Hearing Officer's Report and Recommendations

Active Energy Renewable Power
Digital Public Hearing via Webex
June 22, 2020

Public Comment Period: February 14, 2020 through June 26, 2020

Pertaining to Permit Application No. 7800242.19A and
Draft Air Permit No. 10636R00 for:

Active Energy Renewable Power
1885 Alamac Road
Lumberton, Robeson County, NC
Facility ID No. 7800242
Fee Class: Small

Hearing Officer
Joe Foutz, Regional Compliance Supervisor, Mooresville Regional Office

Background

On November 4, 2019, the North Carolina Department of Environmental Quality (DEQ), Division of Air Quality (DAQ) received an air quality permit application (App. No. 7800242.19A) from Active Energy Renewable Power (AERP) to construct and operate a new wood pellet manufacturing facility at 1885 Alamac Road in Lumberton, North Carolina. The facility proposes to manufacture "black" wood pellets as a fuel source for power plants and industry, as a replacement for coal. The facility will receive dry wood chips as a raw material which will be pressured cooked using steam generated from a 20 mmBtu/hr natural gas-fired boiler. Wet cellulosic material from the pressure cooker will be sent to a screw press for additional de-watering prior to sending to a pellet press. Finished pellets will pass through a 4 mmBtu/hr natural gas-fired dryer to remove any residual surface moisture and then transported via conveyor to a pellet storage bin. The maximum process rate for the facility will be 39,420 oven dried tons (ODT) of wood per year.

The facility's potential emissions before controls do not exceed the Title V permitting thresholds of 100 tons/yr of criteria pollutants, 25 tons/yr combined hazardous air pollutants (HAPs), or 10 tons/yr of any single HAP. As a result, the facility is classified as small.

A public hearing was originally scheduled on March 16, 2020 for the issuance of this air quality permit. A public notice for the original public hearing date was published in the Robesonian on February 14, 2020 and on the DAQ's website. Due to health concerns and travel restrictions associated with COVID-19, that public hearing was cancelled. The public hearing was rescheduled to June 22, 2020 and the public hearing was conducted virtually over Webex to allow for public participation while protecting public health under current guidance to prevent the spread of COVID-19. The required 30-day public notice for this virtual public hearing was published in the May 23-24, 2020 edition of the Robesonian, and on the DAQ website. Copies of the air permit application, draft permit and permit review were also posted on the DAQ website for public review. Copies of the air quality permit application and related documents were available for public review in DAQ's Raleigh Central Office (RCO) and Fayetteville Regional Office (FRO) throughout the public comment period. The comment period for this permit opened on February 14, 2020 and closed on June 26, 2020 for a total of 133 days. The DAQ accepted comments via mail, electronic mail, and by telephone to a voicemail box in addition to the virtual public hearing.

Air Quality Permit Application and Review

DAQ's mission is to work with the state's citizens to protect and improve outdoor, or ambient, air quality in North Carolina for the health, benefit and economic well-being of all. To accomplish this mission, DAQ requires industrial facilities to apply for and receive air quality permits prior to construction and operation or modification of the air pollution sources to ensure compliance with all applicable federal and state regulations. AERP is required to apply for and receive an air quality permit prior to installing and operating a new wood pellet manufacturing facility at 1885 Alamac Road Lumberton, Robeson County. AERP is proposing to install the following equipment:

- 20 mmBtu/hr natural gas-fired boiler,
- pressure cooker process that is controlled by a water circulation condenser
- screw press
- pellet press and

- 4 mmBtu/hr natural gas fired dryer process.

AERP also provided verification by the Robeson County Zoning and Planning Department that the proposed operation is consistent with applicable zoning ordinances.

Gregory Reeves, permit engineer in the DAQ's FRO, reviewed the application submitted by AERP and determined that the proposed operations provided in the facility's application would comply with all applicable federal and state air quality regulations.

Unless the public comments received during the public comment period reveal that DAQ was in error or incomplete in its evaluation of the proposed wood pellet manufacturing facility from an air quality standpoint, and if the applicant has met all federal and state regulations for the protection of the environment, the division is obligated to issue an air permit to AERP. The following hearing officer's responses to written and oral public comments will address issues raised in light of these regulations.

Public Comments

125 people joined the virtual public hearing on June 22, 2020. DAQ requested those who wanted to provide oral comments at the public hearing to pre-register by 4:00 pm the day of the public hearing. Here is a breakdown of individuals who pre-registered to speak and how many provided comments.

- 62 pre-registered to speak
- 44 people spoke with 39 opposed and 5 in favor of DAQ issuing the air permit.
- 27 names were called during the public hearing; however, no response was heard from the individuals.
- 9 people provided comments at the public hearing who did not pre-register.

During the public hearing and after all pre-registered speakers had an opportunity to provide their comments, DAQ opened the telephone lines in order to provide individuals who did not pre-register an opportunity to provide comments. However, due to background noise additional speakers could not be heard. As a result, DAQ ended the oral comment period and informed the attendees of other ways to provide comments to DAQ on the draft air permit.

DAQ received over 1,250 emails during the comment period. Some of the emails had attachments that contained letters or literature referenced in their comments. In addition, 6 written comments were received.

10 oral comments were received on the DAQ's answering machine. 9 callers opposed DAQ issuing an air permit to AERP and 1 comment was in favor.

Of the written and oral comments received, more than 90% opposed DAQ granting the air permit. The comments have been separated into two sections. The first section addresses the comments submitted by the Environmental Integrity Project (EIP) and the Southern Environmental Law Center (SELC). The second section addresses comments received from individuals representing themselves or submitted on

behalf of an organization. Comments with similar concerns have been grouped together. A response to these concerns is included in each grouping.

