios where the bypass stacks are planned to be used and has limited the use of bypass stacks (see Condition 9 and Condition 10 in the Preliminary and Final Determination). The use of bypass stacks in these limited scenarios meets the New Source Review (NSR) approval criteria (see ORCAA's response to item #7 in the Summary). At all other times, emissions from the furnace and the dryer are required to exhaust through the air pollution control system and failure to do so would be a violation of the limits and standards in Condition 5, which can lead to enforcement action including monetary penalties.

Comment #5: Peter Riggs (verbal comment, 1/16/2024)

As ORCAA has learned from the letter from Colleagues of the American South who are clean air act lawyers. They reviewed PNWRE's filing and found PNWRE likely underestimated emissions of hazardous air pollutants and not by just a little bit but by an order of magnitude.

The modeling submitted by PNWRE suggest for these (garbled) 1.3 tons of TAPs where these facilities using of similar size using identical pollution control devices are more like 40 tons a year.

Now this industry, this export-oriented pellet industry has found a foothold in the American south and there are a half dozen or more facilities of that size at (garbled) tons a year. And, since they have been operating stack emissions have been measured that is direct measured, not extrapolated from modeling.

I want to draw attention to PNWRE's decision to submit only desk study models and frankly using inappropriate data sets for comparison. Now ORCAA's job is made harder by the fact that there do not exist at either federal or state level the kind of industry specific emission profiling data sets that would have helped you, that would have made things much easier instead you had to reach for different (garbled) for comparisons as PNWRE we think what they used was completely inappropriate and was not appropriate to compare to home pellet stoves. This is a much larger deal.

So why did PNWRE choose only to submit model data-they probably are well aware from plants in the south that actual stack measurements have been done. Did they fear that if they actually directly reported the emission levels they would be seen as a major source of air pollution and they wanted

to avoid the permitting costs associated with prevention of serious deterioration, we don't know, but they didn't use actual stack data. They used desk studies, they used models.

Let's give them the benefit of the doubt, they thought this was a reasonable work. I think we find the work to be actually shoddy, PNWRE is very thinly capitalized, it is relying largely on evergreen manufacturing grant from the state to get off to the ground. The proponents don't have a record of building these plants and creating jobs. They don't, and I would be happy to speak about that but I don't think I have the time right now.

Let's say they didn't really know they were massively underrated, underestimating emissions. How do we feel about them as operating in that case. If they didn't even, if they weren't even able to adequately represent in their final the potential of emissions associated with this facility. That is what concerns me. This is not, this does not strike me as very good work and there were plenty of industry examples that had to draw from and they chose not to. Is that a question of honesty or was it a question of incompetence. I don't know but I don't like either of those outcomes.

ORCAA Responses

Please see ORCAA's response to item #2 in Summary.

Comment #6: Liz Ellis (verbal comment, 1/16/2024)

I am an Aberdeen city Council member and while I do not speak for the Council today, I am commenting on behalf of many in my community who represent people with existing health concerns and people who care about protecting the air and water quality.

I am concerned that the proposed maximum potential to emit pollutants submitted by the applicant do not accurately reflect real world data as presented by the Southern Environmental Law Center in their comments.

Aberdeen is down wind of Terminal 3 when prevailing winds are out of the west. Cooling winds coming off the ocean help to maintain fresh air and cooler temperatures when summer temperatures climb into the 90's and even triple digits.

Wind from the south carries noticeably smelly air form Cosi Fibers resulting in numerous complaints to Washington Department of Ecology. Added airborne pollutants from this proposed site will result in more bad air days.

Yes, Grays Harbor County desperately needs well paying jobs for our economy to thrive and to put people to work, but not at the cost of pushing the metrics of poor health already among the highest in the state, even higher.

According to the Washington Health Disparities map, Hoquiam, Aberdeen and Cosmopolis fall into the highest category for measuring cancer deaths, cardiovascular disease, lower life expectancy, and premature death.

A high rate of Aberdeen residents suffer from diabetes and asthma. One of the key recommendations for improving their family's health is to get exercise and this area has many beautiful places we go to walk, bike, hike and run. The Grays Harbor National Wildlife Refuge offers one such place and is located adjacent to Terminal 3 where this project is proposed.

PNWRE has vastly, there is concern that PNWRE has vastly underestimated the HAP emissions. Per the Southern Environmental Law Center, this facility is more likely to produce at least 40 tons of total HAPs per year including more than 20 tons of methanol, a notorious greenhouse gas.

I ask that you review this application in context with similarly operating mills. I support other requests for applicant to submit a case-by-case maximum achievable control technology analysis and to provide more complete data for BACT analysis for the wet hammer mills.

Until there is better data, ORCAA should withdraw PNWRE's application from notice of comment until the company revises its application to address the issues raised in public comments.

ORCAA Responses

Please refer to ORCAA's response to Comment #1: Liz Ellis (written comment, 1/16/2024).

Comment #7 Donna Albert (verbal comment, 1/16/2024)

Thank you for having this hearing. I am concerned that very few people who live nearby or have kids at the school or the wildlife refuge are even aware of this project and the noise pollution it will cause.

As councilwoman Liz Ellis mentioned this area has been identified by the Department of Health that (garbled) whether they should (garbled) feel active using the database and I am sure that neighborhoods like this are overburdened and so I am concerned that children at the elementary school who are playing outside at recess, or the kids in the band or football players are out exerting themselves, kids that run track and also that even when they are in the classrooms they will be breathing this air because you can't filter it all out.

I don't know how you get that ? mandate, I don't know how it gets to ORCAA but could you look into that please and try to remember to add that to my written comments.

I think you are probably already hearing about how these dangerous pollutants affect us all, especially children. Also the refuge is a very special place that birds depend on when they migrate through here. The noise bothers them–I should be doing noise, we already did noise apparently. The pollutants are not going to be good for them so that is my concern.

People come from all over the world to see this refuge and it seems very short sided for us. The city of Hoquiam and Department of Commerce to place this right next to the really valuable, wonderful bird refuge which is one of the pearls that the birds stop on from all the way from south America to Alaska.

I will leave some other written comments, this is a very poor trade for us for only like 50 jobs and I think it will be less. I think it is portrayed (garbled).

ORCAA Responses

Please refer to ORCAA's response to item #6 and #7 in the Summary.

Comment #8 David Perk (verbal comment, 1/16/2024)

I request that you deny Renewable Energy's air permit application. They claim they will emit only 1/30th of the hazardous air pollutants of comparable facility. That is not acceptable. Their application fails to adequately address volatile organic compounds, siting irrelevant ambient impact. That is not acceptable either.

Given the facility will meet the major source threshold they should be required to submit a case-by-case maximum achievable technology analysis for their entire production line.

Turning woody biomass into pellets requires intense pulverizing by hammer mills that routinely operate at 100 decibels. Renewable Energy says they will operate their hammer mills continuously. Title IV of the Clean Air Act describes noise pollution as a significant health hazard leading to hearing loss, declined cognitive abilities, stress related illnesses, high blood pressure, speech interference, sleep disruption and loss of productivity.

Hoquiam's three schools are less than 1 mile from the proposed facility. I would ask ORCAA to evaluate Renewable Energy's application from a noise pollution perspective or engage with another state agency that can do so. If Renewable Energy is allowed to resubmit their application, ORCAA should use the intervening time to establish baselines for local air quality and noise levels.

Additional air monitoring should be deployed to determine Hoquiam's baseline independent of activities in Aberdeen. A year's worth of monitoring is typical for establishing baselines, so I am told.

I also have economic concerns. Renewable Energy's competition for woody biomass will raise the cost of these feedstocks for other existing businesses. At the same time, wood pellet plants pay low wages for both hourly and skilled labor compared to other jobs in the forest products center. That is a bad combination for the local economy.

Well, some of the backers of this proposal are experienced in receiving government subsidies and started speculating the biomass projects. I fear they lack the experience necessary to make the operation, of the size they are proposing, a going concern. I am concerned that Hoquiam is being taken for a ride.

ORCAA Responses

Please refer to ORCAA's response to item #1, #2, #3, #6 in the Summary.

Consideration of the effects regarding employee wages and local economics is outside the criteria ORCAA can consider when making the decision to approve or deny a Notice of Construction (NOC) application (see ORCAA's response to item #7 in the Summary).

The purpose of ORCAA's air quality monitor at Harbor High School is to measure ambient $PM_{2.5}$ (a criteria air pollutant) to ensure the region meets the NAAQS. The monitors are not collecting fence line emission data of any one source. PNWRE is not subject to any clean air act rules requiring placement of a fence line monitor.

Comment #9 Arnold Martin (verbal comment, 1/16/2024)

My comment regards basically the location of the plant. It is close to the wildlife refuge. Grays Harbor Audubon Society put in festivals for this and the noise in the air is going to be rather impressive.

The point I want to take is looking at the CO2 emissions. And this is a greenhouse gas. This greenhouse gas it gets the limit for source threshold of 100,000, they are at 163,592 tons per year and that really, I don't think includes the greenhouse gases resulting from the CO2 coming from the 129 trucks a day that get unloaded.

My big problem is greenhouse gases and the other problem I have is that I don't see any regulation of that in the limit and one of the next comments is going to be the location of the sensors (garbled)…I'll let the experts on that.

ORCAA Responses
Please refer to ORCAA's response to item #6, #7, and #8 in the Summary.

– End Comments and Responses from the January 16, 2024 Public Hearing –

Comments submitted via email

Comment #10: Kate Lunceford (emailed comment 1/8/2024)

I am writing to say I am very concerned about the proposed wood pellet mill in Hoquiam. The proposal misleads you on wood sourcing. Wood pellet plants can't remain profitable without buying whole trees. A mill has to process almost 900,000 tons of wet wood in order to produce 440,000 tons of dry pellets for export. That's 900,000 tons of induced logging demand. PNWRE claims it is going to source that material from mill waste and 'forest slash'; however, real-world experience shows that wood pellet plants inevitably increase the demand for wood fiber, which results in increased logging, clearance of forest areas, and degradation of the remaining forest stock for export.

Please do not issue a permit on this facility.

ORCAA Responses
Please refer to ORCAA's response to item #6 and #7 in the Summary.

Comment #11: Patrick Anderson - Southern Environmental Law Center (emailed comment 1/8/2024)

In July 2023, Pacific Northwest Renewable Energy, LLC (PNWRE) submitted an air permit application for a 440,800 tpy wood pellet manufacturing facility to be located in Hoquiam, Washington. Although this industry has been operating in US South for more than a decade, this would be the first industrial-scale, export-based wood pellet plant in the US Pacific Northwest.

As attorneys with the Southern Environmental Law Center and Environmental Integrity Project, we have worked extensively on air quality issues at wood pellet plants since 2017, reviewing permits and applications for more than 35 pellet plants located in a dozen states. We have also compiled a database of more than 50 stack tests from these facilities and discovered thousands of tons of excess VOC and HAP emissions, resulting in more than $6 million in environmental penalties and the installation of new pollution control technology at numerous plants.[1]

We write now because PNWRE has ***vastly underestimated HAP emissions****. The company claims the facility will emit only 1.3 tons of HAPs per year; this estimate is deeply flawed and based on incorrect or inappropriate emission factors—mostly AP-42 emission factors that are not specific to wood pellet plants. Recent stack tests and air permit applications that are specific to this industry show that a facility this size and with the controls proposed by PNWRE will emit*

[1] *See, e.g.*, https://www.nola.com/news/environment/british-company-agrees-to-pay-3-2-million-for-air-pollution-atlouisiana-wood-pellet/article_c451e610-4352-11ed-8a54-43df54e33cd5.html.

40 tons or more of total HAPs per year, including more than 20 tons of methanol and a significant amount of the particularly toxic HAP acrolein.

As just one example, the pellet manufacturer Drax, which operates 18 industrial-scale pellet plants, recently applied for an air permit for a 496,000 tpy facility in Longview, Washington. Drax estimates that its facility—which is comparable in scale, control technology, and feedstock to PNWRE—will emit 49 tons of HAPs.[2] This is well in line with numerous other recent applications and stack tests at wood pellet plants,[3] and suggests PNWRE will have the potential to emit about 43 tons of HAPs per year.

Additionally, PNWRE intends to operate wet (aka green) hammermills that will not be vented to any VOC controls and has improperly listed these units as not emitting any VOCs and HAPs. Most comparable mills vent these units to the furnace or dryer RTO for VOC and HAP control, and stack tests on uncontrolled wet hammermills[4] show PNWRE's wet hammermills will emit up to 60 tons of VOCs and six tons of HAPs (in addition to the emission rates calculated above).

Given the foregoing, PNWRE's application is deficient and incomplete. Specifically, as a major source of HAPs, the company must submit a case-by-case Maximum Achievable Control Technology analysis. Additionally, the company's air toxics Ambient Impact Review is wholly irrelevant as it is based on inaccurate HAP emission rates. Finally, the company's BACT analysis for the wet hammermills is incomplete for failing to assess VOC controls.

These are only the most significant issues identified in PNWRE's application. We believe, however, that at minimum ORCAA must withdraw PNWRE's application from notice and comment until the company revises its application to address these issues. Finally, we are happy to share any of the resources that we have gathered concerning this industry.

ORCAA Reponses

Please refer to ORCAA's responses to items #1, #2, and #3 in the Summary.

Comment #12: Jean Davis (emailed comment 1/20/24)

I am completely opposed to this new facility being considered in Hoquiam, WA, for many reasons.

Air pollution: PNWRE claims "Emissions from the new stationary source will not cause or contribute to a violation of any ambient air quality standard;" The Southern Poverty Law

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[2] Letter from Trinity Consultants, on behalf of Drax, to Danny Phipps, Air Quality Engineer, Southwest Clean Air Agency, at Attachment 2: Updated Potential Emission Calculations and Stack Test Data, Table C-2b (Mar. 29, 2023) (Attachment A). Available via Sharefile link at: https://southernenvironment.sharefile.com/dsa745e15d0ed64ba0bcb8a6fe2cc87102.

[3] *See, e.g*. Enviva Pellets Waycross, Application for Title V Permit Significant Modification Without Construction, at Appendix C (Oct. 2021) (Attachment B) (Showing that at a production capacity of 920,000 tpy, the facility emits 79 tons of HAPs. This ratio equates to 38 tons of HAPs at PNWRE. Enviva, which operates 10 pellet plants, has used these same emission factors in recent applications in Alabama and Mississippi as well); *see also* Drax Amite BioEnergy, Title V Air Permit Application, at Appendix B (Feb. 2022) (Attachment C) (Showing 40 tons of HAPs emitted by the facility). These applications and related stack tests are available on Sharefile at: https://southernenvironment.sharefile.com/d-sa745e15d0ed64ba0bcb8a6fe2cc87102.

[4] Enviva Pellets Wiggins, LLC, Air Emission Test Report (Oct. 31, 2013) (Attachment D); Enviva Pellets Amory, LLC, Air Emission Test Report (Oct. 31, 2013) (Attachment E). Available on Sharefile at: https://southernenvironment.sharefile.com/d-sa745e15d0ed64ba0bcb8a6fe2cc87102

Center has been following this issue since 2017 and has found that "PNWRE has vastly underestimated HAP emissions." In the letter from SPLC to you dated January 8, 2024 this claim is detailed with specifics found from other similar plants around the country. Believe them!

Air toxics: The same letter to you from SPLC also addresses this, to the detriment of the PNWRE application.

A huge concern is the claim that this mill will source their material from mill waste and forest slash. With the amount of pellets proposed to be manufactured, actual trees will soon need to be felled to fill this need. More clear-cutting, more loss of carbon-absorbing adult trees.

There are many other concerns. The loss of clean air in our community, the noise pollution that will occur, the climate impacts of these pellets being made to be transported to Asia as well as the climate impacts of the manufacture are huge.

Please withdraw this application until the company revises its application to address these concerns.

ORCAA Reponses

Please see ORCAA's response to items #1, #2, #6, #7, and #8 in the Summary.

Comment #13: James Wesley (emailed comment 1/11/24)

I am writing you after reading your approved preliminary application for the proposed wood pellet production plant in Hoquiam. I am appalled to discover the total lack of scientific facts in this project application associated with detrimental air quality impacts caused by this project proposal on local, regional, and global air quality. ORCAA has a long way to go in recognition of serious/viable threats to our air quality; especially on the heels of the recently announced fact that 2023 was the hottest year on record and that 2024 is on track for the same factual outcome in large part due to the explosive development of industrial sources of atmospheric pollution such as this pellet plant and ALL of its attendant air polluting source points (many of which are not even addressed) in your permit approval.

I ask you to reconsider your permit approval of this project by unconditionally denying this application WITH PREJUDICE. It is ludicrous to imagine that such a proposal could ever get this far in your screening process given the wealth and breadth of widely-known and accepted causal facts governing our diminished air quality.

ORCAA Responses

Please refer to ORCAA's response to Item #7 in the Summary.

Comment #13: Lilias Green (emailed comment 1/11/24)

As a former full time and current part time resident of the North Olympic Peninsula, I am appalled at the proposed prospect for destruction of natural forests and increase in pollution connected with the manufacture of wood pellets. And for what? To meet European carbon neutral goals!

Once again, Europeans are exploiting American lands and air quality, disrupting communities of native people for their own profit and greed. And for what? Jobs? If our area is no longer livable? And

what about the depletion for jobs from tourism, visiting outdoor enthusiasts, fisheries? Or the quality of life, both economic and other benefits we enjoy from our lovely and healthy natural environment? If you have ever lived in a neighborhood where some residents burn wood pellets to heat their homes, you know the chemical and throat burning air they generate.

I urge you to carefully consider what the dust and fumes from large scale manufacture will do to our air and water, the health of our neighbors, and refuse permission for anything connected with these industries that will destroy our natural beauty and increase pollution.

Thank you for your attention

ORCAA Responses

Please refer to ORCAA's response to item #6, #7, and #8 in the Summary.
Concerns related to tourism, job availability, and European carbon neutral goals are outside the criteria ORCAA can consider when making the decision to approve or deny a Notice of Construction (NOC) application (see ORCAA's response to item #7 in the Summary).

Comment #14: Cathy Seitz (emailed comment 1/12/24)

This letter concerns the Notice of Construction (23NOC1606) for the proposed wood pellet plant in Hoquiam, WA. I am a fourth generation Oregonian and a fifth generation Washingtonian, currently residing in Vancouver, WA.

My grandfather was a logger. For decades, as a concerned citizen and nature lover, I have been following, and occasionally joining with groups to oppose, the decimation of the forests which once were the northwest's greatest pride. I was already deeply concerned about the rise of biomass as a supposedly renewable fuel for electricity, when I heard that a wood pellet plant was being proposed in Washington. I was told they were passing themselves off as not being a high level polluter, and not warranting the scrutiny they actually deserved. It has long been my experience with the forest products industry, that without citizen involvement they often get away with falsifying their potential impact on the environment in order to get a pass from the gatekeepers.

I have read a number of testimonials from outraged citizens of our southeastern states, regarding the horrific air pollution impact that wood pellet plants have on their communities. Once such a plant is established, it is very difficult to get it shut down. Half-truths and sometimes no truth at all: Public debates pollution limits at Enviva's wood pellet plant in Hamlet | NC Newsline. I include the text of this article at the end, for ease of printing.

I have been told that some locals are being led to believe this plant would offer jobs. If this has any legitimacy, one should consider the jobs lost, if the plant is built and scares off tourists and residents with smelly air and loud noises.

The proposed pellet plant is almost certainly a major source of hazardous air pollutants, and should be required to use "Maximum Achievable Control Technology" during construction and operation.

Thank you for your service, and your time and attention.

NC Newsline

Half-truths and sometimes no truth at all: Public debates pollution limits at Enviva's wood pellet plant in Hamlet

By: Lisa Sorg - November 9, 2018 10:01 am

Enviva is building a wood-pellet plant north of Hamlet. The company is requesting a modification to their air permit to allow them to increase production while restricting certain hazardous pollutants to less than 250 tons per year.

About a quarter-mile off NC 177 in Richmond County, just north of Hamlet, skeletons of buildings gouge the horizon, as bulldozers coerce the dirt into mounds and flats. This is the site of Enviva's new wood pellet production plant, its fourth in North Carolina. Logs timbered from area forests are chopped up, dried and made into pellets that resemble dog kibble. Those pellets then begin their long journey, far from their birthplace in North Carolina forests.

At the nearby CSX terminal, they are transported by diesel train to the port of Wilmington, then loaded on ships powered by sulfur-spewing, low-grade bunker fuel that are bound for the United Kingdom and the European Union. Upon arrival, the pellets are again transported by rail or truck to power plants, where companies, benefiting from large government subsidies, burn them instead of coal.

Every step of wood pellet production carries significant environmental and climate consequences, not only for the neighbors of the plant but also the inhabitants of this planet. The Hamlet plant — and all of Enviva's North Carolina facilities — are located in predominantly low-income communities of color that will bear the burden of its air pollution. When trees are timbered from North Carolina forests, they exhale carbon dioxide, a greenhouse gas that contributes to climate change, into the air. Replanting cannot keep pace with the timbering in terms of the carbon dioxide balance. Once abroad, when wood pellets are burned, they produce more carbon dioxide than coal, further contributing to climate change. In turn, those changes cause extreme weather, like Hurricane Florence, which devastated eastern and southeastern North Carolina just two months ago.

At a public hearing last night in Hamlet, about 200 people heard about Enviva's request to the NC Department of Environmental Quality to modify its air permit in more than a dozen ways. But most significantly, the Maryland-based company wants to increase its production of pellets from 537,000 oven-dried tons per year to 625,000. It also wants to tinker with the softwood/hardwood mix.

These seem like relatively small adjustments, but they can result in greater amounts of pollutants, particularly volatile organic compounds (VOCs), like formaldehyde and benzene. So Enviva is proposing to install controls that the company says will cap pollution to less than 250 tons per year.

But there are legitimate questions as to the accuracy of Enviva's claims. Patrick Anderson, an attorney with the Environmental Integrity Project, told DEQ that it was wrong to rely on Enviva's numbers, which are based, he said, on a single test out of Florida. "We reviewed the results," Anderson said, "and the amounts were three to four times higher. The discrepancy has not been explained."

[easy-tweet tweet="It's time to pump the brakes on this industry"]

Inside Cole Auditorium at Richmond Community College, the crowd was divided along predictable lines, with predictable arguments coming from proponents. On one side were the loggers, foresters, economic developers, the president of Richmond Community College, state lawmakers, and industry reps. Churchgoers and a representative from Habitat for

Humanity — both of which received tax-deductible monetary donations from the company — vouched for Enviva's corporate citizenship. State Sen. Tom McInnis, apparently emboldened by his re-election, criticized "outside groups" who were in attendance. (He did not single out the US Industrial Pellet Association, based in Virginia, which had a spokeswoman there.) Many supporters promised the company would bring jobs to the economically depressed area; over the evening, 80 positions ballooned to 400, accounting for a "multiplier effect."

Yet Enviva has yet to jump-start the local economies in the counties where it has plants. The poverty rate in Hertford County, where Enviva operates a plant in Ahoskie, is 24.4 percent, according to 2016 census figures. In 2011, the year the plant opened, the rate was 24.7 percent. Hertford County gave the company $1.5 million in performance-based incentives to come to the area.

Enviva has operated a plant in Garysburg in Northampton County since 2013. Since that time, the poverty rate has actually increased from 26.3 percent to 28.5 percent.

In Sampson County, where the percentage of people living at or below the federal poverty line rose from 21 percent in 2012 to 24 percent in 2016 when the plant opened, the impact is not yet clear. Sampson County officials provided $2.8 million in performance-based tax incentives to lure the company. John Swope, executive director of the Sampson County Economic Development Commission, said that "there have been no disappointments. We need more companies like Enviva."

Proponents also emphasized the importance of the timber industry to the state's economy. "To save a resource you use a resource," said Euell Smith of Carolina Loggers Association. "To save fish, you have to eat fish. To save a forest, you have to use it."

The pretzel logic of that argument aside, Smith also cited the 18 million acres of woodland in North Carolina as "evidence when you manage forests, you have stronger forests." However, not all acres are equal, particularly in terms of carbon dioxide. Young trees contain and absorb less carbon dioxide than older stands. In addition, many of these replanted forests are monocultures and do not provide the biological diversity and habitat as a natural forest. Newly planted forests don't provide the same level of flood control.

Jessica Marcus of the US Industrial Pellet Association said sustainable timbering provides a financial incentive for landowners to "keep forests as forests rather than develop them." Marcus also repeated the erroneous industry talking point that "customers on the other side" — that is, in the UK — "reduce their carbon emissions." Bill Schlesinger, a former EPA Science Advisory Board member and Duke University professor, recently blogged about his experience advising the agency on the wood-pellet industry and carbon emissions. Former EPA administrator Scott Pruitt decided to classify wood-pellets as "carbon-neutral," even though that is not supported by science. "I can't say there is evidence that politics were involved—such as lobbying by the forest products industry," Schlesinger wrote, "but it sure looked like it. Make America Great Again by harvesting trees."

[easy-tweet tweet="DEQ fined Enviva's Sampson plant $5,000 earlier this year"]

The environmental groups of which Sen. McInnis spoke were allies of many of the plant's neighbors, joined by several scientists, attorneys and other concerned citizens, who pleaded with DEQ to deny the permit until its terms are more closely reviewed. They want the agency to consider its decision in light of the governor's recent executive order on climate change. They also want DEQ to conduct fence line monitoring, instead of arranging for inspections that the company will know about in advance and for officials to conduct a more thorough

environmental justice analysis before granting the permit. (DEQ has issued a preliminary environmental justice snapshot; it does not include Dobbins Heights, a community of color that is beyond the two-mile radius analyzed.) They want a fuller analysis of the cumulative impacts of the many major pollution sources in the area: the rail line, the Perdue chicken plant, Duke Energy's natural gas operations and the proposed connection to the Atlantic Coast Pipeline.

Adam Collette of the Dogwood Alliance, which has worked with many Dobbins Heights residents, asked DEQ to deny the permit in its current form. "We're hearing the same arguments about jobs and markets," he said. "I've followed this industry for five years. We've caught them polluting air and logging wetlands. they evade the truth. It's time to pump the brakes on this industry."

"Is Enviva putting in these controls because they got caught?" asked Debra David, a resident of nearby Dobbins Heights, a community of color. David was referring to the emissions violations that occurred at Enviva's Sampson plant; DEQ fined the company $5,000 earlier this year. Bruce Ingle, regional supervisor at DEQ's Mooresville office, replied that every facility is required to conduct an emissions test. The Sampson County plant failed that test, and the agency required it to install additional controls, similar to those proposed for Hamlet.

These pollution controls are critical for the wellbeing of the residents of Richmond County. It ranks 91st among the state's 100 counties in health outcomes and 89th in life expectancy. Several of the VOCs that would be emitted, such as benzene, are known to cause cancer. "I ask you, DEQ," said Daniel Parkhurst, policy manager for Clean Air Carolina, "to put the health of the families and children first."

ORCAA Responses

Please refer to ORCAA's response to Item #2, #3, #6, #7, and #8 in the Summary.

Comment #15: Arthur (RD) Grunbaum on behalf of Friends of Grays Harbor (FOGH) (emailed comment 1/12/2024)

Thank you for this opportunity to comment on the Notice of Construction for Pacific Northwest Renewable Energy, LLC wood pellet manufacturing facility in Hoquiam, Washington (Grays Harbor County) as referenced above.

FOGH is a broad-based 100% volunteer tax-exempt 501(c)(3) citizens group made up of crabbers, fishers, oyster growers and caring citizens. The mission of FOGH is to foster and promote the economic, biological, and social uniqueness of Washington's estuaries and ocean coastal environments. The goal of FOGH is to protect the natural environment, human health and safety in Grays Harbor and vicinity through science, advocacy, law, activism, and empowerment.

We incorporate by reference those comments made by Diane Dick, Peter, Riggs, Pivot Point, Grays Harbor Audubon, Natural Resources Defense Council, Wild Orca, Twin Harbors Waterkeeper, and Citizens for a Clean Harbor.

We find that this proposal is woefully inadequate in making sure that irreparable damage to the health, welfare, safety to humans and wildlife in an hemispherically important area. The proposal plans to locate its manufacturing plant adjacent to the Grays Harbor National Wildlife Refuge and within 5,000+/- feet of Emerson Elementary School, Hoquiam Middle School, and Hoquiam High School serving a population of over 1,100 students and staff.

The proximity of the PNWRE facility to schools raises serious concerns about potential dangers for attending children, both indoors and outdoors. The potential risks include, but are not limited to:

Air Pollution:

- *Particulate matter (PM): Emissions from the facility, particularly PM2.5, can easily travel and penetrate deep into children's lungs, leading to respiratory problems like asthma, bronchitis, and reduced lung function. One in 11 Grays Harbor citizens suffer from asthman. Children are more susceptible to the harmful effects of PM due to their developing lungs and higher breathing rates.*
- *Volatile organic compounds (VOCs): VOCs released from the facility can irritate airways, contribute to ozone formation (another lung irritant), and potentially impact children's neurological development.*
- *Hazardous air pollutants (HAPs): Even though individual HAP emissions might be stated to be below major source thresholds, exposure to even small amounts of certain HAPs can increase children's risk of cancer, developmental problems, and other health issues.*

Noise Pollution:

- *Operation of the facility can generate constant noise pollution, including machinery noise, truck traffic, and emissions control equipment. This can disrupt sleep, learning, and concentration, negatively impacting children's academic performance and mental well-being.*

Fire Risk:

- *The possibility of fires involving large fuel storage piles presents a direct safety risk to students and staff at the schools. Additionally, smoke and harmful pollutants from a fire could significantly impact air quality in the surrounding area.*

Psychological Stress and Environmental Justice:

- *Knowing about the potential health risks from the facility can cause anxiety and stress among children and their families. This could impact their mental health and well-being, especially for vulnerable populations already facing environmental disadvantages.*

Indoor Concerns:

- *Airborne pollutants from the facility might infiltrate nearby buildings, including the schools, posing a risk to indoor air quality and impacting children's health even within classrooms.*

The potential health risks and environmental concerns associated with the PNWRE facility's proximity to schools are significant and warrant careful consideration. A thorough environmental impact assessment that specifically addresses the risks to children's health is crucial before making any decisions regarding the facility's location or operation.

In addition, the location of a large wood pellet manufacturing facility adjacent to the Grays Harbor National Wildlife Refuge would likely present a significant problem for the over 500,000 shorebirds that use the area as a stopover point during their twice a year migration. The potential risks include but are not limited to:

Air quality:
Increased air pollution from PM2.5, VOCs, and NOx can:

- *Directly impact the respiratory health of migrating birds, reducing their stamina and survival rates.*
- *Reduce visibility, making it harder for birds to navigate and find food.*
- *Contaminate food sources like insects and shellfish with fine particles, affecting the birds' nutritional intake.*

Water quality:
Potential spills or leachate from the facility could:
- *Contaminate the Grays Harbor Estuary and nearby wetlands, poisoning fish and invertebrates that serve as food for shorebirds.*
- *Increase turbidity, reducing the ability of birds to see prey in the water.*
- *Disrupt the delicate balance of the ecosystem, impacting food availability and habitat quality.*

Noise and light pollution:
Operation of the facility can generate noise and light at night, potentially:
- *Disrupt sleep patterns and migration behaviors of birds.*
- *Discourage birds from stopping at the refuge by creating an unsuitable environment.*

Clogging and smothering:
- *Large amounts of wood pellet manufacturing particulate matter (WPMPM) can physically clog and smother biofilm, reducing its availability to shorebirds. This is especially detrimental during low tide when food resources are limited.*

Alteration of biofilm composition:
- *WPMPM can alter the composition of the biofilm community, favoring bacterial groups that are less palatable or nutritious for shorebirds. This can lead to decreased food intake and even malnutrition.*

Chemical contamination:
- *Wood pellets may contain trace amounts of contaminants like pesticides or heavy metals. These can be absorbed by biofilm-forming bacteria and subsequently ingested by shorebirds, potentially leading to bioaccumulation and health problems.*

Reduced oxygen levels:
- *When WPMPM decomposes, it can consume oxygen in the water column. This can create areas of low oxygen which can stress or even kill biofilm organisms and fish, further reducing food availability for shorebirds.*

The potential for habitat destruction:
- *Even if the facility itself is not directly located within the refuge boundaries, construction and operation could impact nearby habitats used by shorebirds for feeding, resting, and nesting.*

Cumulative effects:
- *The combined impact of the facility with other existing or planned industrial activities in the area could further exacerbate the negative consequences for birds.*

The placement of a large wood pellet manufacturing facility adjacent to the Grays Harbor National Wildlife Refuge raises serious concerns about the health and well-being of the hundreds of thousands

of shorebirds that depend on this critical stopover point. A thorough environmental impact assessment (EIS) that considers both air and water quality, noise, and light pollution, as well as potential habitat destruction and cumulative effects, is crucial before making any decisions regarding the facility's location.

It is essential to prioritize the protection of this important wildlife refuge and the migratory birds that rely on it. These combined factors could significantly decrease the number of shorebirds that successfully use the Grays Harbor National Wildlife Refuge as a stopover point. This could have cascading effects on the entire migratory flyway, impacting populations across continents.

The above concerns, in part, present our concerns about the location and operation of the proposed pellet plant. The potential health risks associated with a large wood pellet manufacturing facility in Hoquiam are serious and warrant careful consideration. A thorough environmental impact assessment, public input, and implementation of strict environmental regulations and controls are crucial to minimize the negative impacts on the health and well-being of Grays Harbor citizens. It's important to consider the combined effect of emissions from this facility with existing or planned industrial activities in the area. The cumulative impact could exacerbate negative consequences for air quality and public health. Robust monitoring and enforcement mechanisms are essential to ensure the facility complies with emission limits and operates in a way that minimizes environmental and health impacts.

We are also concerned about the placement and scarcity of monitoring systems and how they would capture emission from the proposed plant.

ORCAA Responses

For the section on air pollution and air quality raised by the commenter: please refer to ORCAA's response to item #7 in the Summary.

Fire Risk, psychological stress, and indoor air concerns are outside the criteria ORCAA can consider when making the decision to approve or deny a Notice of Construction (NOC) application (see ORCAA's response to item #7 in the Summary).

For the concerns raised relating to shorebirds: please refer to ORCAA's response to item #6 in the Summary.

Regarding an environmental impact assessment (EIS): The City of Hoquiam (Hoquiam) was determined to be lead agency for this project under the rules for determining lead agency in Chapter 197-11 WAC. Per WAC 197-11-050, the lead agency shall be the *only* agency responsible for the threshold determination and preparation and content of environmental impact statements. As Lead Agency, Hoquiam determined the proposal will not have a probable significant impact on the environment, and that an EIS per RCW 43.21C.031 is not required. It is ORCAA's understanding that there are no ongoing appeals related to this threshold determination, and therefore, the DNS issued by the Responsible Official is final and binding on all agencies (including ORCAA) per WAC 197-11-390. Comments or questions relating to the Lead Agency's review should be directed to the Lead Agency– Hoquiam–as it is outside the scope of this comment period for ORCAA's Preliminary Determination.

Regarding the concern about the placement and use of emission monitoring systems and how they would capture emissions from the proposed plant: Please refer to ORCAA's response to Comment #2:

Jean Davis (written comment, 1/16/2024) and Comment #3: Tammy Domike (verbal comment, 1/16/2024)

Comment #16: Gay Gordon (emailed comment 1/12/2024)

This new wood pellet manufacturing facility proposed by Pacific Northwest Renewable Energy will irrevocably harm our climate, communities, and forests.

Needing pellets to burn will result in more Logging not less.

Toxic chemicals & more dust will increase Air Pollutants causing Greenhouse Gas Emissions, serious health problems & damage our beautiful surroundings.

Increased Trucking and pellet production will run around the clock creating Constant Noise above safe thresholds so close to the public school which will interfere with teachers' and students' hearing and their ability to concentrate.

Increased Shipping of these products will worsen water pollution damaging the marine environment.

Thank you for registering & considering my opinion.

ORCAA Responses

Please refer to ORCAA's responses to Item #6, #7, and #8 in the Summary.

Comment #17: Rosemary Sikes (emailed comment 1/13/2024)

I oppose the construction of a new wood pellet manufacturing facility in Hoquiam. This new wood pellet manufacturing facility proposed by Pacific Northwest Renewable Energy (PNWRE) will irrevocably harm our air, climate, communities, and forests.

Manufacturing wood pellets produces harmful pollutants like nitrogen oxides, volatile organic compounds, hazardous air pollutants, and microscopic dust particles. PNWRE claims the facility will emit only 1.3 tons of HAPs per year, while stack tests and air permit applications of similar size and controls show it will emit at least 40 tons of Hazardous Air Pollutants (HAPs). The pollutants, which include formaldehyde, acrolein, and methanol, are toxic or can cause cancer, even in small amounts. In particular, they cause health problems for children, the elderly, and people with asthma or COPD.

The project would increase logging rates in Washington's forests, both on the Olympic Peninsula and in the Willapa Hills.

Significant greenhouse gas emissions and air pollution would be emitted at every step–from cutting forests, trucking cut trees long distances in hundreds of daily trips, chipping wood and producing pellets, and shipping pellets overseas to countries in Asia and Europe that currently incentivize woody biomass energy.

The facility will run for 8,000 hours per year. This would mean an increase in heavy truck traffic and hammermill pounding nearly every day. Hammermills routinely operate at 100db levels and Hoquiam schools are less than one mile from the proposed facility.

These wood pellets would be manufactured to ship overseas to be burned in converted coal-fired power plants. This would create more ship traffic, dredging, water pollution, and harm to marine life. We need to protect the North American green sturgeon that live in these waters and are threatened under the Endangered Species Act.

Please do not permit this new wood pellet manufacturing facility proposed by Pacific Northwest Renewable Energy.

ORCAA Responses

Please refer to ORCAA's response to items #1, #2, #6, #8 in the Summary.

Commenter #18: JJ Lindsey (emailed comment 1/13/2024)

*The wood pellet manufacturing facility proposed by Pacific Northwest Renewable Energy (PNWRE)--itself a corporation named with unfortunate hypocrisy--**is a project we do NOT want.***

It will harm our community, our forests, and is a terrible idea in this climate crisis. I can appreciate that we need more job opportunities in our community, but we need jobs that do NOT come at the expense of our health--our bodies, forests, air, water, marine life.

I've been following the rapid incursion of wood pellet manufacturing in the west. Wood pellet companies have run roughshod over the SW United States, and now as they run out of areas to exploit, they've turned to the amazing and grand temperate rainforests of the Northwest.

***Let's get one thing straight: there is nothing 'renewable' about wood pellets, and we know that their cumulative effect is worse than mining for coal.** To put further pressure on our largely devastated mature and old growth forests would be unconscionable...it's hard enough to get logging to transform so that we can begin to build back our carbon-absorbing and air-cleaning forests, but to add wood pellet industry to this would be major head-in-the-sand.*

Manufacturing wood pellets produces harmful pollutants like nitrogen oxides, volatile organic compounds, hazardous air pollutants, and microscopic dust particles. PNWRE claims the facility will emit only 1.3 tons of HAPs per year, while stack tests and air permit applications of similar size and controls show it will emit at least 40 tons of Hazardous Air Pollutants (HAPs). The pollutants, which include formaldehyde, acrolein, and methanol, are toxic or can cause cancer, even in small amounts. In particular, they cause health problems for children, the elderly, and people with asthma or COPD.

This is poison!!