SECTION 1 - Comments from the Environmental Integrity Project (EIP) and Southern Environmental Law Center (SELC)

Multiple comments were provided by EIP and SELC and submitted on behalf of numerous organizations. In general, the comments state that DAQ's evaluation of the air permit application does not accurately represent AERP's ultimate goal to substantially increase production in the near future. In addition, EIP and SELC state that AERP's process is a new technology and emissions data provided in the permit do not accurately reflect the emission rates. Because the technology AERP is using, emissions testing of criteria and hazardous air pollutants is needed to fully understand emissions from the proposed facility and to gain an understanding of the impact future expansion will have on air pollution and the community. The comments from EIP and SELC are summarized below.

Comment 1: (EIP/SELC Item I): Acrolein and Formaldehyde Emissions Exceed the Toxic Pollutant Permitting Emission Rates (TPERs) Requiring Air Dispersion Modeling.

AERP only quantifies acrolein emissions from the natural gas combustion and not from the pressure cooking and drying of the wood nor from the pellet manufacturing. Acrolein emissions are one of the most significant HAPs or toxic air pollutants (TAPs) emitted in wood pellet manufacturing. DAQ directed AERP to use emission factors from Enviva Sampson's stack test which did not include acrolein. However, Enviva Sampson has quantified acrolein emissions from both wood drying and pelletizing from other Enviva stack tests and shows acrolein emissions to be roughly 23 times higher than the TPER. While the process is different, it is an indication that acrolein emissions at AERP will likely exceed the TPER.

AERP uses Enviva Sampson's stack test for formaldehyde emission rates. The uncontrolled emission factor for the pressure cooker, pellet press, screw press, and dryer process is 0.369 lbs/ODT which equates to 1.52 lbs/hr of formaldehyde which is above the TPER of 0.16 lbs/hr. We are not sure how DAQ reached a controlled rate of 0.064 lbs/hr for formaldehyde.

Additionally, it is unlikely the condenser will reduce acrolein or formaldehyde emissions by 80%. The boiling point for both these toxics is well below the 210° F outlet temperature of the condenser authorized by the permit. We fail to see how any of these toxics will condense and be collected by the condenser. Even assuming an 80% control, acrolein will still be more than 10 times higher than the TPER.

Hearing Officer's Response to This Comment:
The AERP's manufacturing process is different from other wood pellet manufacturing facilities. Enviva Sampson is a wood pellet facility near the AERP's facility and some of the emission factors for AERP were based on Enviva's operations. However, a majority of the HAP and TAP emissions from the Enviva Sampson process are produced from the combustion of wood and the drying of wood prior to pellet production. AERP combusts natural gas in their process and does not utilize any wood combustion. In addition, AERP does not dry the wood prior to the steam cooker process. As a result, any HAP and TAP emissions are expected to be from the combustion of natural gas and are expected to be very low.

However, because AERP's process differs from the Enviva Sampson operation, it is recommended that AERP conduct stack testing to determine the HAP and TAP emissions from the pressure cooker operation and the screw press/pellet press/dryer process. The facility should use the appropriate stack test method to identify emissions of acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde and any other suspected HAP or TAP of concern from these processes. If the stack testing results indicate specific TAP emissions are greater than the TPER then AERP shall conduct modeling to ensure the respective AAL is not exceeded.

Recommendation:
It is recommended that AERP conduct stack testing to determine HAP and TAP emissions from the pressure cooker operation and the screw press/pellet press/dryer process. The facility should use the appropriate stack test method to identify emissions of acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde and any other suspected HAP or TAP of concern.

Comment 2: (EIP/SELC Item II) – AERP Omitted Significant Carbon Monoxide Emissions for its Pressure Cooking and Steam Explosion Processes.

AERP did not quantify any carbon monoxide emissions from the pressure cooking and steam explosion process other than emissions from the natural gas combustion boilers. Stack testing from a similar pellet mill process shows substantial CO emissions. The facility, Zilkha Biomass, conducted testing to show a CO emission factor of 1.21 lbs/ODT. These emissions cannot be all accounted for in the combustion process and indicate the CO emissions are separate from the facility's boilers CO emissions. Applying the Zilkha Biomass emission factor to AERP equates to 23.8 tpy of CO from the pressure cooking and steam explosion process and a facility-wide PTE of 32.45 tpy. DAQ should require at least initial stack testing for CO from the pressure cooker/steam explosion process. AERP intends to expand production to 400,000 tpy in the near term. Using the Zilkha emission factor would result in CO emissions of 338 tpy which exceeds Title V and PSD thresholds. Requiring testing now will help ensure that at least one source-specific emission test prior to an expansion.

Hearing Officer's Response to This Comment:
AERP and Zilkha Biomass are facilities that both make wood pellets. A review of the Zilkha Biomass process indicates that the facility uses a wood fired rotary dryer which is used to dry the wood prior to the pressure cooker steam explosion process. However, the AERP process does not utilize any drying system prior to the pressure cooker operation. It appears that the CO emissions at the Zilkha Biomass facility are from the drying system and the pressure cooker. The AERP process does not involve the combustion of wood. Therefore, the CO emissions at Zilkha Biomass facility do not appear to be representative of the CO emissions at the AERP facility.

Recommendation:
No changes to the draft permit are deemed necessary to address this comment.

Comment 3 (EIP/SELC Item III): The Condenser's 80% control Efficiency for VOCs and HAPs is Likely Overestimated.