Significant greenhouse gas emissions and air pollution would be emitted at every step–from cutting forests, trucking cut trees long distances in hundreds of daily trips, chipping wood and producing pellets, and shipping pellets overseas to countries in Asia and Europe that currently incentivize woody biomass energy.

We do not want to be feeding a dirty and destructive biomass industry. All the hypocrisy around this being a 'clean', 'green', 'renewable' form of energy is hogwash. This is logging for wood pellets, which burn dirty, and dump massive amounts of carbon into the atmosphere.

These wood pellets would be manufactured to ship overseas to be burned in converted coal-fired power plants. This would create more ship traffic, dredging, water pollution, and harm to marine life. We're already decimating the seas, our sturgeon, our orcas, our whales and other marine life.

How about the noise?

The facility will run for 8,000 hours per year. This would mean an increase in heavy truck traffic and hammermill pounding nearly every day. Hammermills routinely operate at 100db levels and Hoquiam schools are less than one mile from the proposed facility.

This is unacceptable for our children and our community.

Please....

Wood pellet manufacturing decimates the locales it occupies.

There are better ways to provide jobs to our area.

Do NOT LET THIS FACILITY COME INTO OUR REGION!!

Thank you for acting on behalf of our community's BEST interests,

ORCAA Responses
Please refer to ORCAA's response to items #1, #2, #6, #7, #8 in the Summary.

Commenter #19: Rebecca Lexa (emailed comment 1/15/2024)

I am writing with concerns about the wood pellet facility proposed by Pacific Northwest Renewable Energy. While wood pellets can be a way of keeping sawdust out of the waste stream, as burnt fuel they add more carbon load to the atmosphere and are not considered truly clean compared to solar or wind energy. Moreover, the facility would be a significant producer of carbon emissions and other physical pollutants, as well as noise pollution which can have detrimental effects on both human and nonhuman residents of the area. I request that this project NOT go forward.

Thank you for your consideration.

ORCAA Responses
Please refer to ORCAA's response to items #6, #7, and #8 in the Summary.

Commenter #20: Pamela Ives (emailed comment 1/16/2024)

Please deny approval to the proposed "biomass" plant planned for Hoquiam.
Plants of this type have been proven to produce unacceptable levels of air pollution, far in excess of their claims. The plant would be located close to schools, exposing our children to toxins that cause life altering health issues, including, but not limited to lung damage and cancers. Personally, my family moved to Grays Harbor because I could no longer breathe properly in Seattle. After a day of house hunting on the Harbor I didn't need to use my inhaler even once.

Moving materials to and from the proposed plant will put scores of heavy trucks on our roads, adding additional greenhouse gasses, noise pollution and traffic. Storing the finished pellets comes with hazards as well. Piles of pellets generate enough heat internally to cause them to spontaneously combust. Case in point, in 2017 a storage facility in Port Arthur, TX had a spontaneous fire that burned for 102 days. The fine dust from the pellets is highly flammable and potentially explosive.

Additionally, production of these pellets would lead to further clear cutting of our forests with all its undesirable impacts.

The southern US has already felt the harmful results of plants like the one proposed for Hoquiam. Please review the reports and studies they provide
https://www.southernenvironment.org/topic/biomass-energy-threatens-southernforests-and-communities/

There are better energy industries that our area could benefit from with far fewer undesirable outcomes.
The people of Grays Harbor want clean air and clear waterways, a pellet plant is a long term threat to both.

ORCAA Responses
Please refer to ORCAA's response to items #6, #7, and #8 in the Summary.

Fire hazards are beyond ORCAA's authority and expertise. Managing fire hazards are a matter for the City of Hoquiam and/or the Washington Department of Labor & Industries.

Commenter #21: Arthur Grunbaum (emailed comment 1/16/2024)

Good evening and thank you for this additional opportunity to comment on the proposed air quality permit for Pacific Northwest Renewable Energy, LLC. My name is Arthur Grunbaum, and I am the current President of FOGH (Friends of Grays Harbor). I have already submitted written comments via email and I have brought a printed copy for your convenience. I do have some additional points that I think need to be considered when reviewing this potential permit.

While sea level rise is not an issue that ORCAA would normally concern itself in its review, it is significant with regards to the location and operation of the proposed pellet plant. The proponent has stated that there will be wood chip piles stored outdoors. Unfortunately, nowhere in the SEPA documents, nor the NOC (Notice of Construction) has sea level rise been discussed or planned for, at least as far as I've been able to discover.

The rise of groundwater because of sea level rise will change the environment of the wood chip piles. Moisture level increases and temperature depending on the wood species can increase the types of mold and fungi that develops in and around these piles. Some of these organisms can produce mycotoxins, which are harmful and can cause respiratory problems, allergic reactions, and even neurological issues. During dry periods, mold and fungal spores can easily become airborne and travel significant distances, impacting air quality well beyond the immediate vicinity of the stockpiles. Remember, there are three schools with over 1,000 students and staff within approximately 5,000 feet of the project. In addition, this would have a potential to negatively impact nearby aquatic and avian species.

We believe that a full environmental impact assessment of this and other issues must be made prior to granting any permits to begin this project.

Thank you.

ORCAA Responses

Concerns and impacts related to sea level rise are outside the criteria ORCAA can consider when making the decision to approve or deny a Notice of Construction (NOC) application (see ORCAA's response to item #7 in the Summary).

Regarding concerns related to health impacts (human, avian, and marine): Please refer to ORCAA's response to items #6 and #7 in the Summary.

Hoquiam was Lead Agency for SEPA. Please refer to ORCAA's response to Comment #15: Arthur (RD) Grunbaum on behalf of Friends of Grays Harbor (FOGH) (emailed comment 1/12/2024).

Commenter #22: Arthur Grunbaum (emailed comment 1/16/2024)

Thank you for this opportunity to comment on the Notice of Construction for Pacific Northwest Renewable Energy, LLC wood pellet manufacturing facility in Hoquiam, Washington (Grays Harbor County) as referenced above.

FOGH is a broad-based 100% volunteer tax-exempt 501(c)(3) citizens group made up of crabbers, fishers, oyster growers and caring citizens. The mission of FOGH is to foster and promote the economic, biological, and social uniqueness of Washington's estuaries and ocean coastal

environments. The goal of FOGH is to protect the natural environment, human health and safety in Grays Harbor and vicinity through science, advocacy, law, activism, and empowerment.

We incorporate by reference those comments made by Diane Dick, Peter, Riggs, Pivot Point, Grays Harbor Audubon, Natural Resources Defense Council, Wild Orca, Twin Harbors Waterkeeper, and Citizens for a Clean Harbor.

We find that this proposal is woefully inadequate in making sure that irreparable damage to the health, welfare, safety to humans and wildlife in an hemispherically important area. The proposal plans to locate its manufacturing plant adjacent to the Grays Harbor National Wildlife Refuge and within 5,000+/- feet of Emerson Elementary School, Hoquiam Middle School, and Hoquiam High School serving a population of over 1,100 students and staff.

The proximity of the PNWRE facility to schools raises serious concerns about potential dangers for attending children, both indoors and outdoors. The potential risks include, but are not limited to:

Air Pollution:

- *Particulate matter (PM): Emissions from the facility, particularly PM2.5, can easily travel and penetrate deep into children's lungs, leading to respiratory problems like asthma, bronchitis, and reduced lung function. One in 11 Grays Harbor citizens suffer from asthman. Children are more susceptible to the harmful effects of PM due to their developing lungs and higher breathing rates.*
- *Volatile organic compounds (VOCs): VOCs released from the facility can irritate airways, contribute to ozone formation (another lung irritant), and potentially impact children's neurological development.*
- *Hazardous air pollutants (HAPs): Even though individual HAP emissions might be stated to be below major source thresholds, exposure to even small amounts of certain HAPs can increase children's risk of cancer, developmental problems, and other health issues.*

Noise Pollution:

- *Operation of the facility can generate constant noise pollution, including machinery noise, truck traffic, and emissions control equipment. This can disrupt sleep, learning, and concentration, negatively impacting children's academic performance and mental well-being.*

Fire Risk:

- *The possibility of fires involving large fuel storage piles presents a direct safety risk to students and staff at the schools. Additionally, smoke and harmful pollutants from a fire could significantly impact air quality in the surrounding area.*

Psychological Stress and Environmental Justice:

- *Knowing about the potential health risks from the facility can cause anxiety and stress among children and their families. This could impact their mental health and well-being, especially for vulnerable populations already facing environmental disadvantages.*

Indoor Concerns:

- *Airborne pollutants from the facility might infiltrate nearby buildings, including the schools, posing a risk to indoor air quality and impacting children's health even within classrooms.*

The potential health risks and environmental concerns associated with the PNWRE facility's proximity to schools are significant and warrant careful consideration. A thorough environmental impact assessment that specifically addresses the risks to children's health is crucial before making any decisions regarding the facility's location or operation.

In addition, the location of a large wood pellet manufacturing facility adjacent to the Grays Harbor National Wildlife Refuge would likely present a significant problem for the over 500,000 shorebirds that use the area as a stopover point during their twice a year migration. The potential risks include but are not limited to:

Air quality:
Increased air pollution from PM2.5, VOCs, and NOx can:

- *Directly impact the respiratory health of migrating birds, reducing their stamina and survival rates.*
- *Reduce visibility, making it harder for birds to navigate and find food.*
- *Contaminate food sources like insects and shellfish with fine particles, affecting the birds' nutritional intake.*

Water quality:
Potential spills or leachate from the facility could:

- *Contaminate the Grays Harbor Estuary and nearby wetlands, poisoning fish and invertebrates that serve as food for shorebirds.*
- *Increase turbidity, reducing the ability of birds to see prey in the water.*
- *Disrupt the delicate balance of the ecosystem, impacting food availability and habitat quality.*

Noise and light pollution:
Operation of the facility can generate noise and light at night, potentially:

- *Disrupt sleep patterns and migration behaviors of birds.*
- *Discourage birds from stopping at the refuge by creating an unsuitable environment.*

Clogging and smothering:

- *Large amounts of wood pellet manufacturing particulate matter (WPMPM) can physically clog and smother biofilm, reducing its availability to shorebirds. This is especially detrimental during low tide when food resources are limited.*

Alteration of biofilm composition:

- *WPMPM can alter the composition of the biofilm community, favoring bacterial groups that are less palatable or nutritious for shorebirds. This can lead to decreased food intake and even malnutrition.*

Chemical contamination:

- *Wood pellets may contain trace amounts of contaminants like pesticides or heavy metals. These can be absorbed by biofilm-forming bacteria and subsequently ingested by shorebirds, potentially leading to bioaccumulation and health problems.*

Reduced oxygen levels:

- *When WPMPM decomposes, it can consume oxygen in the water column. This can create areas of low oxygen which can stress or even kill biofilm organisms and fish, further reducing food availability for shorebirds.*

The potential for habitat destruction:

- *Even if the facility itself is not directly located within the refuge boundaries, construction and operation could impact nearby habitats used by shorebirds for feeding, resting, and nesting.*

Cumulative effects:

- *The combined impact of the facility with other existing or planned industrial activities in the area could further exacerbate the negative consequences for birds.*

The placement of a large wood pellet manufacturing facility adjacent to the Grays Harbor National Wildlife Refuge raises serious concerns about the health and well-being of the hundreds of thousands of shorebirds that depend on this critical stopover point. A thorough environmental impact assessment (EIS) that considers both air and water quality, noise, and light pollution, as well as potential habitat destruction and cumulative effects, is crucial before making any decisions regarding the facility's location.

It is essential to prioritize the protection of this important wildlife refuge and the migratory birds that rely on it. These combined factors could significantly decrease the number of shorebirds that successfully use the Grays Harbor National Wildlife Refuge as a stopover point. This could have cascading effects on the entire migratory flyway, impacting populations across continents.

The above concerns, in part, present our concerns about the location and operation of the proposed pellet plant. The potential health risks associated with a large wood pellet manufacturing facility in Hoquiam are serious and warrant careful consideration. A thorough environmental impact assessment, public input, and implementation of strict environmental regulations and controls are crucial to minimize the negative impacts on the health and well-being of Grays Harbor citizens. It's important to consider the combined effect of emissions from this facility with existing or planned industrial activities in the area. The cumulative impact could exacerbate negative consequences for air quality and public health. Robust monitoring and enforcement mechanisms are essential to ensure the facility complies with emission limits and operates in a way that minimizes environmental and health impacts.

We are also concerned about the placement and scarcity of monitoring systems and how they would capture emission from the proposed plant.

ORCAA Responses

ORCAA received an identical comment: Please refer to ORCAA's response to Comment #15: Arthur (RD) Grunbaum on behalf of Friends of Grays Harbor (FOGH) (emailed comment 1/12/2024).

Commenter #23: Diane L. Dick (emailed comment 1/16/24)

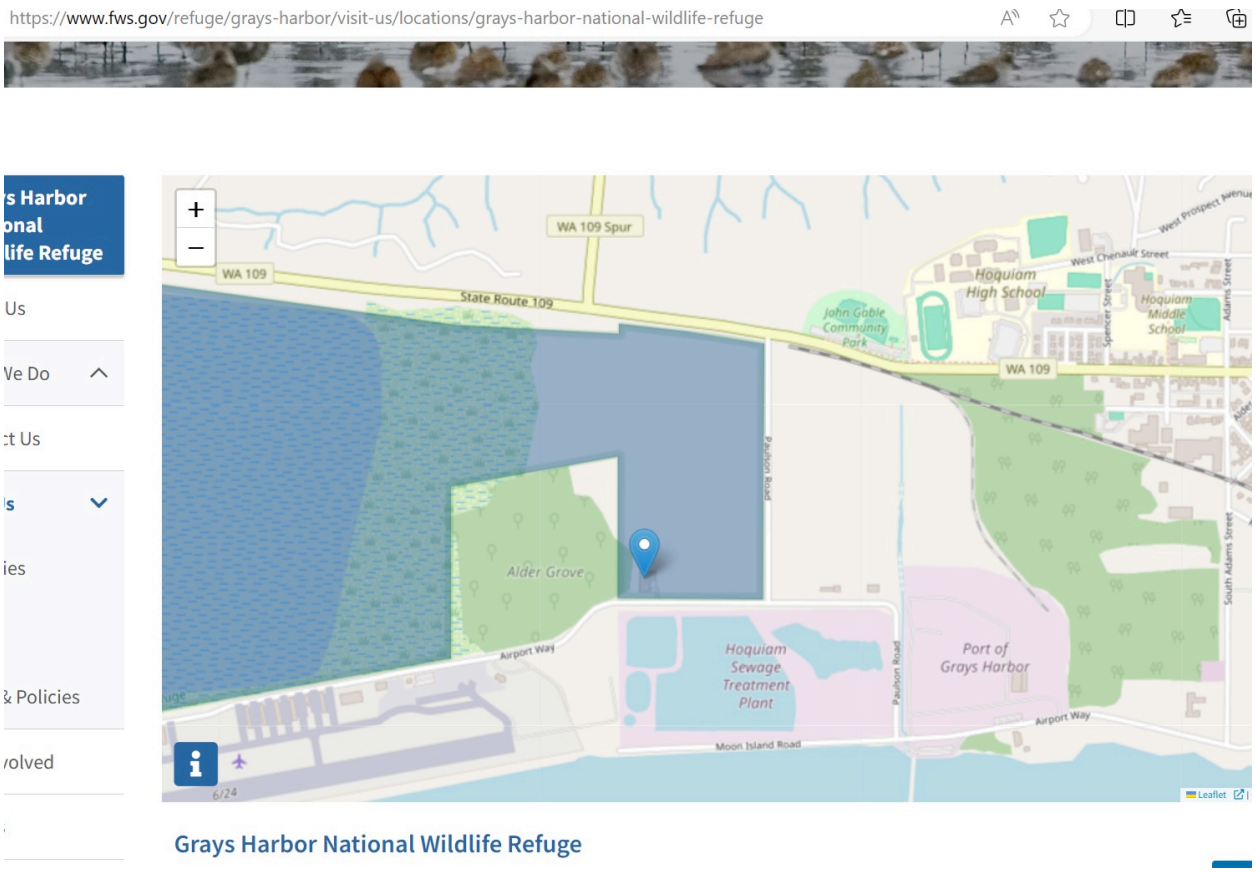
Pacific Northwest Renewable Energy (PNWRE) is proposing a new wood pellet manufacturing facility in Hoquiam to produce about a half million tons of wood pellets annually for export and will operate close to 24 hours a day, every day.

This project should never have received a determination of non-significance under Washington SEPA rules and reached this point of permitting without more thorough consideration.

The amount of wood fiber required for production, plus that used for hog fuel and allowance for drying, were it grown and harvested sustainably, would require at least 100,000 acres of standing forest every year. (Hybrid poplar produces about 5 bone dry tons of fiber per acre.) As short as a 3-year rotation would require more than 300,000 acres. This amount of acreage would require at least a quarter of all the land in Grays Harbor County to be developed into industrial timberland solely for feedstock for this one wood pellet plant.

The wood pellets are proposed for export, not for domestic energy. The amount of energy in a half million tons of wood pellets is roughly equal to the energy in 1.207 million barrels of oil. At a time when Washington State has policy to pursue alternative energy for domestic use and local industries, including development of biomass into sustainable aviation fuel (SAF), approving PNWRE's project runs counter to State environmental and WA Department of Commerce goals.

PNWRE will be operating multiple hammermills around the clock and acknowledges they produce close to 100dB of noise. This amount of noise pollution is unmitigable and unacceptable in the surrounding area. PNWRE would be adjacent to Grays Harbor National Wildlife Refuge, and less than a half mile away from Hoquiam High School. 100dB is about the same level of noise as a train horn, but the noise from PNWRE would be constant.



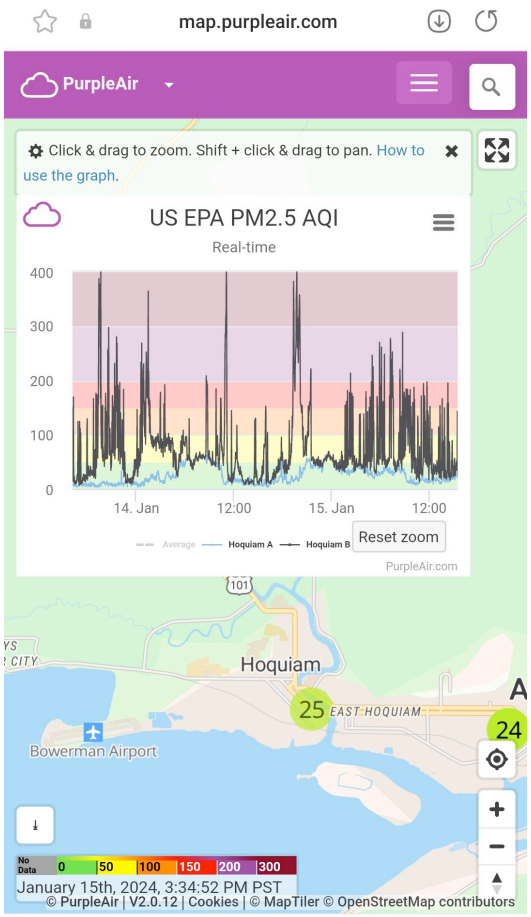
Also questionable is why development of the PNWRE site is not subject to Washington Shorelines Management Act considering it likely would operate within 200 feet of the high-water mark of Grays Harbor National Wildlife Refuge. And possibly be within the high-water mark in a couple decades. Burning wood pellets for energy is not a step toward combatting climate change. According to the Partnership for Policy Integrity power plants that burn biomass emit 150 percent more carbon dioxide than those burning coal. Add on GHG's from operating industrial timberlands, production of

pellets, and transport of feedstock and product. While some consider CO2 from biomass biogenic and thus carbon neutral, this cannot be the case unless there is a chain of accounting that every ton of carbon burned is also being actively pulled from the atmosphere in some manner. More forest would need to be grown than that just cut for wood fiber. One cannot promote growing more trees to combat global warming while at the same time cutting down more.