AERP states most of the VOCs and HAPs will be emitted from the pressure-cooking process and will be controlled by a condenser achieving 80% control. AERP indicates the inlet water will be 68°F and the outlet temperature will be 210 °F. At these temperatures, the condenser is unlikely to achieve 80% control for many of the HAPs due to the boiling point for many of the HAPs and the VOC control rate is optimistic. EPA has noted that non-refrigerated condensers are frequently used prior to control devices. Non-refrigerated condensers are not widely used as standalone air pollution control devices. Testing should be required for the HAP emissions.

Hearing Officer's Response to This Comment:
The air permit application identifies the condenser will control approximately 80% of the VOC emissions from pressure cooking operation. The draft air permit requires AERP to conduct stack testing to determine the VOC emission rate after the condenser. The condenser may not provide any control for HAP or TAP emissions and the air permit review does not attribute any HAP or TAP control to the condenser. Although AERP references some of the emission factors from the Enviva Sampson wood pellet manufacturing facility, the AERP process is different including combustion fuel. AERP will not be combusting wood as a fuel. As a result, the TAP emissions are expected to be low and control of TAP emissions by the condenser is not required to maintain toxic emissions below TPER levels. However, as noted in other sections of this report, AERP's process is new with limited references for emissions data. Therefore, as noted in Response to Comment #1 above, it is recommended that AERP conduct stack testing to determine the HAP and TAP emissions from the pressure cooker operation and the screw press/pellet press/dryer process. The facility should use the appropriate stack test method to identify emissions of acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde and any other suspected HAP or TAP of concern from these processes. If the stack testing results indicate specific TAP emissions are greater than the TPER then AERP shall conduct modeling to ensure the respective AAL is not exceeded.

Recommendation:
As noted in the Recommendation to Comment #1, it is recommended that AERP conduct stack testing to determine the HAP and TAP emissions from the pressure cooker operation and the screw press/pellet press/dryer process. The facility should use the appropriate stack test method to identify emissions of acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde and any other suspected HAP or TAP of concern from these processes.

Comment 4 (EIP/SELC Item IV) – AERP has Likely Underestimated Particulate Matter Emissions.

According to the AERP application, the pressure cooker, dryer, screw press, and pellet press will not emit any particulate matter. The only source of PM emissions that AERP has listed is from the natural gas-fired boilers. AERP's PM estimates are in stark contrast to other pellet plants which universally include significant PM emissions for every step of the pellet manufacturing process as demonstrated by numerous stack tests. There are several key data points that indicate AERP's process likely emits significant amounts of PM including PM10 and PM2.5. Enviva Sampson controls its pelletizing lines with cyclones achieving 90% control. While Enviva operates pellet cooler and AERP will not, the Enviva emission

factor still shows how unlikely it is that AERP's pelletizing process emits no PM. While some of the units at AERP are "wet" processes and may have lower PM emissions, the pelletizing process occurs after the drying process meaning it is not a "wet" process. AP-42 also has emission factors for natural gas-fired wood dryers that are controlled by a multicyclone. AERP must provide justification and support for why it believes the main units, especially the dry units, will emit no PM. Without any data to support this assumption DAQ should require AERP to estimate its emission utilizing the most representative data available as it did for the facility's VOC emissions. Additionally, DAQ should require testing for PM, PM10 and PM2.5 to provide a full and accurate picture of the facility's emissions.

Hearing Officer's Response to This Comment:
The process at AERP is different from the Enviva Sampson process and the difference results in fewer particulate emissions. The AERP pressure cooker and pellet process utilize wet wood fiber and are not expected to have significant particulate emissions. The particulate matter emissions at Enviva Sampson are primarily from dry wood handling and from the drying and pelletizing of dried wood fiber. The air permit application submitted by AERP identifies wet cellulosic material from the pressure cooker will be sent to a screw press for additional de-watering then sent to the pellet press. Finished pellets will pass through a natural gas-fired dryer. Since pelletizing is done prior to drying then particulate matter emissions will be minimized. AERP does not employ any wood dryers prior to the pressure cooker process.

Recommendation:
No changes to the draft permit are deemed necessary to address this comment.

Comment 5 (EIP/SELC Item V) – DAQ Should Require More Comprehensive Stack Testing for This Novel Manufacturing Process.

DAQ is requiring VOC testing in order to understand and accurately access the VOC emissions from this novel and relatively untested manufacturing process. DAQ must go further and require more comprehensive stack testing on all criterial pollutants and HAPs that are emitted from traditional pellet mills.

Hearing Officer's Response to This Comment:
The draft air permit is requiring the facility to conduct stack testing for VOC emissions from the pressure cooker process and the screw press/pellet press/dryer process. As a result of the comments received and discussions with DAQ staff, it is recommended that AERP conduct stack testing to determine the HAP and TAP emissions from the pressure cooker operation and the screw press/pellet press/dryer process. The facility should use the appropriate stack test method to identify emissions of acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde and any other suspected HAP or TAP of concern from these processes. Other criteria pollutants are sufficiently low, and the facility's permitting classification is unlikely to change with additional information regarding emission factors.

DAQ's regulations require stack testing to be conducted within 180 days after start-up of equipment to verify emissions. However, AERP must be in compliance with all applicable emission standards upon start-up.

Recommendation:
As previously noted, AERP should conduct stack testing to determine the HAP and TAP emissions from the pressure cooker operation and the screw press/pellet press/dryer process. The facility should use the appropriate stack test method to identify emissions of acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde and any other suspected HAP or TAP of concern from these processes.

Comment 6 (EIP/SELC Item VI) – AERP May Not Take Advantage of the One-Time Doubling" Mechanism to Avoid Future Permitting Requirements.

True minor sources may become major sources without undergoing PSD review, so long as the emissions increase from the modification itself is less than the major source threshold (here, 250 tpy). Referred to as "one-time doubling" method. There are two instances, however, where one-time doubling is not authorized under the Clean Air Act, at least one of which applies to AERP. First, where a source has taken enforceable limits to avoid PSD. Second, where a source ultimately intends to become a major source but utilizes minor source permits to expedite construction or evade PSD. The latter situation is particularly relevant to AERP.

Although AERP is only seeking a construction permit for a small pellet mill (under 40,000 tpy), the company has made several public statements expressing its intent to expand production at the Lumberton facility tenfold within the first year of operation. EPA has identified such scenarios as potentially indicative of attempts to impermissibly skirt PSD requirements.

EPA has identified a non-exhaustive list of criteria to determine whether a facility is engaging in sham permitting, several of which demonstrate potential sham permitting on the part of AEPR. Specifically, if a source files more than one minor source permit application simultaneously or within a short period of each other. Although AERP has not yet filed multiple minor source permit applications, the company's stated intent to quickly move forward with expansion is cause for concern. This is problematic when calculating the facility's potential emissions at 400,000 tpy capacity. AERP could be a PSD major source for at least VOCs and CO.

Hearing Officer's Response to This Comment:
The Small permit classification for the AERP facility is the appropriate permitting procedure at this time based on the facility's potential to emit (PTE) for criteria pollutants. The expected PTE on a maximum design capacity basis is less than 100 tpy. The facility has only verbally indicated a desire to expand production if the technology works and product is sold. If the process does not work, the facility may never expand. However, in the event that future permit applications are received from this facility, the DAQ will evaluate each modification on a case-by-case basis, use the EPA guidelines for project aggregation, measure the time period separating physical or operational changes, and review the technical and/or economic relationship between the modifications. This evaluation will be used to determine if any subsequent modifications should be considered a part of the initial project and whether the total emissions from all modifications should be aggregated.

Recommendation:
No changes to the draft permit are deemed necessary to address this comment.

Comment 7 (EIP/SELC Item VII) – DAQ Should Include Enforceable Permit Conditions to Limit Emissions.

DAQ's draft permit review states the expected throughput at AERP's facility will be 36,000 tpy and all emission estimates and calculations are based off that assumption. Meanwhile, AERP's application lists the throughput of 39,420 ODT per year and operation 8,000 hrs per year. However, the draft permit does not contain any limit on the hours of operation. Also, the draft permit review states the facility will utilize 50% hardwood and 50% softwood for its feedstock. However, the application appears to assume 25% hardwood and 75% softwood instead. Without any enforceable permit conditions, to calculate AERP's potential to emit, it must be assumed the facility will operate 8760 per year at full design capacity, assuming 100% softwood feedstock. Although the draft permit purports to incorporate the application material as part of the permit, it is unclear whether such incorporation by reference creates legally binding and enforcement conditions. Relying on incorporation by reference creates obstacles for citizen oversight and enforcement because the operation parameters cannot be easily located.

Hearing Officer's Response to This Comment:
In order to properly identify the federal permit classification for this facility, the review of the air permit application evaluated the facility's criteria and hazardous air pollutants based on 8,760 hours per year and a maximum throughput of 39,420 ODT per year. The evaluation indicates the potential emissions do not exceed any major source thresholds. DAQ's process to review state air toxics is based on the facility's actual emissions. According to NCAC 02Q .0711, the facility will be required to submit an application to modify the air permit prior to exceeding any of the TPER limits identified in NCAC 02Q .0711. The draft air permit requires the facility to conduct stack testing of VOC emissions from the pressure cooker and the screw press/pellet press/dryer process. As noted in Response to Comment #1 above, it is recommended that AERP conduct stack testing to determine the HAP and TAP emissions from the pressure cooker operation and the screw press/pellet press/dryer process. If the stack testing results indicate specific TAP emissions are greater than the TPER then AERP shall conduct modeling to ensure the respective AAL is not exceeded.

The emission factors used in the air permit application and air permit review are based on Enviva Sampson's stack test data which was conducted when the facility was processing feedstock that contained approximately 50% softwood. It is recommended that the air permit for AERP contain language that limits the facility's feedstock to wood at no more than 50% softwood.

Recommendation:
It is recommended that the AERP air permit contain language that limits the facility's feedstock to wood at no more than 50% softwood.

Comment 8 (EIP/SELC Item VII) – DAQ Must Ensure AERP is Not a Modification of North Carolina Renewable Power (NCRP).

DAQ must ensure that AERP and the adjacent North Carolina Renewable Power (NCRP) biomass plant are not part of a single source for permitting purposes, or otherwise must permit the pellet plant as a modification of the biomass power plant. AEG (the parent company of AERP) has entered into a joint venture agreement with NCRP to supply steam and other services to the pellet plant and that AERP will

manufacture biomass fuel that could be burned at NCRP. Because NCRP is a major source under NSR, if AERP is viewed as a modification of NCRP then the relevant PSD major modification threshold are much lower than the 250 tpy PSD threshold applicable to a new greenfield pellet plant.

Hearing Officer's Response to This Comment:
While AERP manufactures a product that may be used at NCRP, the two companies are viewed as separate entities from an air permitting perspective. One entity is not directing or influencing the operations of the other entity. Each company has control over their own decisions that affect the applicability of, or compliance with, relevant air pollution regulatory requirements. In addition, the two facilities have separate major standard industrial classification codes; 4911 for NCRP and 3999 for AERP.