The PNWRE's impacts to air quality go beyond impacts from harvesting crucial forests, Earth's air cleansers. Producing wood pellets will add significant air pollution to the community surrounding the production facility.

Even without sufficient air quality monitors in Hoquiam for verification, "ambient air quality in Hoquiam and Aberdeen is assumed to be generally good." p 4 PNWRE Preliminary Determination to Approve *With prevailing westerlies and the only things to the west of the proposed project being the Grays Harbor National Wildlife Refuge and the Pacific Ocean, that assumption should be correct for the current vicinity of the project.*

However, the westerlies will be blowing PNWRE's air pollution to the east, to the population centers of Hoquiam and Aberdeen. The one regulatory monitor is in Aberdeen over a mile away and unlikely to directly pick up much of the wood pellet air pollution. There is a Purple Air particulate matter monitor closer, just off Route 101 near the Hoquiam Police Station. This monitor seems to register unhealthy levels of PM 2.5 regularly. See screenshot.



Major point source emissions in the area for 2021 (most current, updated Feb 2023) included COSMO Specialty Fibers- 2,829 tons total criteria air pollutants, also HAP major; Sierra Pacific Industries- 478 tons CAP; Paneltech- HAP major.
https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-emissions-inventory

PNWRE will be adding significantly more polluting emissions to the area air shed. This includes more than 640 tons of criteria air pollutants, which compared to other similar wood pellet operations is likely underestimated.

***Also of dubious credibility, the 1.32 tons of total HAP**. Drax has submitted to Southwest Clean Air Agency, SWCAA, an air permit application for a similar new wood pellet production plant in Longview. Their total emissions for HAP are 48.9 tons.*

SWCAA is not allowing abort process to bypass air pollution controls. ***Why is ORCAA allowing bypass of air pollution controls?***

Why is ORCAA not including estimations of fugitive sources of emissions?

Item 13. Requirements for Major Stationary Sources and Major Modifications to Major Stationary Sources
It is stated the proposed pellet manufacturing facility is not a "major stationary source" as defined in 40CFR 52.21 (b). ***This is not true per federal EPA regulations and guidance.***

52.21 Prevention of significant deterioration of air quality.
b) **Definitions.** *For the purposes of this section:*
(1)
(i) **Major stationary source** means:
(a) Any of the following stationary sources of air pollutants which emits, or has the potential to emit, 100tons per year or more of any regulated NSR pollutant: Fossil fuel-fired steam electric plants of more than250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants (with thermal dryers), primary copper smelters, municipal incinerators capable of charging more than 50 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants (which does not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140),fossil-fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants

Current federal EPA guidance can be found on their national website-
https://www.epa.gov/nsr/guidance-definition-fuel-conversion-plants
Guidance on the Definition of Fuel Conversion Plants
This document may be of assistance in applying the New Source Review (NSR) air permitting regulations including the Prevention of Significant Deterioration (PSD) requirements. This document is part of the NSR Policy and Guidance Database. Some documents in the database are a scanned or retyped version of a paper photocopy of the original. Although we have taken considerable effort to

quality assure the documents, some may contain typographical errors. Contact the office that issued the document if you need a copy of the original.

- *Guidance on the Definition of Fuel Conversion Plants (pdf) (57.5 KB)*

This document is part of the NSR Policy and Guidance Database.

"that generally occurs at other sources that EPA considers as "fuel conversion plants"(e.g., coal gasification, oil shale processing , conversion of municipal waste to fuel gas, processing of sawdust into pellets) under the PSD rules." This quote is extracted from the referenced guidance document.

PNWRE's proposed wood pellet facility clearly fits the definition of a fuel conversion plant by EPA, will emit more than 100 tons per year of regulated pollutants (and probably closer to over250 tons per year), and should be determined a major stationary source subject to prevention of significant deterioration permitting requirements.

Item 14. Title V Air Operating Permit (AOP) Implications
As the facility will be a major source of NOx and CO subject to Title V of the federal Clean Air Act, why is PNWRE being allowed a year to apply for the Title V Air Operating Permit (AOP)?
Please send this project application back to the drawing board for more thorough review and consideration under SEPA and SMA. Require permitting under regulation for Prevention of Significant Deterioration per 40 CFR 52.21. Require regulation under MACT, not BACT. Require completion of application for Title V Air Operating Permit before commencing operations.

Thank you for your work to ensure clean air and a healthy environment for all residents.

ORCAA Responses

The City of Hoquiam was Lead Agency for SEPA. Please refer to ORCAA's response to Comment #15: Arthur (RD) Grunbaum on behalf of Friends of Grays Harbor (FOGH) (emailed comment 1/12/2024).

For the portions of the comment raising concerns about the sources of wood feedstock, energy use, sustainability, climate change and climate goals, noise pollution: Please refer to ORCAA's responses to Items #6 and #8 in the Summary.

Regarding the Washington Shorelines Management Act: This is beyond ORCAA's authority and expertise. Please see ORCAA's response to item #7 in the Summary.

Regarding the siting of current air quality monitors: Please refer to ORCAA's response to Comment #3: Tammy Domike (verbal comment, 1/16/2024).

Regarding the concern of adding more air pollution to the air: Please refer to ORCAA's response to item #7 in the Summary.

Regarding the comment relating to total HAP emissions and the comparison to the Drax Longview plant: Please refer to ORCAA's response to item #2 in the Summary.

Regarding the question about why ORCAA is allowing limited bypass of air pollution controls: Please refer to the last paragraph of ORCAA's response to Comment #4: Savannah Rose (verbal comment, 1/16/2024).

ORCAA's response to the question: *Why is ORCAA not including estimations of fugitive sources of emissions?* PNWRE included and ORCAA reviewed fugitive sources of emissions within the scope of minor New Source Review (NSR)–please refer to Table 1 of ORCAA's Preliminary and Final Determination, where each emission source is classified as point, fugitive, or in some cases both.

Regarding the question about PSD applicability: Please refer to ORCAA's response to items #4 and #5 in the Summary.

ORCAA's response to the question: "*…why is PNWRE being allowed a year to apply for the Title V Air Operating Permit (AOP)?*" The requirement to submit an AOP application within 12 months of commencing operation is codified in WAC 173-401-500(3)(c): "*New or modified sources. New or modified chapter 401 sources which commence operation after EPA approval of the state operating program shall file a complete application to obtain the chapter 401 permit or permit revision within twelve months after commencing operation.*"

Regarding the request to require "MACT, not BACT": MACT does not apply to PNWRE, please refer to ORCAA's response to item #3 in the Summary.

Commenter #24: Katariina Tuovinen on behalf of the National Park Service (emailed comment 1/17/24)

The National Park Service (NPS) appreciates the opportunity to comment on the Olympic Region Clean Air Agency (ORCAA) preliminary determination on the Notice of Construction permit for the proposal by Pacific Northwest Renewables Energy (PNWRE) to construct the Port of Grays Harbor Wood Pellet Plant in Hoquiam, WA. The NPS recommends evaluating the addition of Selective Catalytic Reduction (SCR) to the drying line as part of the Best Available Control Technology (BACT) review for this permit. SCR could reduce nitrogen oxide (NOx) emissions from the proposed facility by 220 tons per year, protecting air quality in nearby national parks.

The NPS safeguards 428 special places for their unique natural and cultural resources and outstanding scenic beauty. Washington is home to 16 national park units and one affiliated area including Olympic National Park, about 50 km north of the proposed wood pellet manufacturing site, and Mount Rainier, about 150 km to the east of the proposed facility. Both national parks are federally designated Class I areas, receiving some of the highest levels of air quality protection under the law. These parks are known for protecting vast wilderness, rugged mountain scenery, high alpine lakes, and an impressive diversity of plants and animal life. In 2022, Olympic and Mount Rainier National Parks hosted more than 4 million park visitors to who spent an estimated $295 million in local Washington communities, supporting over 3,100 jobs and generating $400 million in economic output.

Total air pollutant emissions of particulate matter (10-micron diameter), NOx, and sulfur dioxide from the proposed wood pellet manufacturing facility are expected to be about 346 tons per year. Of these emissions, 249.7 tons per year would be NOx, known to contribute to harmful ozone formation, nitrogen deposition, and visibility impairment.

The NPS evaluation of the PNWRE application and ORCAA's preliminary determination finds that the proposed facility would be well-controlled for all pollutants except NOx. As mentioned above, the NPS recommends evaluating the addition of SCR to the drying line as part of the BACT review for this permit. SCR is a well-established and widely available control technology that may be applicable to, and economically feasible for, reducing NOx emissions from this facility. High-level analysis suggests that installation of SCR following the wet electrostatic precipitator could reduce NOx emissions by about 220 tons per year at a cost-effectiveness of less than $7,000/ton. See attachments 1 and 2 for technical review details.

The NPS appreciates the opportunity to comment on this preliminary permit determination and commends ORCAA for its commitment to clean air in Washington. Current nitrogen deposition levels at Olympic and Mount Rainier National Parks exceed good condition benchmarks for lichen, alpine ecosystems, and aquatic eutrophication. Limiting nearby NOx emissions will help to protect these sensitive park resources from additional damage.

ORCAA Responses

Attachment 1: NPS Technical Review, states that "As the process gases are heated from approximately 100°F exiting the WESP to the Regenerative Catalytic Oxidizer (RCO) operating temperature, it may be feasible to locate the SCR in a temperature zone that is desirable for SCR effectiveness." ORCAA would like to clarify to the commenter that the Regenerative Thermal Oxidizer (RTO) is downstream of the WESP; the RCO is not a part of the control device setup for the drying line. The RCO is further downstream in the process, controlling exhaust from the wet and dry hammer mills, pellet mills, and pellet coolers. NO_x emissions from the RCO exhaust are estimated to be 1.82 tons per year. The majority of NO_x emissions will originate from the drying line (furnace + dryer) and exhaust out the RTO.

As stated in the Preliminary Determination, the emission levels and control efficiencies proposed by PNWRE meet ORCAA's presumed BACT control levels (including NO_x control for the drying line). However, ORCAA asked PNWRE to provide additional analysis to evaluate the use of SCR as BACT.

PWNRE provided ORCAA additional information on April 9, 2024 demonstrating that the use of SCR on the drying line exhaust is not economically feasible. Commercially available SCR catalysts operate in the temperature range of 650°F - 750°F. As the temperature of the drying line exhaust stream is less 150°F, the airstream would need to be reheated to 650°F -750°F in order to use SCR. The costs associated with just the additional natural gas usage needed to reheat the air for SCR is about $3.9 million per year, or roughly $18,000/ton removed (assuming NO_x control efficiency of 95%). This cost does not include any of the capital investments or maintenance costs that could be estimated using the EPA's air pollution control cost estimation spreadsheet for selective catalytic reduction.

ORCAA concluded that SCR is not a cost-effective control method for controlling NO_x emissions for the drying line and therefore, does not constitute BACT. This is consistent with Ecology's Air Quality Program Guidance titled AQP-GUI-2022 BACT and tBACT (Attachment 2: Ecology Air Quality Program Guidance: AQP-GUI-2022 BACT and tBACT (rev. April 21, 2022)). ORCAA relied on Ecology's generic cost thresholds in Table 1 per "Option 3" as cost ranges incurred by other pellet mills using SCR are not available (ORCAA is not aware of any other pellet mill using SCR for NO_x control).

ORCAA maintains the use of low-NO_x burner control technology and an emission limit of 53 lbs/hr meets presumed BACT for this case.

Commenter #25: Mark Keely (emailed comment 1/17/24)

I oppose the proposed Pacific Northwest Renewable Energy (PNWRE) wood-pellet-for-export production project.

The hazardous air pollution (HAPs) and volatile organic compounds (VOCs) that PNWRE estimates to be emitted from the manufacturing of wood pellets are dangerous enough. But they are severely underestimating the actual air pollutants compared to wood pellet plants of the same size and scale. Smokestack tests in similar facilities in the U.S. find the actual emissions will be over 40 tons of total HAPs per year, including 20 tons of methanol.

Methanol? Methanol spills and releases present inhalation risks in enclosed areas, explosion and fire risks, and potential toxicity to plants and animals near the release. If 1 gallon of methanol is spilled in the water, it will deplete the oxygen out of 198,000 gallons of water killing salmon and other sea life. For goodness sake, the residents of Hoquiam and surrounding areas do not want or deserve this dangerous chemical that is impossible to see when on fire (attention firefighters!).

This entire application is smokescreen for greenwashing. This facility is wrong for Hoquiam, wrong for Washington, and I urge you to DENY the PNWRE air permit.

ORCAA Responses

Please refer to ORCAA's responses to items #2, #6, #7, and #8 in the Summary.

In addition, the risk of accidental spills and fire risks are beyond ORCAA's authority and expertise, and outside the scope of criteria ORCAA is held to for approving or denying a NOC application. Managing fire hazards are a matter for Hoquiam and/or L&I. Ecology is the governmental authority for managing hazardous waste streams and response to toxic spills.

Commenter #26: Sally Keely (emailed comment 1/17/24)

I strongly oppose the proposed Pacific Northwest Renewable Energy (PNWRE) wood-pellet-for-export production project.

The air permit application admits ***PNWRE's plant would be a major source of hazardous air pollutants (HAPs).*** *Yet their estimates are a severe underestimate. Smokestack tests in the southeast United States of plants similar to PNWRE's reveal PNWRE will likely emit* at least 40 tons of total HAPs per year*. DRAX recently applied for an air permit for a wood pellet plant in Longview WA–one that is comparable in scale, control technology, and feedstock to PNWRE. DRAX estimates its facility will emit* 49 tons of HAPs*.*

The product is for export. *The pellets PNWRE is to manufacture are not for Washington state energy use. PNWRE is exporting them to Asian markets. Yet Washington state would be liable/responsible for the emissions associated with logging to fulfill feedstock demands. This undermines Washington state goals for carbon sequestration in our forests. Our forests are our best natural climate defense. Washington state gets the brunt end of the stick with PNWRE raping our natural resources for less than zero benefit to state residents.*

Wood pellets are not green energy. *Sam Yassa, a respected senior scientist with Natural Resources Defense Council's Climate & Clean Energy Program reports[5], "wood emits more carbon dioxide than coal for every unit of electricity produced." The Partnership for Policy Integrity, a U.S.-based group that advocates for data-driven environmental policies, finds that power plants that burn biomass emit 150 percent more carbon dioxide[6] than those burning coal.*

We are in a climate emergency. *Human health and well-being is affected globally everyday. The PNWRE plant is going to make matters worse on multiple fronts. This proposal is wrong for Hoquiam, wrong for Washington, and I urge you to DENY the PNWRE air permit.*

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[5] Natural Resources Defense Council (2022). *No, Burning Wood Fuels Is Not Climate-Friendly*. https://www.nrdc.org/stories/no-burning-wood-fuels-not-climate-friendly

[6] Partnership for Policy Integrity (2011). *Carbon Emissions from Burning Biomass for Energy*.https://www.pfpi.net/wp-content/uploads/2011/04/PFPI-biomass-carbon-accounting-overview_April.pdf

ORCAA Responses
Please refer to ORCAA's responses to items #2, #6, #7, and #8 in the Summary.

Commenter #27: Peter Riggs on behalf of Pivot Point (emailed comment 1/18/24)

Thank you for the opportunity to comment on the Notice of Construction (23NOC1606) pertaining to the proposed wood pellet manufacturing plant in Hoquiam, Grays Harbor County. Pivot Point, a 501c3 organization registered in the State of Washington, has extensive experience with renewable energy finance, biomass energy, as well as advanced biofuels projects.

We appreciate ORCAA's serious effort to evaluate the air pollution implications of the pellet plant proposed by PNWRE. Because there is no precedent for an export-oriented wood pellet processing plant of this size anywhere in the Pacific Northwest, and because the pellet production process is multi-stage and involves the release of different pollutants at different stages, it is challenging to model those releases. However, we strongly disagree with ORCAA's statement that PNWRE's submissions are "appropriate for making regulatory determinations and estimating…air quality impacts."

The reference data provided by PNWRE does not comport with the reality of emission levels as already measured directly from similar-sized pellet facilities in the American South. Stack testing carried out by air agencies in Louisiana and Mississippi revealed much higher levels of Hazardous Air Pollutions (HAPs) than that modeled by PNWRE. Wood pellet plants in the South with half-million dry-ton/year (tpy) production capacity release approximately 40 tons of HAPs annually.

PNWRE is a relatively new corporation with no current facility 'footprint' in the state. At this time, a more established wood pellet manufacturer is also seeking an air discharge permit for a 400,000+ tpy facility in southwest Washington. This manufacturer, Drax, estimated that its facility, using comparable feedstocks and control technologies, would emit 49 tons of HAPs annually.

We also draw attention to one particular deficiency in PNWRE's listing of proposed control technologies. PNWRE failed to include controls for Volatile Organic Compounds in its four proposed hammermills. Comparison with currently operating mills suggests that uncontrolled wet hammermills at the PNWRE plant could emit up to 60 tons of VOCs and six tons of HAPs annually from this part of the production chain.

While noise pollution is not within ORCAA's specific remit, the impact of hammermills on the quality of life in Hoquiam should also be mentioned. Woody biomass delivered to the plant as slash or chips must be intensely pulverized to create the particle size needed for drying and processing. Drying creates emissions associated with the use of hog fuel, while processing through the use of hammermills creates a serious local noise hazard.

Hammermills routinely operate at 100db levels. PNWRE's proposal is for continuous operation of the plant. Hoquiam schools are less than one mile from the proposed facility, as is a major Pacific Flyway stopover area for migratory birds, the Grays Harbor National Wildlife Refuge.

Given the high likelihood that PNWRE's facility would meet the 'major source' threshold, ***Pivot Point asks ORCAA to require PNWRE to submit a case-by-case Maximum Achievable Control Technology analysis.*** *We also seek a 'do-over' with respect to the Ambient Impact Review, which is based on inaccurate and inappropriate HAP emission rates.*

We appreciate the opportunity to provide comments and look forward to continued engagement with ORCAA regarding this submission.

ORCAA Responses

Please refer to ORCAA's responses to items #1, #2, #3, #6, and #7 in the Summary.

Commenter #28: Sara Laumann on behalf of the National Parks Conservation Association, Earthjustice, and Olympic Park Advocates (emailed comment 1/18/24)

Due to the length of this comment, ORCAA is responding to the comment below and only including the title for each section. A copy of the comment is available to read on ORCAA's website.

ORCAA Responses

Comment I. A. The Proposed Pellet Mill Must be Classified as a Fuel Conversion Plant under the federal Clean Air Act Major Source Prevention of Significant Deterioration Permit Program

Please refer to ORCAA's response to Item #4 in the Summary.

Comment I. B. VOC Emissions from the Five Wood Pellet Storage Silos are Not Included in the Permit Application

The Georgia Biomass wood pellet plant identified by the commenter stores uncooled pellets (as acknowledged in the Georgia document provided by the commenter (attachment O, Page 5)).

The five wood pellet storage silos at PWNRE will only be handling cooled pellets. After pellets leave the dryer, they will be cooled in the pellet coolers before being stored in the silos. PNWRE acknowledges that as pellets cool, VOCs are expected to be emitted and PNWRE proposes to exhaust emissions from the pellet coolers to an RCO to destroy VOC prior to exhausting to atmosphere. Emissions from pellet cooling are subject to the VOC limit on the RCO exhaust and are required to be tested per Condition #8 and Condition #12 in the Preliminary and Final Determination.

ORCAA estimated VOC emissions from the five wood pellet storage silos to reaffirm that emissions are negligible from the cooled pellets. VOC emissions from the storage silos are incorporated into Tables 2 and 3 of the Final Determination and a copy of ORCAA's emission calculations are available in the Final Determination appendices.