Recommendation:
No changes to the draft permit are deemed necessary to address this comment.

Comment 9 (EIP/SELC Item IX) – It Appears that AERP has Constructed its Pellet Plant Without Receiving the Required Air Permit.

Recent investor research provided on AEG's website indicates that the company has already commenced construction, and is in fact operating, pellet manufacturing equipment at the Lumberton site without a required air construction permit. Because AERP's proposed facility constitutes one manufacturing line, rather than several small manufacturing lines, we believe that if AERP is indeed manufacturing pellets, then the company has already constructed the wood pellet plant. Even if the company has constructed a smaller manufacturing line, it is likely the emissions exceed the threshold for requiring an air permit. Even if AERP's current construction is below the permitting thresholds, it is likely that whatever AERP has built is the first steps in building the proposed facility, meaning AERP has commenced or began construction of a facility requiring a permit without first obtaining that permit. DAQ should conduct an inspection of the site to determine whether AERP has commenced construction of a facility requiring a permit.

Hearing Officer's Response to This Comment:
A representative from DAQ conducted a field investigation of AERP on June 26, 2020. The DAQ representative observed the operations of the facility and noted the only operations currently being conducted at the facility are green wood operations which are exempted from permitting under 15A NCAC 02Q .0102.

Recommendation:
No changes to the draft permit are deemed necessary to address this comment.

Comment 10 (EIP/SELC Item X) – DAQ Must Include Emissions From AERP's Unpermitted Lumbermill in Facility-Wide Emissions Calculations.

AERP has commenced operations of a lumbermill, producing chips, railroad ties, and boards at the Lumberton facility. The facility does not hold an air permit for these operations. While the lumbermill and related operations may be subject to an exemption from permitting, the draft permit does not list any

of these activities in the table of Insignificant/Exempt activities. DAQ must require AERP to quantify emissions from the lumbermill and any other emission sources not listed in the permit application as part of quantifying facility-wide PTE and determining applicable requirements.

Hearing Officer's Response to This Comment:
The lumbermill processes green wood and is exempt from permitting per 15A NCAC 02Q .0102(g)(12) – Woodworking Operations Processing Only Green Wood. However, the lumbermill is controlled by AERP. As a result, the lumbermill should be included in the facility's air permit.

Recommendation:
The lumbermill should be included in the air permit review and AERP's air permit.

Comment 11 (EIP/SELC Item XI) – DAQ Failed to Consider the Environmental Justice Impacts of the Proposed Facility to Nearby Communities.

DAQ's actions are contrary to its commitment to environmental equity. DAQ issued the draft permit for the construction of the new AERP black pellet mill without an adequate understanding of the potential air emissions and public health impacts of the proposed facility. Despite the acknowledged uncertainty regarding the facility's emission profile, DAQ issued the draft permit without addressing the significant and disproportionate impact to people living in Lumberton and elsewhere in Robeson County which are among the most racially diverse areas in the state. Wood pellet production at AERP, both initially and future expansion, will result in harmful impacts to nearby communities. These impacts have significant negative impacts on the health and quality of life for people living nearby the facility, especially when the cumulative impact from other air pollution sources are considered.

Despite its commitment to addressing environmental justice in permitting decisions, DAQ has issued a draft permit for the construction of AERP without conducting a full environmental justice analysis and without addressing the disproportionate impact to low-income communities and communities of color. The Environmental Justice Snapshot acknowledges that the population living closet to the facility is racially diverse and high poverty rates and extremely poor health outcomes. At the same time, the Snapshot notes that the population is exposed to many sources of pollution or other environmental hazards. There are multiple sources of pollution within the 2-mile radius of the proposed AERP facility. Yet DAQ has not taken steps to address these disproportionate impacts, in violation of the commitment DEQ has set for itself in the Environmental Equity Initiative and its duties under Title VI.

Hearing Officer's Response to These Comments:
Although the highest impacts from this facility are predicted at the fence line, NCDEQ recognizes the importance of including an appropriate buffer in its evaluation of the surrounding community. A two-mile buffer was utilized to evaluate the surrounding community both to mirror the distance previously utilized in NCDEQ's evaluation of other wood pellet facilities in the state and because of the amount of public concern. Utilizing the two-mile buffer has allowed for enhanced public participation within the area. The socio-demographic information considered within the two-mile buffer included race and poverty (decennial census year), per capita income and ability to speak English (most current American Community Survey (ACS) census range), the current North Carolina Department of Commerce county tier, and the presence of native American territory. While NCDEQ is committed to environmental justice

and equity, there is no state statute or rule relative to air permitting that either requires or directs NCDEQ perform the cumulative impact analysis envisioned by the commenters.

Recommendation:
No changes to the draft permit are deemed necessary to address this comment.

Comment 12 (EIP/SELC Item XI.B) – DAQ's Two-Step Environmental Justice Review Process is Inadequate to Ensure Meaningful Participation.

It does not appear that DAQ has taken the next step of using the information contained in the Snapshot to "identify communities that may be disproportionately impacted" or determined where there is a need for greater outreach or special health risks based on the nature of the population. For public participation to be meaningful, potentially affected communities must be given the chance to participate in permitting decisions in a way that will contribute to and influence the decision-making process. DAQ must engage in heightened outreach prior to issuing the draft permit and prior to the close of the comment period. Accordingly, DAQ must conduct a full environmental justice review prior to issuing a modified draft permit for the proposed AERP facility.

Hearing Officer's Response to This Comment:
The DEQ utilized the results of the Environmental Justice Snapshot to provide for meaningful outreach, including:

- Preparing a full Environmental Justice report.
- Holding a public hearing.
- Extending the time for the public comment period and postponing the hearing date from March 16, 2020 to June 22, 2020.
- Calling and/or communicating virtually with community leaders and organizations.
- Creating a PowerPoint of important information regarding the proposed facility.
- Creating a frequently asked questions document about the proposed facility.

Recommendation:
No changes to the draft permit are deemed necessary to address this comment.

Comment 13 (EIP/SELC Item XII) - DAQ's Draft Permit is Inconsistent with Governor Cooper's Executive Order on Climate Change.

Contrary to Executive Order 80, the wood pellet industry results in a net increase in atmospheric CO2 emissions (especially over the relevant time frames needed to curb the worst impacts of climate change), destroys forest carbon stocks and thereby reduces the forests ability to absorb CO2, and decreases the resiliency of vulnerable communities when facing extreme weather events. DEQ must therefore re-examine its continuing support for the wood pellet industry and the expansion of the industry in North Carolina by permitting the construction of yet another wood pellet facility. Despite industry claims to the contrary, burning wood pellets for large-scale electricity production is not carbon neutral, but actually emits as much or more CO2 per megawatt hour as coal. Numerous investigations have uncovered the fact that several wood pellet manufacturing facilities use whole trees from clear-cut forests to supply its

wood pellet plants, including those in North Carolina. DAQ must reexamine the draft permit for consistency with Executive Order 80.

Hearing Officer's Response to This Comment:
Governor Cooper's Executive Order 80 (EO80) sets emission reduction goals for the state of North Carolina to strive to achieve. Those goals include a reduction in statewide greenhouse gas (GHG) emissions of 40% below 2005 levels, an increase in zero emission vehicles, and energy consumption reductions in state owned buildings of 40% from 2002-2003 levels. It also requires state agencies to develop plans for becoming more resilient to climate change impacts. The NC Climate Change Interagency Council is charged with developing holistic approaches and programs so that North Carolina can strive to accomplish all the goals in EO80 while ensuring that North Carolina's vibrant economy continues to expand. All of the work products specifically directed in EO80 have been published and are publicly available.

The North Carolina Clean Energy Plan (CEP) was published by DEQ in October of 2019. This plan includes 39 stakeholder-developed recommendations to expand the use of clean energy and energy efficiency in the electricity sector through policy, administrative, and voluntary actions. It also established a goal of reducing GHGs by 70% from 2005 levels by 2030 and a second goal of net zero GHG emissions by 2050. Since its publication, several public and private entities as well as DEQ have begun working on implementation of various recommendations, including the GHG goals.

The CEP stated that currently, the wood pellet industry does not contribute to NC's energy generation portfolio. The wood pellets harvested in the state do increase the state's carbon output during logging, processing and transportation and fuel combustion elsewhere, mostly Europe. It acknowledged that biomass combustion releases carbon into the atmosphere at a faster pace than if the forests were left intact to absorb and sequester carbon dioxide emitted from anthropogenic sources. The method for accounting this complex issue has been studied by EPA and other national experts, and the latest accepted methodology was employed in the development of the NC GHG Inventory. EPA's Science Advisory Board remains deadlocked after years of debate on the best way to advise regulators on how to account for emissions from burning biomass. Related to instate energy generation, there are currently no known plans for the industry to become a contributor to NC's energy portfolio in the coming years. Until such time when legislative or regulatory proposals are considered and acted upon related to this industry, projects such as this proposed permit must be evaluated based on the current state and federal regulations in place. DAQ will continue to develop an emissions inventory of key sources and monitor the effects of large projects on projected emissions levels.

The DEQ also published the North Carolina Climate Risk Assessment and Resilience Plan in June of 2020. This plan includes both a state-level climate science report as well as specific hazards and vulnerabilities to climate change identified by state agencies along with some sector specific resilience strategies. The plan also includes 25 recommendations to sequester carbon and build resilience using North Carolina's natural and working lands. The forestry recommendations were developed by 18 expert members representing 1) federal and state governmental units including the North Carolina Forest Service, 2) university experts, 3) forestry consultants, and 4) conservation organizations such as The Nature Conservancy and the Dogwood Alliance. There are seven recommendations pertaining to forestry and one of the plan's key findings is that sustainable management and financial support of the 14 million

acres of forest land owned by North Carolina's private forest landowners must be a cornerstone of any actions taken by the State. The plan specifically recommends 1) modernizing forest policy and tax incentives to reduce the threat of converting forests to other land uses by encouraging landowners to invest in management and restoration rather than harvesting prematurely or even selling the land for financial gain, and 2) creating economic incentives for the use of wood products that store the carbon for long periods of time (+20 years), which could result in creating less favorable economics for using the wood as fuel.

Recommendation:
No changes to the draft permit are deemed necessary to address this comment.

SECTION 2 – Comments Grouped by Similar Concerns

The following comments were provided by individuals representing themselves or an organization. Many of the comments expressed similar concerns. To address all issues and minimize redundancy, comments addressing similar issues have been grouped together.

1st Comment Grouping

- *People living near existing wood pellet plants complain of consistent issues with fugitive dust coating their property and vehicles on a daily basis.*

- *DAQ should take all necessary steps to ensure compliance with federal environmental requirements, including requiring AERP to undergo additional testing, provide air toxics modeling, and add enforceable production and operation restrictions of the Draft Permit. The current draft permit allows AERP to evade Clean Air Act and Title V permitting requirements.*

Hearing Officer Response to These Comments:
The AERP facility must comply with all applicable state and federal air quality regulations including 15A NCAC 02D .0540 – Control of Fugitive Dust emissions. 15A NCAC 2D .0540 states the facility shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. The facility shall submit a fugitive dust plan within 30 days of receiving written notification from the Director of two substantive complaints in a 12-month period or if DAQ observes excessive fugitive dust emissions from the facility beyond the property boundaries for six minutes in any 1 hours.