Comment I. C. Carbon Monoxide Emissions from the Five Wood Pellet Storage Silos Are Not Included in the Permit Application

PNWRE is not proposing to construct and operate long term pellet bulk storage as indicated by the comment and supplied references. ORCAA agrees long term bulk storage of pellets may result in appreciable fugitive emissions over long periods of time as the bulk pellets off-gas. However, PNWRE only proposes to use its storage silos for short-term storage as material is loaded to be shipped offsite; the facility is not designed to store pellets or material in a stagnant state for long periods of time. Additionally, the wood pellet storage silos are "downstream" of the pellet coolers and will be equipped with aeration fans and venting to maintain low pellet temperatures.

ORCAA estimated CO emissions from the five wood pellet storage silos to reaffirm that emissions are negligible from the cooled pellets. CO emissions from the storage silos are incorporated in Tables 2 and 3 of the Final Determination and a copy of ORCAA's emission calculations are available in the Final Determination appendices.

Comment I. D.: The Permit Application Fails to Include Emissions from and Propose Controls for the VOC and HAP Emissions from the Hammermills

Please refer to ORCAA's response to item #1 in the Summary.

Comment I. E. The Permit Application Includes Woefully Inaccurate Emission Estimates for Hazardous Air Pollutants, Which Must be Revised and a Case-by-Case MACT Analysis Conducted

Please refer to ORCAA's response to items #2 and #3 in the Summary.

Regarding the EPA referenced enforcement memo: AP-42 emission factors are acceptable for purposes of estimating PTE in NOC applications and use of them are evaluated on a case-by-case basis. The EPA referenced enforcement memo does not preclude SLTs from allowing applicants to use AP-42 factors for estimating PTE for minor NSR. As the permitting authority for minor NSR, ORCAA reviews the use of all emission factors used by an applicant to determine if they are used appropriately. In the case of PNWRE, ORCAA Staff determined AP-42 factors used in PNWRE's application is appropriate, provided the recommended conditions of approval are met. ORCAA's recommended conditions of approval require source testing to establish site-specific emission factors once the facility is built to demonstrate compliance with the short-term emission limits.

Comment I. F. The Calculations for NOx Emissions must be Corrected.

The comment implies that NO_x emissions estimates only consider the drying emissions, and excludes the NO_x emissions from combustion–this is an inaccurate statement. The NO_x emission factor of 52 lbs/hour for the drying line is based on vendor-guaranteed emission specifications provided to PNWRE (and subsequently provided to ORCAA) and accounts for all processes and controls on the *furnace and dryer* system (including combustion emissions), emissions control via the RTO, and assumes year-round continuous operation. The Conditions of Approval require both stack testing on the dryer system (RTO stack) emissions to obtain site-specific NO_x emission factors and a continuous emission rate monitoring system (CERMS) to directly measure NO_x emissions in terms of lbs/hr.

PNWRE did quantify NO_x emissions from the pellet coolers, dry hammer mills, RCO combustion, and RTO combustion–these are included in the *plant wide* PTE (230 tons of NO_x per year).

Regarding NO_x emissions from all emergency engines and fire pumps: Please refer to ORCAA's response to item #9 in the Summary.

Regarding the portion of the comment dealing with NO_x emissions from marine vessels and "any other combustion sources not yet disclosed:" Marine vessels are not stationary sources of air pollution and therefore are not subject to minor NSR permitting in Washington state. Additionally, dockside emissions from vessels at berth would be considered part of Willis Enterprises' operations and included in Willis' facility-wide emissions because the "ship loadout area" is under ownership, and operated by, Willis Enterprises. In the event ORCAA discovers PNWRE did not disclose other combustion devices subject to NSR permitting, it would likely result in a Notice of Violation (NOV) and monetary penalties. ORCAA cannot condition or deny a NOC application on the possibility that there may be "other combustion sources not yet disclosed".

Comment II. A. The Permit Application Fails to Disclose and Use Accurate Methodology to Estimate NOx Emissions.

The vendor data and information provided in the NOC application was posted in Appendix D of the application on ORCAA's website for the Public Notice: https://www.orcaa.org/wp-content/uploads/23NOC1606-Appx_D_Vendor-Information-1.pdf

The proposed emergency generator is less than 500 horsepower; please see ORCAA's response to Item #9 in the Summary.

ORCAA reviewed the NO_x emission factor used from AP-42, Section 1.4, Table 1.4-1 (7/98) and determined it is appropriate for estimating NO_x emissions from combustion of natural gas in the RCO burner. The RCO is proposed to have a 5.8 MMBtu/hr burner, rendering the emission factors for boilers >100 MMBtu/hr inappropriate. The combustion characteristics in the RCO furnace are not similar to tangential-firing units. In order to verify emission rates, ORCAA included a requirement that the RCO be tested for NO_x, providing a source-specific emission factor for NO_x that encompasses combustion emissions from the RCO. The source-specific emission factor is required to be used to determine compliance with applicable NO_x emission rates and limits established in the approval order.

Please see ORCAA's response to Comment I. E. The Permit Application Includes Woefully Inaccurate Emission Estimates for Hazardous Air Pollutants, Which Must be Revised and a Case-by-Case MACT Analysis Conductedregarding the commenter's concern using AP-42 emission factors in the context of the EPA referenced enforcement memo.

Comment II. B. The Permit Application Does Not Appear to Include NOx Emissions for Several Sources.

The NO_x emissions from combustion of gas in the RTO furnace is accounted for within the 52 lbs/hr vendor guarantee for NO_x. The breakout tables for other combustion pollutants (SO_2 and N_2O) the commenter is referring to are not based on vendor guarantee and therefore were accounted for separately by the applicant. This information is provided in Appendix C of the application, Table C-8a, as footnotes and headers to the various emissions tables.

The emergency generator proposed by PNWRE is less than 500 horsepower; please see ORCAA's response to Item #9 in the Summary.

Comment II. C. The Permit Application Fails to Include Maritime Vessel Emissions from the Loadout Area, which is on Adjacent Property That Would Serve the Proposed Pellet Mill.

Please see ORCAA's response to Comment II. D. Permit Application Fails to Include Emissions from the Transport of Finished Product from the Five Wood Pellet Silos to the Ship Loadout Area.The "ship loadout area" is owned and operated by Willis Enterprises.

Comment II. D. Permit Application Fails to Include Emissions from the Transport of Finished Product from the Five Wood Pellet Silos to the Ship Loadout Area.

Willis Enterprises' Moon Island facility is a separate facility and not part of the proposed PNWRE source. If there are emissions increases specific to the Willis facility they will be reviewed under a separate permitting action by the owner/operator of that equipment–Willis Enterprises. Emissions increases associated with those units are outside the scope of this review.

Comment II. E. The Permit Application Fails to Include Any Emissions for Construction Activities.

Minor new source review is limited to reviewing stationary sources of air pollution; emissions from earth moving are outside the scope of a NOC. With that said, ORCAA Rules 8.3(c) and 8.3(d) requires

precautions to prevent air pollution from construction activity and does not apply specifically to stationary sources. PNWRE will be provided an ORCAA brochure that relates to good construction practices for purposes of limiting fallout.

Comment III. The Permit Application Fails to Address the Act's Regional Haz Four-Factor Analysis Requirements.

These requirements do not apply to PNWRE. The requirements apply to new major stationary sources or major modifications as defined in the Prevention of Significant Deterioration (PSD) program. PNWRE is not a major stationary source with respect to the PSD program (Please refer to ORCAA's response to item #5 in the Summary).

Comment IV. A. The Permit Applicant Must Look Beyond a Search of EPA's RACT/BACT/LAER Clearinghouse Database to Identify State-BACT Control Technologies.

ORCAA asked PNWRE to provide additional information regarding the NO_x and SO_2 BACT for the drying line. Please see ORCAA's response to Comment IV. B. The Proposed NOx Emission Limitations for the Dying Line Do Not Reflect State-BACT Requirements. and Comment IV. E. The Proposed SO_2 Requirements for the Drying Line Do Not Reflect State- BACT Requirements., where the commenter specifically presents questions regarding NO_x and SO_2 control technologies.

Comment IV. B. The Proposed NOx Emission Limitations for the Dying Line Do Not Reflect State-BACT Requirements.

The BACT limit for NO_x established in the recommended conditions of approval (53 lbs/hr) accounts for the use of low NO_x burners. ORCAA chose to clarify this specifically with the applicant to aid in responding to this comment, and the following excerpt was provided by PNWRE via an attachment (emailed to ORCAA Staff of March 4, 2024):
"PNWRE will install and operate low NOX burners on the furnace/rotary dryer. A low NOX burner is a demonstrated control technology in pellet manufacturing facilities and is technically feasible for NOx control. As such, the proposed burners will be classified as low NOx burners and will constitute BACT for the dryer's NOx emissions. A guarantee from the dryer vendor was used as the basis for the PNWRE application."

ORCAA amended Table 7 (BACT Summary) in the Final Determination for clarification.

Comment IV. C. It is Unclear Whether the Proposed PM Emission Limitations for Dry Hammer Mills and Pellet Line Meet the State-BACT Requirements.

As described in ORCAA's Preliminary Determination, a cyclo-filter is essentially a cyclone separator unit equipped with an integral fabric filter baghouse to remove particulate from the exhaust. The BACT emission limit was set based on the efficiency of the proposed cyclo-filters.

Comment IV. D. The Proposed Emission Limitations for the Emergency Generator and Fire Pump Engines Do Not Reflect State-BACT Requirements.

Please see ORCAA's response to Item #9 in the Summary.

Comment IV. E. The Proposed SO_2 Requirements for the Drying Line Do Not Reflect State- BACT Requirements.

ORCAA asked PNWRE to expand on what was provided in the original NOC application. PNWRE provided the following to ORCAA Staff via an emailed attachment on March 2, 2024:

> **SO2**
>
> SO2 emissions for wood combustion at the furnace have been included using emission factors from AP-42 Table 1.6-2 for Wood Residue Combustion. PNWRE is a low emitter of SO2 at 16 tons per year. The installation of an SO2 control system doesn't seem economically feasible for such a small quantity of SO2 reduction. SO2 Control technology is typical in coal and oil-fired generation plants where there is a high potential for SO2 emission.
>
> **BACT Analysis for SO2 Emissions**:
>
> 1. Scrubber
>
>   Sulfur Dioxide (SO2) is a harmful by-product of power generation such as coal and fossil-fuel burning. Exhaust from incinerators and fossil-fuel power plants are required to pass through an SO2 Scrubber before entering the atmosphere. SO2 Scrubbing, also known as Flue-Gas Desulfurization (FGD), can remove 90-99% of SO2.
>
> **Eliminate Technically Infeasible Options:**
>
> For impingement plate/tray tower and spray tower wet scrubber systems gaseous pollutant control, the gas temperature ranges between 40°F to 100°F. In general, the higher the gas temperature, the lower the absorption rate, and vice-versa. Higher temperatures can lead to loss of scrubbing liquid or solvent through evaporation (EPA, 1996; Avallone, 1996). The gas stream temperature post product will be 230°F which would make this system technically infeasible.
>
> **Ranking:**
>
> The following control technologies are available and feasible to control SO2 emissions:
>
> 1. Scrubber Systems
>   a. Impingement Plate/Tower
>   b. Spray Tower

Based on PNWRE's assessment, scrubber systems are technically infeasible for the furnace/dryer because the exhaust stream will be too hot (230ºF) for absorption rates to be effective.

ORCAA concurs with PNWRE's assessment that good combustion practices meet BACT.

Comment IV. F. State-BACT Determinations Must be Included for the Missing Emitting Units and Emission Sources.

All required state-BACT analyses have been addressed as part of this permitting action.

Comment IV. G. State-BACT Emission Limitations are Continuous Requirements and All Operating Scenarios Must Have State-BACT Determinations.

As required by WAC 173-400-081, ORCAA considered physical constraints on the ability of the source to comply with BACT limits during startup and shutdown. As the air pollution control system will be operational during shutdown of the furnace/dryer until once there is no combustion on the furnace grates and (for bypass of the dryer) no material remaining in the drum dryer, ORCAA determined that

the source could meet with all BACT emission limits during shutdown. During startup, the furnace/dryer is not capable of achieving continuous compliance with the BACT limit, therefore, ORCAA is required to include an appropriate alternative emission limitation in the approval order. The WAC defines an alternative emission limitation as "a numerical limit or a design characteristic of the emission unit and associated emission controls, work practices, or other operational standard, such as a control device operating range." ORCAA imposed limits on startup operations in Condition 9 of the Preliminary and Final Determination to ensure that startup emissions are minimized and operation of the air pollution control system is initiated as soon as possible.

ORCAA documented all relevant information from correspondence with the applicant in the Preliminary Determination, which was actively made available as part of the public notice materials, if such information was used to evaluate the minor NSR criteria of approval. Additional information and specific documents, such as specific email correspondences, that are not posted on ORCAA's website are always available upon request. As a government agency, any records or communications with ORCAA are subject to public disclosure under the Public Records Act (RCW 42.56) unless exempt under applicable law.

Planned shutdowns will only utilize the bypass stacks when there is no pollution being generated from the dryer/furnace. Please read Section 5.3 of ORCAA's Preliminary and Final Determination for more details on that clarification. As the air pollution control system will be operational during shutdown of the furnace/dryer until there is no combustion on the furnace grates and (for bypass of the dryer) no material remaining in the drum dryer, the source will be able to meet with all BACT emission limits during shutdown and an alternative emission limitation is not needed. ORCAA imposed shutdown conditions identical to PNWRE's description to ensure these emissions standards are met.
The modeling information was provided as part of the public comment materials in Appendix F, and the meteorology information in Appendix E. Section 5.2 of the Preliminary and Final Determination explains the startup process and emissions estimation methodology, and Table 4 provides the uncontrolled startup emissions rates.

Both Section 4.8.4 of the Preliminary and Final Determination and Condition 5 state that any emissions exhausting through the furnace or dryer bypass stacks (except as allowed under Conditions 9 and 10 for startup and shutdown) are presumed to be in violation of the pollutant mass rate limits established in the permit. PNWRE is not exempt or excused from meeting BACT limits during malfunctions or emergencies.

ORCAA documented all relevant information from correspondence with the applicant in the Preliminary Determination if such information was used to evaluate the minor New Source Review criteria of approval. Additional information and specific documents, such as specific email correspondences, that are not posted on ORCAA's website are always available upon request. As a government agency, any records or communications with ORCAA are subject to public disclosure under the Public Records Act (RCW 42.56) unless exempt under applicable law.

Comment V. The Proposed Conditions of Approval Authorize Bypass of the Air Pollution Controls, Unlawfully Excusing the Proposed Pellet Mill from Continuous Compliance with Case-by-Case Maximum Achievable Control Technology (MACT).

As documented in PNWRE's application and ORCAA's Preliminary and Final Determination, as proposed PNWRE will not be a major source of HAPs. Therefore, a case-by-case MACT determination is not required. Please refer to item #3 in the Summary.

Comment VI. The Permit Applicant Must Prepare and Submit a Permit Application to the Department of Ecology for PSD BACT for CO and CO2e Emissions.

PNWRE is not a major stationary source with respect to the PSD program (Please refer to ORCAA's response to item #5 in the Summary). Therefore, PNWRE does not need to submit an application to Ecology addressing PSD BACT for CO and CO_2e BACT.

Comment VII. A. The Permit Applicant Must Correct the Missing and Inaccurate Information and Rerun the AERMOD Model Using the Current Model Version.

ORCAA did not identify inaccurate and/or missing emission estimates that would require PNWRE to revise their ambient air modeling submittal. Please refer to ORCAA's response to item #1 in the Summary and ORCAA's response to Comment IV. G. State-BACT Emission Limitations are Continuous Requirements and All Operating Scenarios Must Have State-BACT Determinations. section Commenter #28: Sara Laumann on behalf of the National Parks Conservation Association, Earthjustice, and Olympic Park Advocates (emailed comment 1/18/24) .

Comment VII. B. Ambient Air Background Concentration Data Used Does Not Represent Current Conditions.

This comment is referring to requirements that are specific to the PSD program. PNWRE is not a major stationary source with respect to the PSD program (Please refer to ORCAA's response to item #5 in the Summary). The methodology used by PNWRE to characterize background ambient concentrations is appropriate for minor New Source Review. Background concentration information was *not* obtained from Idaho, but rather that the values are at, or closest to, the project location. The background data was obtained from NW-AIRQUEST (which is hosted on Idaho DEQ's website) and includes background concentrations of criteria air pollutants across Washington State, Idaho, and Oregon.

Comment VII. C. The Permit Application Fails to Include Modeling Runs for the Range of Operating Conditions.

The pertinent information the Agency used in evaluating the NSR criteria for approval were documented in ORCAA's Preliminary Determination, which was made available to the public as part of the actively advertised public notice documents. Additional supporting information and underlying documents, such as specific email correspondences, that are not actively posted on ORCAA's website are always available upon request. As a government agency, any records, or communications with ORCAA are subject to public disclosure under the Public Records Act (RCW 42.56) unless exempt under applicable law.

PNWRE documented that emissions rates from other operating scenarios ("cold" startup, planned shutdown, and idle mode) are lower than the emissions rates quantified from normal, steady state operations. Therefore, it was not necessary for PNWRE to model emissions for these alternative operating scenarios as the modeling results for normal, steady state operations address the worst-case emissions rates. ORCAA imposed conditions limiting shutdown and startup operations identical to PNWRE's description to ensure the units are operated as proposed.

Comment VIII. A. The Final Approval Order Must Contain When and How Often Stack Testing is Required.

Condition 12 of ORCAA's Preliminary and Final Determination requires testing of the RTO and RCO within 180 days of commencing operation and every 5 years thereafter. Testing is required to demonstrate

compliance with the emission limits established in the permit (including PM_{10}, VOCs, CO, NO_x, Hg and HCl). ORCAA believes this is sufficient as a baseline requirement to establish in an Approval Order. If ORCAA determines in the future that more frequent testing is needed to demonstrate compliance with emission standards, ORCAA has the authority to require that under ORCAA Rule 1.5(i).

ORCAA is also requiring a NO_x and CO continuous emissions rate monitoring system (CERMS) (Condition 11) and requires that the Relative Accuracy Test Audit (RATA) of the NO_x and CO CERMS be conducted concurrently.

ORCAA revised the source testing requirement to assure that the above requirements were clear and that performance testing for NO_x and CO using the reference test methods are conducted concurrently.

As documented in PNWRE's application and ORCAA's Preliminary Determination, the proposed PNWRE facility will not be a major source of HAPs. Therefore, a case-by-case MACT determination is not required. Please refer to item #3 in the Summary.

Comment VIII. B. The Approval Conditions Must Include Detailed Reporting Requirements.

It is unclear to ORCAA what "semi-annual reports" the commenter is referring to, as the recommended conditions of approval do not require a semi-annual report. However, PNWRE will be required to obtain an Air Operating Permit (AOP) which requires them to submit reports of any required monitoring at least once every six months (WAC 173-401-615(3)(a)). These semiannual reports are public records and will be made available to the public upon request.

The monitoring, recordkeeping, and reporting referred to by this comment, and supported by Attachment NN, is specific to permit conditions that are necessary to limit a source's potential to emit for purposes of shielding a source from the requirement to comply with major NSR permitting regulations. PNWRE did not request, and ORCAA did not impose, any limits to PNWRE's potential to emit. ORCAA included appropriate monitoring, recordkeeping, and reporting necessary to ensure the criteria for approval under minor NSR are met.

ORCAA is requiring that compliance with the NO_x emission limits need to be monitored *directly* using a continuous emission rate monitoring system (CERMS) (Condition 11). Compared to heat input, direct measurement via a CERMS is a much more accurate means to ensure compliance with NO_x emission limits.

Comment VIII. C. ORCAA Must Remove the Provisions that Provide for Director's Discretion.

The performance tests in the Recommended Conditions of Approval do not originate from federal regulations (e.g., NSPS, NESHAP, etc.), but were written for the purpose of obtaining source-specific emission factors to demonstrate compliance with the as-reviewed and BACT emission rates and/or limits established by ORCAA. As the local air permitting authority for minor NSR, ORCAA has the authority to require specific test methods (as well as approve alternative methods) for determining compliance with these local/state requirements (see ORCAA Rule 1.5(i)). Approval of alternative test methods is not subject to public notice.

Comment VIII. D. ORCAA Must Require Implementation of Source-Specific Fugitive Dust Requirements.

ORCAA has tailored the approval order conditions to require the "end goal"–no fallout–and prefer to leave the specificity of *how* to achieve no fallout outside of the approval order conditions to ensure quick and efficient measures are implemented if fallout is an issue. The dust prevention plan that is required as

part of the Operation and Maintenance Plan (O&M Plan) in Condition 13 is required to include vehicle speed limits, application of dust suppressants to haul roads, minimizing material drop heights, surveying the facility for fugitive dust; procedures for minimizing for fugitives during truck loading; and minimizing visible dust during feedstock and fuel dumps. ORCAA will review the O&M Plan and will use it to draft PNWRE's AOP including appropriate monitoring, recordkeeping, and reporting requirements for those elements addressed in the plan. The draft AOP will be available for public comment prior to issuance. The public can request a copy of the O&M Plan on file at ORCAA through our Public Records Request portal. Additionally, the public can make a complaint by calling, emailing, or using ORCAA's online complaint form on ORCAA's homepage; ORCAA inspection staff will respond as resources allow, and may issue enforcement actions if warranted. In addition to the requirements in the recommended Conditions of Approval, fallout and fugitive emissions requirements in state and local rules provide a means to enforce and require additional mitigation measures (ORCAA Rules 8.3(c) and 8.3(e); WAC 173-400-040(3) and (4)(a)).

Comment VIII. E. The Opacity Monitoring is Not Effective to Detect and Remedy Excess Emissions.

As the commenter noted, the Part 70 Operating Permit issued by Georgia under Title V of the Federal Clean Air Act, contains opacity monitoring provisions. PNWRE will be required to apply for an AOP and ORCAA will include similar monitoring in PNWRE's AOP. Below is a *representative example* of what ORCAA has included in other AOPs. PNWRE's AOP will include a similar requirement specific to their operations. The draft AOP will be available for public comment prior to issuance.

VIII. MONITORING TERMS AND CONDITIONS (M)

M1. Opacity Surveys. The Permittee must conduct visual opacity surveys of the Facility during daylight hours as follows:

- **a)** The surveys must consist of visual observation of all emission units to identify point and fugitive emissions exhibiting opacity greater than zero percent (0%).
- **b)** Opacity surveys must be conducted at least weekly.
- **c)** Surveys must be conducted from locations with a clear view of the target emission unit and where the sun is at the observer's back. Survey locations must be at least 15 feet but not more than 0.25 miles from the Facility.
- **d)** Observer certification for plume evaluation is not required to conduct the survey. However, it is necessary the observer is educated on the general procedures for determining the presence of visible emissions. As a minimum, the observer must be trained and knowledgeable regarding the effects on the visibility of emissions caused by background contrast, position of the sun and amount of ambient lighting, observer position relative to source and sun, and the presence of uncombined water.
- **e)** Each stack must be observed when the connected emissions unit is operating, and for a minimum of 15 continuous seconds during the survey.
- **f)** Any visible emissions observed from an emissions unit or area of the Facility other than uncombined water must be recorded as a positive reading.
- **g)** If it is not possible to conduct the survey due to inclement weather conditions, the Permittee must make three attempts during the day to conduct the survey. All attempts to conduct the survey must be recorded in accordance with Condition RK3.
- **h)** The observer must record the wind direction, sky condition, sun location with respect to the Facility and the survey location, and the time duration of the survey.

[Origin: N/A- Gap-Filling]
[Authority: WAC 173-401-615(1)(b)]

M2. Opacity Compliance Demonstration Required.

- **a)** When required by ORCAA, or when point or fugitive opacity is observed during surveys required under M1, other than visible emissions due to uncombined water, the Permittee must:
  - **i)** For emissions from stacks or points, complete Reference Method opacity readings for any emissions stack or point exhibiting opacity in accordance with condition M2b; or,
  - **ii)** For fugitive emissions, determine and document that reasonable and/or appropriate precautions are being taken to prevent the fugitive emissions. The determination must be completed within 24 hours of the opacity survey.

b) Opacity Reading Procedures. When required, pursuant to condition M2a, the Permittee must conduct opacity readings consistent with the applicable opacity reference test methods as follows:

- **i)** Certified opacity readings must be completed within 1 hour of the opacity survey that initially triggered the reference test method readings unless the subject emission unit is not operating, or lack of daylight or weather conditions prevent conducting the testing;
- **ii)** Certified opacity readings must be performed by persons with current EPA Method 9 certification in plume evaluation;
- **iii)** All certified opacity readings must be performed during periods when the subject emissions unit is operating;
- **iv)** If the subject emissions unit is down for maintenance or not operating, the Permittee must commence compliance verification within one hour after the unit comes back on line;
- **v)** If it is not possible to perform certified opacity readings due to inclement weather conditions or lack of daylight, the Permittee must document the conditions and must make repeated daily attempts to conduct the testing until it is accomplished;
- **vi)** Opacity must be computed from visual observations consistent with the Reference Test Methods of each applicable opacity limit;
- **vii)** For both reference test methods, the minimum duration for certified readings must not be less than 12 minutes;
- **viii)** However, if any individual reading made at 15-second intervals is higher than 20% opacity, certified readings must be conducted for a full 60 minutes or until readings indicate the general 20% opacity standard was exceeded;
- **ix)** For Ecology Method 9A, The opacity standard is exceeded if there are more than 12 individual readings, during any consecutive 60-minute period, for which an opacity greater than the standard is recorded; and,
- **x)** For EPA Method 9, the opacity standard is exceeded if the average of 24 consecutive observations recorded at 15-second intervals is greater than the standard.

[Origin: N/A]
[Authority: WAC 173-401-615(1)(b)]

Comment VIII. F. The Proposed Approval Conditions Are Utterly Devoid of a Mechanism to Monitor Facility-Wide Emissions and Compliance with PTE Limits.

Condition 8 in the Recommended Conditions of Approval titled "Monitoring Facility-Wide Emissions" addresses monitoring including frequency and emission calculation methodology (e.g., emission factor, production parameters, etc.) by pollutant and by emission unit.

Comment IX.–ORCAA Cannot Rely on the Project's Invalid Determination of Non-significance to Meet its SEPA obligations.

Note: As received, this comment has four subsections, A through D; ORCAA's response below is intended for all four of these sub-sections. Their titles are included below for reference.

Comment IX. A. Legal Requirements

Comment IX. B. The DNS Air Emissions Calculations Are Wrong.

Comment IX. C. The DNS Did Not Disclose and Consider All Climate Impacts from Greenhouse Gas Emissions.

Comment IX. D. ORCAA Must Deny the NOC Application and Undertake Its Own Full SEPA Review of the Project's Air Emissions.

Hoquiam was determined to be lead agency for this project under the rules for determining lead agency in Chapter 197-11 WAC. Per WAC 197-11-050, the lead agency shall be the *only* agency responsible for the threshold determination and preparation and content of environmental impact statements.

As Lead Agency, Hoquiam determined the proposal will not have a probable significant impact on the environment, and that an EIS per RCW 43.21C.031 is not required. It is ORCAA's understanding that there are no ongoing appeals related to this threshold determination, and therefore, the DNS issued by the Responsible Official is final and binding on all agencies (including ORCAA) per WAC 197-11-390.

Comments or questions relating to the Lead Agency's review should be directed to the Lead Agency–Hoquiam–as it is outside the scope of this comment period for ORCAA's Preliminary Determination.

Commenter #29: Donna Albert (emailed comment 1/18/24)

Please review how the HEAL Act applies to your permit review. Hoquiam and Grays Harbor are identified by Department of Health as having high health risks. Your permit review should consider the existing health burdens on this population.

From the World Resources Institute website, "Breathing dirty air affects more than just lungs and causes more than premature death. Air pollution affects almost every organ in the body. A ***recent study*** *by the Forum of International Respiratory Societies shows that air pollution contributes ot everything from diabetes and dementia to fertility problems and childhood leukemia."*

Any increase in air pollution is unacceptable for people who are already sick or lack social support. From that ***recent study*** *by the Forum of International Respiratory Societies, Air Pollution and Noncommunicable Diseases,* "Although air pollution affects people of all regions, ages and social groups… Persons are more vulnerable to air pollution if they have other illnesses or less social support. Harmful effects occur on a continuum of dosage and even at levels below air quality standards previously considered to be safe."* ***The safe pollution levels on your charts are not safe for people who are already sick or lack social support.***

I ask you to drive through the neighborhoods around the three schools that are about a mile or so from the proposed plant location. Many of these homes do not have filtered air ventilation. Residents will be exposed to outdoor pollution all day.

Children at the three nearby schools will be exposed to outdoor air pollution on the playground, on the ball fields and on the track, and even in the classrooms. These children are more susceptible to the health harms of air pollution than adults.

*Schraufnagel DE, Balmes JR, Cowl CT, De Matteis S, Jung SH, Mortimer K, Perez-Padilla R, Rice MB,Riojas-Rodriguez H, Sood A, Thurston GD, To T, Vanker A, Wuebbles DJ. Air Pollution and NoncommunicableDiseases: A Review by the Forum of International Respiratory Societies' Environmental Committee, Part 2: AirPollution and Organ Systems. Chest. 2019 Feb;155(2):417-426. doi: 10.1016/j.chest.2018.10.041. Epub 2018Nov 9. PMID: 30419237; PMCID: PMC6904854.

Grays Harbor National Wildlife Refuge

The internationally important Grays Harbor National Wildlife Refuge is located right next to the proposed pellet plant site. Air pollution from the pellet plant will fall into the water and on the mudflats where it will harm the birds and their food sources in the refuge. Any direct health harms birds experience from breathing new air pollution will be exacerbated by stress and the difficulty birds will have hearing each other and their prey, due to the noise from the nearby plant.

From the refuge website: "Grays Harbor National Wildlife Refuge…at Bowerman Basin ***occupies only two percent of the intertidal habitat but hosts up to 50% of the migrating shorebirds in spring."***

This wildlife refuge is one of only a handful of stops of its size and importance to migrating shorebirds on their long journeys up the west coast of the Americas. Finding rest and food during migration is essential to the survival of these birds. Any impact to the capacity of this refuge will result in loss of migratory birds. ***It is impossible to overstate how rare and irreplaceable this wildlife refuge is, and how important it is to the survival of migratory birds.***

From How Air Pollution Becomes Water Pollution, pugetsoundinstitute.org: "When thinking of air pollution, I used to think only of breathing toxic chemicals into our lungs, with uncertain health effects. That's bad enough, but ***air pollution*** *— which is everywhere — is also getting into our waterways and penetrating deep into our food webs…no body of water escapes toxic chemicals dropping out of the sky…(pollutants) can poison organisms and cause rapid and harmful changes in the environment. These changes may stress certain species, making them more vulnerable to decease…and may reduce their ability to respond and survive…Species' young, sick, older and rapidly growing members all tend to be more vulnerable to the effects of pollution. Importantly, the loss of any species can have significant impact on the ecosystem by disrupting the complex relationships among all members of the food chain…There may be a loss of biodiversity…"*

I understand this ORCAA permit considers pollution from the stacks if it is transported by air to human lungs and the lungs of wildlife, but the ORCAA permit does not consider pollution from the stacks if it falls on the mudflats or into the water, harming the living things that migratory birds eat. Please consider whether these arbitrary regulatory assignments to "air" or "water" pollution based on where the air pollution happens to fall are failing to capture all the real effects of the 40 plus tons of annual air pollution from the stacks.

All effects of air pollution that comes from the stacks should be considered in the air pollution permit, regardless of where they fall, and regardless of whether they will be monitored during operations in the NPDES.

Please incorporate comments made by FOGH.

Thank you.

ORCAA Responses

Please refer to ORCAA's responses to items #6, and #7 in the Summary. Please refer to ORCAA's response to Comment #15: Arthur (RD) Grunbaum on behalf of Friends of Grays Harbor (FOGH) (emailed comment 1/12/2024).

Commenter #30: Arthur (R.D.) Grunbaum on behalf of the Cascade Coalition (emailed comment 1/18/24)

The undersigned organizations and concerned Cascadians submit these comments strongly opposing the proposed Pacific Northwest Renewable Energy (PNWRE) wood pellet production and storage

project. This project will irrevocably harm our climate, communities, and forests. The Notice of Construction Application contains serious errors and omissions, and it does not use the best available science in assessing the air impacts of this project. We urge you to reject the application and undertake your own analysis of all air emissions caused by this project, in order to comply with the Clean Air Act and the Washington State Environmental Policy Act (SEPA).

We are particularly concerned about the unacceptable public health and safety harms that the PNWRE wood pellet project would pose to the port community of Hoquiam. PNWRE's application indicates many serious errors around hazardous air pollutants (HAPs) and volatile organic compounds (VOCs). The application vastly underestimates HAPs: PNWRE claims the facility will emit only 1.3 tons of HAPs per year, while stack tests and air permit applications of similar size and controls show it will emit at least 40 tons of HAPs. The pollutants, which include formaldehyde, acrolein, and methanol, are toxic or can cause cancer, even in small amounts. In particular, they cause health problems for children, the elderly, and people with asthma or COPD.

PNWRE's application also fails to include any controls for volatile organic compounds (VOCs) in its wet hammermills and employs an irrelevant air toxics Ambient Impact Review. Especially as the proposed facility is within a mile and a half of Emerson elementary school, Hoquiam middle school, and Hoquiam high school, this significant deficiency is reason enough to withdraw the application from notice and comment. PNWRE should be required to submit a case-by-case Maximum Achievable Control Technology analysis. For additional information on the facility's application deficiencies, please find attached a letter from Southern Environmental Law Center (SELC) Clean Air Act experts with significant knowledge of wood pellet permits.

Furthermore, wood pellet storage and handling operations at ports create substantial fire and explosion hazards. Wood pellet piles are prone to spontaneous combustion, and fine wood dust released during pellet production, transportation and handling can "pose catastrophic fire and explosion hazards." Repeated fires and explosions at wood pellet storage silos at ports across the Southeastern US have harmed residents with air pollution from fires that have burned for days, weeks, or months, and have injured or killed workers. As one of many examples, a fire at a wood pellet storage silo at Port Arthur, Texas burned for 102 days in 2017, sending smoke into the adjacent neighborhoods and causing the hospitalization of many residents.

Another issue of community concern is the amount of noise that PNWRE will create. According to its operational plan, the PNWRE facility will run virtually non-stop: 24 hours a day, 7 days a week, for 52 weeks. This would mean an increase in heavy truck traffic and hammermill pounding nearly every day. Never-ending noise from a pellet mill that operates nearly 24/7 is a health hazard. In communities with existing facilities in the Southeast, even neighborhoods that are several miles away from the plants can hear the steady pounding of heavy machinery stripping and grinding logs. We urge ORCAA to evaluate the potential noise impacts on local communities–including the schools–that would arise from hundreds of additional daily truck trips through small rural communities and the port area.

While expressing concern for the climate and the environment, PNWRE proposes to build an industrial-scale wood pellet production facility–an industry Washington has yet to experience–and ship the pellets overseas to be burned in converted coal-fired power plants. If built, this project will worsen the climate crisis and harm public health at every stage of the wood harvest, truck transport,

production, marine vessel transport, and combustion process. The project would increase logging rates in Washington's forests, both on the Olympic Peninsula and in the Willapa Hills, releasing their stored carbon at a time when we must increase forest protection and forest carbon storage. Significant greenhouse gas emissions and air pollution would be emitted at every step–from cutting forests, trucking cut trees long distances in hundreds of daily trips, chipping wood and producing pellets, shipping pellets overseas to countries in Asia and Europe that currently incentivize woody biomass energy, and burning those pellets in power plants. There is a scientific consensus in the U.S. and internationally that burning wood is not categorically "carbon neutral." As climate policies catch up with the science, many states and countries are revising their biomass energy policies to reduce or eliminate incentives for wood-burning. If, and when, subsidies disappear, the community will be left with a stranded asset.

Finally, ORCAA cannot rely on the invalid SEPA Determination of Non-Significance (DNS) to meet its own SEPA obligations. The PNWRE DNS review was limited to the immediate environmental impacts of constructing and operating the facility; it is deeply flawed in at least two major respects: (1) it contains serious errors even in its limited calculations with respect to air pollution emissions at the facility, including greenhouse gases, VOCs, and HAPs, and (2) it fails to conduct a lifecycle greenhouse gas analysis of the direct and indirect greenhouse gas impacts of producing, transporting, and burning the wood pellets. ORCAA must deny the NOC Application and conduct its own SEPA review that validly analyzes the significant air pollution caused by this project, including all VOCs, HAPs, and greenhouse gas lifecycle emissions.

Thank you for the opportunity to provide comments in opposition to the proposed project.

ORCAA Responses

Please refer to ORCAA's responses to items #1, #2, #3, #6, #7, and #8 in the Summary.

Please refer to ORCAA's response to Comment #11: Patrick Anderson - Southern Environmental Law Center (emailed comment 1/8/2024).

Regarding the concerns relating to fire and explosion hazards: please refer to ORCAA's response to Comment #15: Arthur (RD) Grunbaum on behalf of Friends of Grays Harbor (FOGH) (emailed comment 1/12/2024), Commenter #20: Pamela Ives (emailed comment 1/16/2024) and Commenter #25: Mark Keely (emailed comment 1/17/24)

Regarding the last paragraph concerning the SEPA review: Please refer to ORCAA's response to Commenter #28: Sara Laumann on behalf of the National Parks Conservation Association, Earthjustice, and Olympic Park Advocates (emailed comment 1/18/24) in the section Commenter #28: Sara Laumann on behalf of the National Parks Conservation Association, Earthjustice, and Olympic Park Advocates (emailed comment 1/18/24).

Commenter #31: David Worley (emailed comment 1/18/24)

It's been brought to my attention that ORCAA is considering the application for operations to begin of a "Renewable Energy" company to produce wood-chips in a plant in Hoqiuam, very close to wildlife sanctuaries, and public schools.

By their own admission, this plant is likely to emit as much if not more than 100 tons of pollutants into the air per year. This will directly expose the children, and the wildlife in Grays Harbor county to toxic chemicals, and presents a real long term safety risk that has not been properly explored.

In addition to that, the company that has applied for this opportunity, Pacific Northwest Renewable Energy, is not even located in the Pacific Northwest. The company was registered and opened in the State of Massachusetts. The CEO Mark Boivin of the company appears to reside at a $2 million dollar 4,000sq ft home in rural Ma. surrounded by a large property full of vibrant trees and a beautiful yard, based on the fact that this private residence is the registered Headquarters of Pacific Northwest Renewable Energy. 35-A Creamery Rd, Egremont, MA 01230 or 35A CREAMERY RD, GT BARRINGTON,MA, 01230 depending on which set of records you look up. But Here's the Zillow listing for the property. https://www.zillow.com/homedetails/35-A-Creamery-Rd-Egremont-MA-01230/2090811595_zpid/

Beyond the fact that the CEO lives a luxurious life across the country, there's the fact that this company is actually owned by a parent company, called Farnese Partners, registered and headquartered in the UK, owned by an Australian citizen named Philip Heason.

So my question to ORCAA, and the local government officials considering allowing this to happen is this: Why are you allowing a wealthy multi-national company with deceptive branding and naming to pollute our community while the citizens of another country profit off of the detriment caused to the local Grays Harbor ecosystem?

My question to the local Media, is why are you not reporting on this, and exposing the deceptive practices of multinational companies operating in our community to the wider public?

And to members of the public, my question is this: Do you want to allow a multinational company to pollute our community for a few people here to get new jobs, while the executives in Massachusetts and the UK reap $millions?