In order to ensure the facility is complying with all applicable air quality regulations as identified in the facility's air permit, DAQ staff will conduct unannounced full compliance evaluations which include review of equipment, operation of control devices, and review of records that must be maintained by the facility to demonstrate compliance with the air permit and air quality regulations.

Recommendation:
No changes to the draft permit are deemed necessary to address these comments.

2nd Comment Grouping:

- *Extend the comment period in response to the COVID 19 crisis until Governor Cooper lifts the COVID-19 Stay at Home Executive Order and reschedule the public meeting in Lumberton to ensure meaningful engagement of the community.*

- *Many people in Robeson County, particularly those located near the AERP facility, do not have access to the internet and, as a result, cannot fully participate in the public hearing.*

- *DAQ needs to conduct an in-person public hearing once the COVID-19 pandemic is over so the citizens of Robeson County can be informed about the emission and impacts from the AERP facility and the citizens can express their concerns to DAQ so the air permit application can be denied.*

Hearing Officers Response to These Comments:
The DAQ regulations do not require a hearing or comment period for the issuance of this permit. However, due to significant public interest, the Director of the DAQ decided to open a comment period and conduct a public hearing.

A public meeting was originally scheduled on March 16, 2020 for the issuance of this air quality permit. A public notice for the March 16, 2020 public meeting and public comment period was published in the Robesonian on February 14, 2020 and on the DAQ's website. Due to health concerns and travel restrictions associated with COVID-19, that public meeting was cancelled.

Subsequently, the DAQ conducted a virtual public hearing on June 22, 2020. The public hearing was held digitally to allow for public participation while protecting public health under current guidance to provide the spread of COVID-19. The public notice for the virtual public hearing was published in the May 23, 2020 edition of the Robesonian and on the DAQ website. As a result, the comment period for this permit extended from February 14, 2020 to June 26, 2020 for a total of 133 days. The required duration for a comment period is 30 days per 15A NCAC 2Q .0300. Comments to DAQ were accepted by mail, electronic mail and by telephone to a voice mailbox.

DAQ received more than 1,250 comments by email, 10 comments by telephone messages and 6 written comments. 125 people joined into the virtual public hearing and 44 people provided oral comments.

Recommendation: No changes to the public participation process are deemed necessary to address these comments.

3rd Comment Group

- *Clearing our forest without a plan will harm the long-term health of our forest and is unacceptable.*

- *Consider the impacts this facility will have on NC's forest and commitment to reduce carbon emissions and on the health and wellness of the community.*

- *NC exports more wood pellets than any state in the US, sacrificing our forest to be burned for energy in foreign countries. The demand for wood pellets is devastating forest ecosystems in the southern US. The wood pellet industry claims to replant but is actually replacing natural forest with monocrop pine plantations that do not have the same biodiversity and carbon storage or flood protection as natural forest. Our forests are not crops. We must invest in nature to protect us from the damage caused these storms.*
- *An industry operating at this scale could drive forest management rather than good forestry driving the utilization of products such as biofuels.*

- *The forest and communities of southeastern North Carolina have suffered enough due to the biomass industry. Allowing another mill to operate will be a terrible mistake. This industry is not a green, clean option for alternative energy industry. The forests are being destroyed and to say they are being replanted to replace them is extremely out of touch considering how quickly a forest can be felled versus the slow rate of new growth. Clear cutting forest removes vital protection from floods and hurricanes and this community is in a major flood plain.*

Hearing Officer's Response to These Comments:
The North Carolina Forest Service (NCFS) notes that properly managed forests provide many benefits to the environment. The NCFS's primary purpose is to ensure adequate and quality forest resources for the state to meet its present and future needs. They are mandated to protect, manage and develop forest resources for the state. An important indicator of a sustainable forest is a constant or increasing area of timberland. A representative from the NCFS evaluated the 75-mile supply area centered around Lumberton and indicated the timberland area is stable. The standing timber volume for all live trees is increasing for both pine and hardwood. The net annual removals are less than the net annual growth meaning the removals are not reducing the inventory volume and are only taking a portion of the net growth each year.

The NCFS indicates strong and diverse markets for North Carolina's forest products are critical to maintaining the health and sustainability of our forests. Reliable and diverse markets generally incentivize landowners to keep their forests as forests and make investments in management activities which leads to economic returns and the provisions of societal benefits. An unmanaged stand of trees may have high density with too many trees crowded together. This means the trees grow more slowly as they must compete for a limited amount of soil nutrients, water and light and this stress makes trees more susceptible to disease and pests. The NCFS is ultimately charged with overseeing the sustainability of timber.

Recommendation:
No changes to the draft permit are deemed necessary to address this comment.

4th Comment Grouping

- *The emissions of VOCs combine with NOx to form ground-level ozone. VOCs are also a main precursor that condense and mix into secondary fine particulate matter (PM2.5) pollution. Ground-level ozone is a toxic air pollutant that causes serious health problems including asthma, coughing, throat irritation, bronchitis, and even premature death. Ground-level ozone is*

particularly problematic for young children, the elderly, or anyone with chronic health issues. Ground-level ozone is already North Carolina's leading criteria pollutant.