ORCAA Responses

Most of the concerns raised are outside the scope of criteria ORCAA is held to for approving or denying a Notice of Construction (NOC) application. Please refer to ORCAA's response to #7 in the Summary.

– END OF RESPONSES TO COMMENTS –

Attachments

Attachment 1: Ecology Letter dated February 21, 2024

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

February 21, 2024

Lauren Whybrew
Olympic Region Clean Air Agency
2940 Limited Lane NW
Olympia, WA 98502

Re: Fuel Conversion Plant

Dear Lauren Whybrew:

This is in response to the comment regarding the "fuel conversion plant" received during the public comment period of Pacific Northwest Renewable Energy's (PNWRE) new wood pellet manufacturing facility project at Hoquiam, Washington. Olympic Region Clean Air Agency (ORCAA) is seeking Ecology's opinion on whether the pellet manufacturing facility should be considered a "fuel conversion plant" for Prevention of Significant Deterioration (PSD) applicability purposes. Ecology implements SIP-approved PSD regulations through Chapter 173-400 WAC. Just like the federal PSD rule in 40 CFR 52.21, the Washington State PSD rule contains the listed source categories where the major source threshold is 100 tons per year (tpy). One of these listed source categories is "fuel conversion plant." If it is not one of the listed sources, the major source threshold is 250 tpy.

Background

PNWRE is proposing to use raw woody biomass as feedstock. Wet hammer mills would be used to reduce the size of the raw materials, before being transported to a 164.8 MMBtu/hr furnace to reduce the moisture from approximately 45 percent to 10 percent final moisture content. The facility also includes dry hammer mills to process the dried material to the desired size before pelleting. In the pellet mill, rollers would push the material through the holes of a die plate. Knives on the exterior of the die plate would cut the wood pellets from the plate once the pellets achieve the required length. Based on ORCAA's preliminary determination, the proposed facility has the potential to emit more than 100 tpy of NO_X, CO, and total PM, but less than 250 tpy.

Past EPA's Fuel Conversion Plant Guidance

"Fuel conversion plant" is included as one of the listed sources in the PSD rule without a definition of the term. Therefore, EPA has used discretion in several guidance in the

past to provide clarification on which types of facilities should be considered a "fuel conversion plant."

Originally, fuel conversion plants have been described as facilities where there is a change in state for a given fossil fuel. However, in the 1992 Cleveland Electric Memo, EPA expanded its interpretation to include biomass and anthropogenic (municipal waste-derived fuel and inorganic fuel). The memo also expanded to include a process/operation that changes the form of a fuel, in addition to changing the state. In the memo, EPA used pellet manufacturing as an example where the process changes the form of a fuel (process sawdust into a pellet).

EPA's thinking has evolved. In 2007, EPA Region 4 determined that two South Carolina facilities were not fuel conversion plants based on the fact that the conversion does not involve a fossil fuel.

Our view is to be considered a "fuel conversion plant," while this is not meant to be exhaustive, the process/operation should have the following key characteristics:

- the conversion is irreversibly from one fuel type to another
- change in the state of a fuel
- involve a fossil fuel

We believe our finding is consistent with EPA's 2007 opinion regarding the two South Carolina operations (Norbord South Carolina and University of South Carolina Columbia campus) and EPA's 2017 opinion regarding the Jordan Cove LNG facility in Oregon. These are EPA's more recent opinions regarding "fuel conversion plant." Based on our conversion with EPA Region 10, these still represent EPA's current position.

We hope this clarification is helpful. Please feel free to contact me at mengchiu.lim@ecy.wa.gov if you have any questions.

Sincerely,

MengChiu Lim
PSD Lead Engineer
Air Quality Program

Enclosures (2)

Enclosure 1: 2007 EPA Region IV Letter to South Carolina Dept. of Health and Environmental Services

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

June 4, 2007

Ms. E.A. Veronica Barringer
Bureau of Air Quality
South Carolina Department of Health
and Environmental Services
2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Barringer:

By letter dated June 14, 2005, the Region 4 office of the U.S. Environmental Protection Agency (EPA) sent an opinion to the South Carolina Department of Health and Environmental Control (SCDHEC) on whether operations at two South Carolina emissions sources should be considered "fuel conversion plants" for prevention of significant deterioration (PSD) applicability purposes. The operations in question were wood waste (biomass) gasification operations at the Norbord South Carolina, Inc. (Norbord) oriented strandboard manufacturing facility and at the University of South Carolina (USC) campus in Columbia. In our letter we expressed the opinion that both biomass gasification operations should be considered fuel conversion plants. We also stated that our opinion did not mean the entire Norbord and USC facilities should be considered fuel conversion plants. Rather, our opinion was that just the operations (and emissions units) associated directly with biomass gasification constitute a fuel conversion plant for these facilities.

After our opinion letter was submitted, Norbord provided additional information to SCDHEC and asked for further review. SCDHEC in turn requested reconsideration by EPA. Upon further review of the statutory and regulatory history of the PSD rules and of past EPA statements on the activities constituting a fuel conversion plant, we now are of the opinion that the biomass gasification operation at the Norbord facility should not be considered a fuel conversion plant for PSD applicability purposes. The rationale for our revised opinion is provided below.

As stated in our original opinion letter, we are responding to SCDHEC's request based on how we believe such a request would be resolved under the federal PSD rules in Title 40 Code of Federal Regulations and under EPA policies. Our response does not represent final agency action. Instead, this letter provides guidance for SCDHEC to consider in its role as the PSD reviewing authority.

Background

The PSD rules applicable to Norbord are South Carolina's rules in Regulation 61-62.5, Standard No. 7. SCDHEC's PSD rules, just like federal PSD rules in 40 CFR 52.21, contain a list of source categories for which the major source emissions threshold is 100 tons per year (tpy) of any individual regulated new source review (NSR) pollutant. One of these source categories is "fuel conversion plants." Sources not listed have a major source emissions threshold of 250 tpy.

Norbord operates three rotary gasifier/burner oxidizer systems at its oriented strandboard facility. Each system includes a rotary kiln gasifier generating a synthetic gas from gasification of wood waste. The synthetic gas is burned in a secondary combustion chamber producing hot exhaust gases used to produce steam and (in one system) hot oil for manufacturing process needs. A feature essential to the opinion expressed below is that the gasification process at Norbord does not involve fossil fuels. All of the material feeding the gasification process is a biomass, non-fossil material.

Review of History on the Fuel Conversion Plant Source Category

As part of our reconsideration, we have reviewed the history of the PSD program as related to the establishment of the list of specific source categories now embodied in the definition of "major source." A summary of our review is as follows, starting with a summary of the statutory and regulatory history.

- Congress established the basic framework for a national air quality control program in the Clean Air Act as amended in 1970. These amendments, however, did not contain any explicit requirements on preventing significant deterioration of air quality.

- Responding to a lawsuit, the U.S. District Court for the District of Columbia issued an opinion (*Sierra Club v. Ruckelshaus*) on May 30, 1972, directing EPA to establish rules for preventing significant deterioration of air quality. On November 1, 1972, the U.S. Court of Appeals for the District of Columbia affirmed the opinion of the District Court. The District Court opinion was then stayed by the U.S. Supreme Court until June 11, 1973, when the Supreme Court (in an equally divided opinion) affirmed the judgment of the Court of Appeals, thereby upholding the District Court opinion.

- EPA proposed PSD rules on July 16, 1973 (38 FR 18986) and listed 16 source categories covered by the rules. This list did not include fuel conversion plants. Also, as of that time EPA had not introduced the 100 tpy/250 tpy two-tier approach to defining major sources.

- On August 27, 1974 (39 FR 31000), EPA re-proposed the PSD rules and included this statement in the preamble: "The list of sources subject to review has been expanded to include three additional source types - fuel conversion plants (such as coal gasification and oil shale plants) ...." The re-proposed rule itself did not contain a definition of the

term fuel conversion plants. In addition, the two-tier approach was still not part of PSD regulations.

- On December 5, 1974 (39 FR 42510), EPA promulgated the first set of PSD rules. These rules contained "fuel conversion plants" as a listed source category but without a definition of the term. The two-tier approach was still absent.

- In August 1977, Congress adopted the Clean Air Act Amendments of 1977 with a statutory PSD section. The 1977 amendments included the PSD 100 tpy/250 tpy two-tier concept along with a list of the source categories having a 100-tpy PSD major source threshold. The listed categories included fuel conversion plants, but without any definition of the term.

- Pursuant to the Clean Air Act Amendments of 1977, EPA issued implementing PSD regulations in June 1978 and revised them in August 1980 in response to the holdings in *Alabama Power Company v. Costle*. The 1980 PSD rules contained the 100-tpy source category list with fuel conversion plants as one of the categories but again without definition. This list (still without definitions) remains in current federal PSD rules and in current SCDHEC PSD rules.

We next proceed to a summary of EPA statements on the meaning of the term fuel conversion as expressed in various documents.

- PSD source clarification memo; January 20, 1976 - This memo was from EPA headquarters in response to an EPA Region 4 request for clarification on sources subject to PSD review. The memo contains this statement: "Fuel conversion plants are defined for purposes of PSD as those plants which accomplish a change in state for a given fossil fuel. The large majority of these plants are likely to accomplish these changes through coal gasification, coal liquefaction, or oil shale processing."

- Cleveland Electric memo; May 26, 1992 - At the plant in question, Cleveland Electric proposed to produce fuel gas by means of gasifying municipal waste. EPA concluded that this process qualified as a fuel conversion plant and made the following statement: "Fuel conversion plants obviously include those plants which accomplish a change in state (e.g., solid to liquid to gas) for a fuel. This definition includes conversion of the following fuels: fossil (e.g., coal or oil shale); biomass (e.g., wood or peat); and anthropogenic (e.g., municipal waste derived fuel and inorganic fuel). The majority of such sources are likely to accomplish these changes through either gasification, liquefaction, or solidification. ... Generally, however, applicability for this source category is determined by whether a facility changes state (e.g., solid to gas) or form (e.g., process sawdust into a pellet) of a fuel."

- Pencor-Masada Oxynol order; May 2, 2001 - In this order (referred to as the Masada I order) issued by the EPA Administrator in response to a title V operating permit petition, the Administrator covered various topics related to a refuse recycling and ethanol production facility. One of these topics was whether a gasifier associated with refuse

processing was a fuel conversion process. EPA's conclusion reads in part as follows: "Based on our review, EPA policy has historically defined this category [fuel conversion plants] as 'plants which accomplish a change in state for a given fossil fuel. The large majority of these plants are likely to accomplish these changes through coal gasification, coal liquefaction or oil shale processing.' In this case, where fossil fuels are not involved and where the processing involves hydrolysis, a chemical process, it is EPA's judgment that the Masada facility is not a fuel conversion plant." [The embedded quote is from the January 20, 1976 memo listed above.]

The 1976 memo and the 2001 order support the idea that the term fuel conversion plants is limited to facilities engaged in the processing of fossil fuels, whereas the 1992 memo does not.

Revised Opinion

By this letter we now revise our opinion for the Norbord gasifier operation based on the likely meaning of the term fuel conversion projects at the time it was first introduced (as indicated by the preamble statement in the August 1974 re-proposal of PSD rules and in the January 1976 memo), recognizing that there have been no statutory or regulatory changes since that time necessitating a different view of the term. Our revised opinion is that the Norbord gasifier operation is not a fuel conversion plant because it does not involve a fossil fuel. This opinion is consistent with the Masada I order issued by the EPA Administrator in May 2001. Concurrence with this opinion has been obtained from EPA's Office of Air and Radiation (including the Office of Air Quality Planning and Standards) and Office of General Counsel.

If you have any questions concerning the opinion expressed in this letter, please call Jim Little at 404-562-9118.

Sincerely,

James W. Little, for

Gregg M. Worley
Chief
Air Permits Section

Enclosure 2: 2017 EPA Region X Letter to Oregon DEQ

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
AIR AND WASTE

SEP 26 2017

Ms. Claudia Davis
Western Region Air Quality Manager
Oregon Department of Environmental Quality
4026 Fairview Industrial Drive S.E.
Salem, Oregon 97302-1142

Dear Ms. Davis:

This letter is in response to the Oregon Department of Environmental Quality's (ODEQ) letter dated June 29, 2017, regarding whether the proposed Jordan Cove liquefied natural gas (LNG) facility is a "fuel conversion plant" and/or a "petroleum storage and transfer plant with a total capacity more than 300,000 barrels" as these terms are used in provisions in the Clean Air Act (CAA) and the Environmental Protection Agency regulations that establish and govern the prevention of significant deterioration (PSD) permitting program. As explained below and based on the information ODEQ provided the EPA Region 10 in the letter, which included the applicability request as well as an attachment containing the facility's reasoning for it not being a fuel conversion plant, in our view, the proposed project should not be considered a fuel conversion plant as that term is used in the PSD permitting program provisions in CAA and the EPA regulations. Additionally, in our view, the proposed project should not be considered a petroleum storage and transfer facility as that term is used in the PSD permitting program provisions.

In part, CAA § 169(1) defines "major emitting facility" as "any of the following stationary sources of air pollutants which emit, or have the potential to emit, one hundred tons per year or more of any air pollutant from the following types of stationary sources: … fuel conversion plants, … petroleum storage and transfer facilities with a capacity exceeding three hundred thousand barrels, …" There is no definition of the terms "fuel conversion plants" or "petroleum storage and transfer facilities" in the statute and the statute does not otherwise contain a description of such types of facilities or plants. When the EPA defined the term "major stationary source" in its PSD regulations, the EPA incorporated these source category terms from the statutory definition of "major emitting facility" without further defining them. Thus, in the absence of more specific direction in the CAA and the EPA regulations, the EPA (and air agencies with approved programs) have some discretion to determine what types of facilities should be included in the "fuel conversion plant" and "petroleum storage and transfer facility" source categories.

The EPA has exercised this discretion in several prior situations. With respect to "fuel conversion plants," the EPA's past guidance describes such facilities as those which accomplish a change in state of a fuel.[1] However, the examples of "fuel conversion plants" given in the guidance statements involve

[1] *See* Memorandum from Kent Berry, Director Policy Analysis Staff, U.S. EPA, to Asa B. Foster, Jr., Director, Air and Hazardous Materials Division, U.S. EPA Region IV, "Clarification of Sources Subject

more than a simple change in state of a given fuel. The Clarification Memo, the EPA's earliest guidance on defining the source category, offers coal gasification, coal liquefaction, and oil shale processing as examples, all of which irreversibly produce a new type of fuel as the end product. Clarification Memo at 1. Similarly, the fuel conversion process described in the Cleveland Electric Memo involved the "production of low heat value fuel gas" from municipal solid waste and the facility was said to meet the source category criteria by "producing a low heat value fuel gas." Cleveland Electric Memo at 2-3. Implicit in these examples are irreversible changes to an initial fuel and a distinct final product that has generally undergone both a change in state and other chemical or physical changes.

More recent the EPA guidance regarding fuel conversion plants has directly addressed LNG facilities. For example, in 2003, the EPA's Region 6 office concluded, in response to a request for assistance regarding two proposed off-shore gas delivery systems, that the process of vaporization of LNG to natural gas at the proposed facilities would not qualify the facilities as fuel conversion plants as that term is used in the PSD permitting program.[2] While these facilities were not deemed to be fuel conversion plants, Region 6 based the conclusion on the nature of the conversion from LNG to natural gas as its rationale, rather than the fact that the natural gas itself is not converted into another type of fuel and the change in state is a temporary change, solely conducted for transport purposes. In 2007, the EPA's Region 10 office provided the State of Alaska its view that the ConocoPhillips Kenai LNG Plant was a fuel conversion plant for purposes of the best available retrofit technology requirement of the CAA regional haze program.[3] Region 10 followed the approach in the 2003 determination and focused its analysis on the process by which natural gas becomes LNG and whether such a process was naturally occurring.

In similar fashion to the Kenai LNG Plant, the proposed Jordan Cove LNG project would receive natural gas by pipeline, purify the incoming gas, cool it to form LNG, and store and load the LNG into marine tankers for export. However, after further consideration of the EPA's guidance in a context other than the LNG facility and the legislative history described below, it is now our view that LNG plants at marine terminals that cool natural gas into LNG for the purpose of transporting natural gas should not be considered "fuel conversion plants" as that term is used in the statutory definition of "major emitting facility" and the definition of "major stationary source" in the EPA regulations. Both the 2003 Region 6 and 2007 Region 10 letters assumed that a simple change of state was sufficient and moved on to other factors without considering an implicit characteristic of the earlier the EPA guidance—whether the facility was irreversibly converting one fuel type to another.

After a closer examination of the EPA's historical approach, our view is that a change in state is a possible characteristic of a fuel conversion plant but not the sole characteristic – i.e., not everything that accomplishes a change in state is a fuel conversion plant. Where a change of state occurs only for

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to Prevention of Significant Deterioration (PSD) Review" (Jan 20, 1976) (hereinafter Clarification Memo), available at: https://www.epa.gov/sites/production/files/2015-07/documents/phosphat.pdf; *see also* Memorandum from Edward J. Lillis, Chief-Permits Program Branch, the U.S. EPA, to George T. Czerniak, Chief Air Enforcement Branch, U.S. EPA Region V, "Applicability of Prevention of Significant Deterioration (PSD) and New Source Performance Standards (NSPS) to the Cleveland Electric, Incorporated, Plant in Willoughby, Ohio" (May 26, 1992) (hereinafter Cleveland Electric Memo), available at: https://www.epa.gov/sites/production/files/2015-07/documents/clvlndel.pdf.

[2] Letter from C.J. Sheehan, Office of Regional Counsel, EPA Region 6 to M. Cathey, Managing Director, El Paso Energy Bridge Gulf of Mexico (October 28, 2003).

[3] Mahbubal Islam, Manager, State and Tribal Air Programs Unit, the U.S. EPA Region 10, to Tom Turner, Alaska Department of Environmental Conservation (Nov. 14, 2007).

transportation needs, the fuel remains natural gas throughout the process, and the process is necessarily reversible. Notably, in the case of an LNG export facility the change of state must be subsequently reversed at another facility before the natural gas is used as a fuel.

This view also appears to be consistent with the history and development of the source category. The term "fuel conversion plant" first appeared in EPA's re-proposed PSD rules on August 27, 1974. 39 FR 31000. The re-proposal included the following statement in the preamble: "[t]he list of sources subject to review has been expanded to include three additional source types - fuel conversion plants (such as coal gasification and oil shale plants) ...." Id. at 31003. The re-proposed rule itself did not contain a definition of the term "fuel conversion plants." Congress, when incorporating this term into the 1977 CAA Amendments, based on the July 29, 1976 debate of S. 3219, appears to have relied on the draft study developed by the Research Corp. of New England for EPA for the purpose of developing New Source Performance Standards. *See* Cong. Research Serv., A Leg. History of the Clean Air Act Amends. of 1977, Vol. 6 (Comm. Print 1980) at 5192. In this report, coal gasification again appears to be the predominant example referenced for the fuel conversion plants category. Id. at 5192-5199. There is no mention of LNG plants, let alone as fuel conversion plants, in the legislative history of the 1977 CAA Amendments.

Your letter also inquired as to whether the Jordan Cove LNG project should be included in the PSD source category "petroleum storage and transfer plant with a total capacity of more than 300,000 barrels." In one prior statement, the EPA has viewed this source category to be limited to those sources falling within SIC 5171 Petroleum Bulk Stations and Terminals, which includes "establishments primarily engaged in the wholesale distribution of crude petroleum and petroleum products, including liquefied petroleum gas, from bulk liquid storage facilities petroleum products."[4] Within the regional haze program, the EPA has also stated that this category includes the storage and transfer of gasoline and other petroleum-derived liquids.[5] Natural gas, by definition, is neither "a petroleum product" nor a "petroleum-derived liquid." Thus, in our view LNG storage tanks at LNG plants like the Jordan Cove LNG project, should not be considered part of the petroleum storage and transfer plant source category as that term is used in the PSD provisions described above.