- *The closest air quality monitors run by the Department of Air Quality are located 30 miles away in Fayetteville and will be ineffective for monitoring local air quality impacts.*

Hearing Officer's Response to This Comment:
The DAQ works with the state's citizens to protect and improve outdoor air quality in North Carolina for the health, benefit and economic well-being of all. To carry out this mission, DAQ operates a statewide air quality monitoring network to measure the level of pollutants in outdoor air. The Clean Air Act requires EPA to set National Ambient Air Quality Standard (NAAQS) for pollutants considered harmful to public health and the environment. Two types of standards are established; primary and secondary standards. The primary standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

DAQ gathers data to evaluate the ambient air quality. DAQ operates and maintains air monitors for particulate matter and ozone in counties near Robeson County. The North Carolina monitoring sites are located in Cumberland, Montgomery, New Hanover, and Johnston Counties and range from approximately 30 to 70 miles from Lumberton. There is also a monitoring site in Florence SC that is located within 60 miles of Lumberton.

The monitors for fine particulate matter (PM 2.5) are located in Cumberland, Montgomery, and New Hanover Counties in North Carolina, and one PM 2.5 monitoring site in Florence SC. The closest PM 2.5 monitoring site is located in Cumberland County, approximately 30 miles from Lumberton. As can be seen by the data below, PM 2.5 levles at these monitoring sites are below the NAAQS standards.

	PM 2.5 Standard	Cumberland Co.	Montgomery Co.	New Hanover Co.	Florence SC
Daily	35 ug/m^3	11 ug/m^3	14 ug/m^3	12 ug/m^3	14 ug/m^3
Annual	12 ug/m^3	7.4 ug/m^3	6.8 ug/m^3	4.5 ug/m^3	7.0 ug/m^3

Data provided are 3-year averages. The Florence SC site has incomplete design values.

DAQ operated a PM monitoring site in Robeson County from November 2000 through December 2014. The EPA and DAQ reviewed the site and the data the site gathered. The agencies concluded that the monitor was not required by 40 CFR 58 Appendix D. The site was measuring concentrations of particulate that were less than 80% of the NAAQS standards and the fine particulate concentrations throughout the state are low. DAQ and EPA conclude the monitoring site was no longer needed to ensure an adequate fine particulate network and, as a result, EPA approved DAQ's plan to close the site. The monitor was shut down on December 31, 2014.

The monitors for ozone are located in Johnston and New Hanover Counties and two ozone monitoring sites are located in Cumberland County. All ozone monitors show the area to be in compliance with the NAAQS for ozone. In addition, upwind monitoring sites in South Carolina also indicate the ozone levels are likely not to exceed the NAAQS for ozone.

Recommendation:
No changes to the draft permit are deemed necessary to address these comments.

5th Comment Grouping:

General comments not directly related to the expressed intent of the public hearing.

- *AERP is in financial difficulty and using this process in an effort to stay in business.*

- *The wood pellet industry only exists because of subsidies from Europe.*

- *AERP's business model depends on foreign subsidies issued by the UK that is moving quickly to decarbonize their economy. Should the UK remove their subsidies, Robeson County will be left without jobs promised by the company, a potentially contaminated stranded asset, and a deforested landscape. Short term profits are not worth the long-term pain this company may inflict.*

- *The increase in truck traffic will damage our roads and increase noise.*

- *The wood pellet industry is plagued by fires and explosion. These fires can have devastating consequences for the community and are difficult to extinguish which can fill nearby neighborhoods with smoke for many weeks.*

- *Production of its wood pellet process has started and creates liquid contaminates but the wastewater treatment permit has expired.*

- *The company does not have a water discharge permit.*

Hearing Officer's Response to These Comments
While most of the comments received were thoughtful and worth considering in the proper forum, some of the comments received were not directly related to the Active Energy Renewable Power air quality permit application or the air quality permitting process. As such, these comments fall outside the purview of this public hearing and are therefore not directly addressed in this report.

Recommendation:
No changes to the draft permit are deemed necessary to address these comments.

Conclusions and Recommendations

After considering all the public comments regarding whether or not DAQ should issue an air quality permit to Active Energy Renewable Energy to allow the construction and operation of a wood pellet manufacturing facility at 1885 Alamac Rd, Lumberton, Robeson County, North Carolina, it is the recommendation of the hearing officer that the Director issue the Air Quality permit after considering the following:

- In response to Section 1 - Comments 1, 3, and 5, it is recommended that a condition be added to the air permit requiring AERP to conduct stack testing to determine the HAP and TAP emissions from the pressure cooker operation and the screw press/pellet press/dryer process. The facility should use the appropriate stack test method to identify emissions of acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde and any other suspected HAP or TAP of concern from these processes.

- In response to Section 1 - Comment 7, it is recommended that the air permit limit the facility's feedstock to wood at no more than 50% softwood.

- In response to Section 1 - Comment 10, it is recommended that the air permit evaluate and include equipment from the lumbermill.

Additionally, I recommend DAQ staff remain sensitive to the health of the nearby communities and to the concerns that will remain should this facility be completed. This can be accomplished with thorough air quality inspections and prompt responses to the citizen's air quality concerns and complaints.

Joseph E. Foutz — 07/15/2020

Joseph E. Foutz, Hearing Officer — Date

SUPPORTING DOCUMENTS

(The following supporting documents are located on the DAQ SharePoint site)

- Air Quality Permit Application Review and Draft Permit
- Audio Recording of June 22, 2020 Digital Public Hearing
- Summary of Digital Public Hearing Comments
- Emails received during the Public Comment Period
- Written Comments received during the Public Comment Period
- Telephone messages received during the Public Comment Period
- Environmental Justice Snapshot