Since the EPA Region 10 is not presently reviewing or taking action on a specific permit application for Jordan Cove facility or any other LNG facility, this letter does not have any legal force or effect or represent a final agency action with respect to any specific facility. Rather, this letter merely provides the EPA's view on one element of the PSD permitting requirements that ODEQ may consider as it evaluates which permitting requirements are applicable to the proposed Jordan Cove LNG project. We hope this letter is helpful. Please feel free to contact Dave Bray at (208) 553-4253 or me at (208) 553-1783 if you have any additional questions.

Sincerely,

Donald Dossett

Donald Dossett, P.E., Manager
Stationary Source Unit

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[4] Pamela Blakeley, Chief, Air Permits Section, U.S. EPA Region 5, to Don Smith, Minnesota Pollution Control Agency (Nov. 6, 2003).

[5] Proposed Guideline for Best Available Retrofit Technology Determinations Under the Regional Haze Regulations, 66 FR 38118 (July 20, 2001).

Attachment 2: Ecology Air Quality Program Guidance: *AQP-GUI-2022 BACT and tBACT* (rev. April 21, 2022

Air Quality Program Guidance

Guidance title: AQP-GUI-2022 BACT and tBACT

Date initially issued: February 17, 2021
Date last revised: April 21, 2022

Authority: WAC 173-400-030(13); WAC 173-400-111(8); WAC 173-400-113(2), WAC 173-460

Guidance on Addressing BACT Determinations:

Purpose:

This guidance describes Ecology's process to address best available control technology (BACT) determinations for minor new source review (NSR) through three options in order of preference:

> Option 1: Presumptive BACT, described below, is Ecology's preferred first option.
>
> Option 2: Top-down BACT, using cost thresholds based on cost ranges incurred by similar sources, is the preferred second option.
>
> Option 3: Top-down BACT, using previous Ecology cost thresholds (updated, as needed and as described below) is Ecology's least preferred option. This option should only be used when presumptive BACT is not known **and** when cost ranges incurred by similar sources for a control option are not available.

While the purpose of this document is to provide BACT guidance, the case-by-case definition of BACT explicitly allows engineering discretion to exercise professional judgment in considering the specific aspects of specific cases. The engineer will be responsible for articulating and justifying decisions that do not follow the approach described in this document.

Applicability:

This guidance applies to sources in Ecology's air quality jurisdiction for minor NSR in Washington State. BACT for toxics, or tBACT, follows the same approach as BACT except where noted in the section of this guidance titled: "Special Considerations for tBACT".

Option 1: Presumptive BACT

Presumptive BACT is the starting point for minor NSR BACT determinations. The term presumptive BACT is used in this document to convey situations where BACT is determined without explicitly going through (or repeating) the full top-down approach. It conveys the intent of implementing a review of what similar sources have achieved in practice.

Why is this a BACT option, and why is it listed as the first option?

Presumptive BACT is used successfully throughout Washington State (local jurisdictions and Ecology). It allows greater efficiency in processing applications, streamlines the time required for review, and minimizes cost to applicants with equivalent outcome to the more in-depth review. Due to their success with the presumptive BACT approach, many of the most experienced engineers in Washington never or rarely proceed to a top-down BACT analysis for minor NSR. Therefore, it is justified as both an option and as the first option.

How to evaluate presumptive BACT:

To determine if the presumptive BACT option is workable, the engineer proceeds with the following:

Sources and/or emission units are evaluated to determine if a specific limit or control technology is already readily known (or presumed) for a process based on previous BACT analyses for other projects. For sources where existing BACT determinations are known for that source, no further BACT analysis is performed. Ecology will propose this limit, and any associated controls, to the NSR applicant. Ecology will document how it came to this determination.

For sources and/or emission units where presumptive BACT is not initially known, the engineer will research that sector to determine presumptive BACT. Research may include contacting other Ecology engineers, or other local Washington air permit engineers. Research may involve other states, and even international sources of the same category, to determine presumptive BACT. For sources where existing BACT determinations are found for that source, Ecology may propose such limits, and any associated controls, to the NSR applicant. Ecology will document how it came to this determination.

While presumptive BACT is the preferred starting point for minor NSR BACT determinations, Ecology may perform or require a top-down analysis (using Option 2, below) at their discretion.

Options 2 & 3: Top-Down BACT

Ecology proposes two top-down BACT options when presumptive BACT is not available, or if further review is warranted. One approach is based on costs incurred by other similar sources in the same source category; and the other approach (as a last resort) is based on Ecology's generic historical cost thresholds, for situations when costs incurred are unavailable.

For applicants who propose BACT with a lower level of control than presumptive BACT, the applicant will need to perform a top-down BACT analysis, with vendor estimates, to calculate the cost per ton ($/ton) value. The top-down BACT process is described in the October 1990 EPA Draft New Source Review Workshop Manual[1] (or Puzzlebook). Based on their

[1] https://www.epa.gov/nsr/nsr-workshop-manual-draft-october-1990

demonstration, Ecology may then determine what BACT for the source on a case-by-case basis. This is consistent with the definition of BACT.

Option 2: Using Cost Thresholds based on Incurred Costs, as Described in EPA Guidance

Why is this a BACT option, and why is it listed as the second option?

Since presumptive BACT limits or controls are not known for all situations, the top-down approach may be more suitable in some circumstances. Performing a top-down BACT analysis also allows Ecology to review new advances in air pollution control, economic feasibility changes over time, and potential technology transfer applications. The top-down process also allows the applicant a legal route to compare proposed BACT to what Ecology believes is presumptive BACT.

Ecology is setting this option as a required step before allowing an applicant to use Option 3 because applicants quite often go straight to Option 3, and then try to show that their costs are above the "thresholds". However, there are no established "thresholds" for all sources.

As explained in Section IV.D.2.c. of the Puzzlebook titled: "Determining an Adverse Economic Impact," when determining what values are cost effective, the engineer should consider the

> *"cost previously borne by other sources of the same type."*

And

> *"the range normally incurred by other sources in that category."*

Therefore, the cost-effective decision is based on Ecology's experience with permitting and costs[1] incurred by other similar sources. The costs that one source category or industry has incurred (e.g. for selective catalytic reduction), may be different than the costs another source category or industry has incurred.

How to evaluate applicant BACT analysis costs under Option 2:

- The top-down analyses should follow the general approach described in the Puzzlebook which includes consideration of: "energy, environmental, and economic impacts in determining the maximum degree of reduction achievable for the proposed source or modification".

[1] Ecology focuses on the average cost effectiveness (total annualized cost per ton of pollutant removed) more than incremental costs between two control options, regardless of the economic condition of the applicant. From the puzzlebook: "In the economical impacts analysis, primary consideration should be given to quantifying the cost of control and not the economic situation of the individual source. Consequently, applicants generally should not propose elimination of control alternatives on the basis of economic parameters that provide an indication of the affordability of a control alternative relative to the source. BACT is required by law."

- The applicant should calculate a $/ton emissions value from current EPA cost spreadsheets[1] using vendor estimates to determine cost effectiveness or cost reasonableness of emission control equipment. Detailed vendor[2] costs should be provided.
- Obtaining cost thresholds: Lower costs thresholds and upper cost thresholds are developed by obtaining the most recent range of costs incurred by other sources in that category. The EPA spreadsheets link provides some costs borne by various sources. Applicants may also need to request this information from other sources or permitting agencies if not readily available.
- Comparing applicant costs with cost thresholds: If an applicant submits a robust cost analysis using EPA cost spreadsheets and detailed vendor costs, showing $/ton values higher than the upper range of costs incurred by similar sources, Ecology may consider those costs as unreasonable. However, Ecology should review the numbers closely for accuracy[3]. Calculated values found to be cost-effective or reasonable will result in Ecology requiring the facility to use the emission control equipment analyzed, even if these costs are outside the range of the costs in Option 3. In other words, costs incurred[4] by similar sources are the focus in Option 2, not the costs obtained with Option 3.

Option 3: Using Updated Historical Cost Threshold Estimates

Why is this a BACT option, and why is it listed as the third or last option?

This is a justified option for situations when both presumptive BACT is not available **and** when cost ranges incurred by similar sources for a control option are not available. For top-down analyses, using costs incurred by similar sources is the method put forth in the Puzzlebook . As noted above, Option 3 should be used as the last option. Ecology staff will determine when this option is justified.

How to evaluate applicant BACT analysis costs under Option 3:

- This top-down analyses should follow the general approach described in the Puzzlebook which includes consideration of: "energy, environmental, and economic impacts in determining the maximum degree of reduction achievable for the proposed source or

[1] This includes following procedures in the EPA cost website such as using current interest rates ("Cost Estimation: Concepts and Methodology" *November 2017;* pages 15-16) and the appropriate useful life of equipment. The cost incurred values in this document, are based on the August 2020 bank prime loan interest rate of 3.25%.

[2] Multiple vendor quotes would be preferred, but are not always obtainable.

[3] This guidance recommends that engineers review applicant's BACT analysis for accuracy in all cases, without being prescriptive about how it is performed. For example, applicant costs that may first appear to be 10x too high, might be due to a misplaced decimal, and might in fact be cost effective. Therefore, this guidance recommends not using a set cost multiple as a review criteria.

[4] For projects that use Option 2, the costs incurred found for those projects (updated to current costs using CEPCI) should be used to update the costs thresholds in Option 3, and take precedent over the CEPCI updating approach for historical costs described in Option 3.

modification." The applicant should calculate the $/ton value from current EPA cost spreadsheets[1] using robust vendor estimates to determine cost effectiveness or cost reasonableness of emission control equipment.

- If no recent $/ton values incurred by similar sources are found for a source category, Ecology may take the historical generic cost ranges[2] from Table 1 below (such as for NO_X, SO_2, CO, VOC, & PM) and extrapolate them to the current year based on the Chemical Engineering Plant Cost Index (CEPCI).
- CEPCI can be used by Ecology as a single default index for all types of sources. It is an average of four existing composite indices including equipment, construction labor, buildings, and engineering and supervision, as well as 11 sub-indices[3]. It has the benefit of being widely used[4] for updating the capital costs of process engineering projects. CEPCI includes both economic indicators, and current business indicators[5]. Other indices are available, but they may be more category-specific with less applicability across multiple industries[6].
- Under this option, Ecology can use the cost thresholds background (**see Table 1 below**) in establishing a cost threshold for a specific source category at a certain moment in time based on the annual average CEPCI value. The calculation for updating a threshold for a specific year starting in year 2021 and thereafter (using NO_X as an example) would be as follows:

Threshold = (2021 NO_X $/ton value[7]) x (CEPCI specific yr index) / (CEPCI 2021 value[8]*)*

- Obtaining the annual average CEPCI value and using in this equation is the responsibility of the engineer. Annual average values are released during the first half of the following year. Until the CECPI annual average values for the year 2020 and 2021 (or other future years of interest) are released, the thresholds in Table 1 should continue to be used under

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[1] This includes following procedures in the EPA cost website such as using current interest rates ("Cost Estimation: Concepts and Methodology" *November 2017;* pages 15-16) and appropriate useful life of equipment. The cost incurred values in this document, are based on the August 2020 bank prime loan interest rate of 3.25%.

[2] For projects that use Option 2, the costs incurred found for those projects should be used to update the costs thresholds in Option 3, and take precedent over the CEPCI updating approach described in Option 3.

[3] CEPCI "consists of a composite index and eleven sub–indexes — has received such wide acceptance that it has even been written into construction–contract, cost–escalation clauses." https://www.chemengonline.com/pci-home.

[4] Correlating the chemical engineering plant cost index with macro-economic indicators. Chemical Engineering Research and Design Volume 92, Issue 2, February 2014, Pages 285-294

[5] http://guides.library.cornell.edu/c.php?g=982492&p=7104512

[6] Other cost indices may suitable for specific industries only. The Nelson-Farrar index, for example, is suitable for petroleum and petro chemicals, but maybe less so for other industries.

[7] Base value for NO_X for the year 2020 obtained from Table 1 ($10,000 - $12,000 range based on engineering discretion considering BACT on a case-by-case basis)

[8] At the time of this document, the 2020 annual average CEPCI value is not available. The most recent CECPI values are as follows: 541.7 for 2016; 567.5 for 2017; 603.1 for 2018; and 607.5 for 2019. These are provided for information purposes only and are not meant to be used in the calculations of this guidance document.

Option 3. After that time, it is the engineer's responsibility to calculate and updated threshold value for the pollutant(s) of interest.

- Ecology will then compare the applicant-estimated $/ton values for a certain control to the Ecology-calculated cost thresholds. If an applicant submits a robust cost analysis using EPA cost spreadsheets and detailed vendor costs, showing $/ton values higher than the upper range for the cost thresholds calculated from cost indices, Ecology may consider those costs as unreasonable. However, Ecology should review the numbers closely for accuracy[1]. Applicant values found to be cost-effective or reasonable (compared to Ecology's updated $/ton threshold calculations) will result in Ecology requiring the facility to use the emission control equipment analyzed.

Ecology Cost Threshold Background

Table 1 illustrates how Ecology's generic BACT cost thresholds for criteria pollutants and VOC in Washington State have increased over time. Example for NO_X, SO_2, CO, VOC, & PM:

Table 1. Ecology Cost Threshold Background

Timeframe	Pollutant cost ranges	Comments
1980s	NO_X, SO_2, CO, VOC, & PM reasonable/unreasonable cost threshold at approximately $2,000 per ton	At this time, Ecology used this general threshold for multiple source categories
1990s-mid 2000s	NO_X, SO_2, CO, VOC, & PM reasonable/unreasonable cost threshold at approximately $4,000 - $7,000 per ton (some regions used a range of $5,000-$6,000)	At this time, Ecology identified a range of costs to cover a range of source categories based on Ecology's experience with permitting and costs incurred by other similar ranges of sources.
2017	• NO_X, SO_2, VOC, & PM reasonable cost threshold at or below $5,000 per ton • NO_X, SO_2, VOC, & PM indeterminate cost threshold between $5,000 and $10,000 per ton requiring secondary Ecology case-by-case determination for reasonableness. • NO_X, SO_2, VOC, & PM unreasonable cost threshold over $10,000 per ton • CO unreasonable cost threshold over $5,000 per ton.	These approximate cost ranges were based on Ecology's experience with permitting and costs incurred by other similar ranges of sources for a specific control technology (selective catalytic reduction or SCR) as applied to emergency backup generators and refinery coker heaters[2].

[1] This guidance recommends that engineers review applicant's BACT analysis for accuracy in all cases, without being prescriptive about how it is performed. For example, applicant costs that may first appear to be 10x too high, might be due to a misplaced decimal, and might in fact be cost effective. Therefore, this guidance recommends not using a set cost multiple as a review criteria.

[2] These cost ranges as applied to NO_X for coker heaters at refineries were defended before the Pollution Control Hearings Board in April, 2018.

Timeframe	Pollutant cost ranges	Comments
2021	• NO_X, SO_2, VOC & PM reasonable cost threshold at or below $6,250 per ton • NO_X, SO_2, VOC & PM indeterminate cost threshold between $6,250 and $12,000 per ton requiring secondary Ecology case-by-case determination for reasonableness. • NO_X, SO_2, VOC & PM unreasonable cost threshold over $12,000 per ton • CO unreasonable cost threshold over $5,400 per ton	At this time, Ecology identified a range of costs to cover a range of source categories based on Ecology's experience with permitting and costs incurred by other similar ranges of sources.

Special Considerations for tBACT

As stated previously in this guidance document, tBACT should follow the same approach as that outlined above for BACT. A major exception to this is that Ecology has not established historical cost thresholds for any of the toxics under WAC 173-460-150. Therefore, Option 3 described above is generally not an option for tBACT analyses.

The remaining options for tBACT are presumptive tBACT (Option 1) or a top-down analysis as described under Option 2. It can be especially challenging to perform a tBACT analysis should a permit engineer decide that Option 2 is the preferred method. Option 2 requires the comparison of costs incurred by installing pollution control equipment for the potential project to costs incurred by similar sources.

Establishing Cost Thresholds under Option 2

Following the steps above under Option 2 for the top-down analysis, the applicant should calculate a pollutant removal efficiency in terms of dollars per ton for each TAP to which mNSR is applicable. This will be compared to costs incurred by similar sources in terms of dollars per ton of TAP removed. Due to limited amount of data available for previous tBACT decisions, calculating a $/ton removal achieved by similar sources can be impracticable.

When such comparison is impracticable, the permit writer may instead require the applicant to identify if the TAPs are also PM or VOC. If the TAPs are also PM or VOC, the applicant may perform a top-down BACT analysis as described in Option 2 and calculate costs in terms of $/ton PM or $/ton VOC (including potential adjustments after taking into account other factors described below). The AQP maintains a spreadsheet[1] which identifies which TAPs are considered PM or VOCs which the permit writer or applicant may reference. The spreadsheet is

[1] http://teams/sites/AQ/CIW/historic/PhysicalPropertiesofTaps.xlsx

to be used as guidance, and the PM or VOC determination may be dependent upon process conditions (pressure, temperature) for the project being g evaluated.

The applicant or permit writer may also check if EPA has calculated costs incurred for the control of a specific TAP while performing rulemaking for the National Emission Standards for Hazardous Air Pollutants (NESHAP). If there is a NESHAP rule for a specific TAP or source category that applies to certain TAPs, EPA rulemaking information in associated dockets or the federal register may be useful for informing cost reasonableness thresholds. For example, the mercury air toxic standard developed for coal- and oil-fired electricity generating units established a MACT limit that would further reduce emissions of 3,854 lbs of mercury from existing sources beyond the MACT floor[1] at a projected cost of about $86.7 million. Although there were other supporting considerations (i.e., co-benefits), this was determined to be reasonable.

Selecting and Evaluating Control Technologies under Option 2

Due to the limited amount of data available regarding previous tBACT determinations, it may be difficult to select technologies to evaluate while performing a top-down analysis. EPA has a series of Air Pollution Control Technology Fact Sheets which may be useful for both selecting a pollution control technology to evaluate and also to establish removal efficiencies which could be used to create limits or calculate a $/ton removal value. Each Air Pollution Control Technology Fact Sheet has a description of the applicable pollutants. This may be as general as stating that the applicable pollutants are PM or VOCs, but sometimes also includes additional requirements, such as that the pollutant must be hydrophobic or hydrophilic. The AQP maintains a spreadsheet[2] with the physical properties of some of the TAPs, which may be useful in determining if one of the technologies in the Air Pollution Control Technology Fact Sheets might be suitable for the potential project you are evaluating.

Other Factors to Consider

WAC 173-400-030 states that BACT is performed "on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs". The permit writer may also

[1] Section 112(d) of the Clean Air Act instructs EPA to set emission standards for new sources based on the emissions control achieved in practice by the best controlled similar source and to set emission standards for existing sources based on an average emission limitation achieved by the best performing 12 percent of existing sources or best performing five sources in the source category or subcategory for categories with fewer than 30 sources. This is referred to as the MACT floor. There are no cost consideration when determining the MACT floor. EPA must also consider control options that are more stringent than the floor, commonly referred to as beyond-the-floor (BTF) options. EPA may establish standards more stringent than the floor based on considerations of the cost of achieving the emissions reductions, any non-air quality health and environmental impacts and energy requirements

[2] http://teams/sites/AQ/CIW/historic/PhysicalPropertiesofTaps.xlsx

consider energy and environmental factors in addition to cost when evaluating tBACT. Examples of additional items the permit writer may consider is available in the Puzzlebook.

Guidance Document History

Ecology has not had an official guidance document for BACT or tBACT, but has historically relied upon presumptive BACT and utilized the top down method, per the Puzzlebook. If any documents related to BACT or tBACT were disseminated either internally or externally, this guidance supersedes all previous versions so they are no longer in effect.

Approval Authority

Rob Dengel
Air Quality Program,
Deputy Program Manager

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