

ROY COOPER  
Governor

MICHAEL S. REGAN  
Secretary

MICHAEL ABRACZINSKAS  
Director



NORTH CAROLINA  
Environmental Quality

August 2, 2020

**MEMORANDUM**

TO: Heather Carter  
Regional Supervisor  
Division of Air Quality – FRO

FROM: Michael A. Abraczinskas, Director

A handwritten signature in black ink, appearing to read "M. Abraczinskas".

SUBJECT: Active Energy Renewable Power, Permit Application Number 7800242.19A and Draft Air Permit Number 10636R00

I have reviewed the Hearing Officer's Report and Recommendations for the Active Energy Renewable Power public hearing held on June 22, 2020. The Hearing Officer and I have considered all comments and information in the record. I have asked staff to prepare a summary of information relevant to some of the community concerns expressed during the comment period regarding potential impacts of the facility on air quality and public health as a supplement to the permit record. The summary document (attached) also includes some additional context and background information about our regulatory structure and how it is designed to protect the public's health. In addition to supplementing the permit record, this summary may also provide useful information to the local concerned citizens. The Division reviewed and considered all of the information included in the attached summary along with the rest of the information in the record.

I agree with the Hearing Officer's recommendations, including:

- A condition be added to the air permit requiring Active Energy Renewable Power 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. This condition will strengthen the permit and is necessary to establish quality data and determine if HAP/TAP emission levels are actually as they were represented in the permit application. The results of the testing will be publicly available.
- A condition be added to the air permit limiting the facility's feedstock to wood at no more than 50% softwood. This condition will strengthen the permit and will provide further assurance that emissions occur as they were represented in the permit application.
- An evaluation and inclusion of the equipment from the lumbermill in the permit.



North Carolina Department of Environmental Quality | Division of Air Quality

217 West Jones Street | 1641 Mail Service Center | Raleigh, North Carolina 27699-1641

919.707.8400

Above and beyond the recommendations of the Hearing Officer, I'm recommending the following:

- Stack testing for VOCs be conducted by the facility within 90 days after start-up rather than 180 days. This amendment to the VOC testing requirement will help the Division more accurately assess the VOC emissions sooner, and provides data to the public sooner.
- A condition be added to the air permit pursuant to authority in 15A NCAC 02D .0600 that requires a semi-annual reporting of facility-wide emissions to the Division. This accountability report will assist the Division in its ongoing compliance evaluations of the facility and ensure the facility is in the proper permit classification. The reports will be publicly available.

These additional conditions are responsive to many of the concerns expressed by commenters. After making the recommended amendments and additions, I ask that you proceed with issuing the air permit. I will also note that the Division will remain sensitive to the health of the nearby communities and to the concerns that will remain should this facility become operational. The Division will continue to work toward addressing these concerns through thorough and unannounced inspections and prompt responses to air quality related citizen complaints.

# Supplemental Air Quality and Community Summary

## Introduction

This report summarizes the results of the assessment completed for the Active Energy air quality permit application.<sup>1</sup> It includes a summary of the community and environmental conditions, as well as the community and environmental impacts examined by the Department of Environmental Quality's (DEQ) Division of Air Quality (DAQ) in reviewing the Active Energy permit application. Public comments during the extended comment period were considered in the assessment and in the development of this report.

## Demographics

An evaluation of the community demographics was conducted by DEQ's Environmental Justice team and consisted of a review of the sociodemographic composition of Robeson County, and more specifically, the population within a 2-mile radius of the proposed Active Energy facility. The sociodemographic variables reviewed include: race and ethnicity; age and sex; disability; poverty; household and per capita income; and limited English proficiency. In addition, DEQ compiled and reviewed lists of local sensitive receptors and local industrial sites within the 2-mile radius of the proposed facility. Finally, DEQ reviewed and compiled county health data for Robeson County using county-level health statistics made available by NCDHHS, which are linked to DEQ's Community Mapping System/EJ Tool,<sup>2</sup> and county health rankings for health factors and outcomes by the Robert Wood Johnson Foundation/University of Wisconsin Population Health Institute (RWJF/PHI).<sup>3</sup>

## County Health data

RWJF/PHI incorporate numerous data sets and measures to rank each county in the United States on health outcomes (such as lifespan and self-reported health status) and health factors (health behaviors, access to care, and environmental, social, and economic conditions).<sup>4</sup> Among North Carolina's 100 counties, Robeson ranks 100th for both health outcomes and health factors.<sup>5</sup> Upon determining Robeson's ranking, DEQ employed the CMS/EJ Tool to further evaluate the county's health attributes. Accordingly, DEQ determined that Robeson County exceeds the statewide average (as defined per 100,000 deaths) for deaths caused by cancer, heart disease, stroke, cardiovascular disease, and diabetes.<sup>6</sup>

---

<sup>1</sup> This document is intended as a summary and supplement to the information already included in the permit record. It is not comprehensive and is not a substitute for the analyses contained in the permit record.

<sup>2</sup> <https://files.nc.gov/ncdeq/EJ/nccms/Updated-Glossary--Final.pdf>

<sup>3</sup> <https://www.countyhealthrankings.org/app/north-carolina/2020/overview>

<sup>4</sup> <https://www.countyhealthrankings.org/explore-health-rankings/measures-data-sources/2020-measures>

<sup>5</sup> <https://www.countyhealthrankings.org/app/north-carolina/2020/rankings/robeson/county/factors/overall/snapshot>

<sup>6</sup> EJ Report

While the proposed Active Energy facility is considered a small facility in the DAQ's air quality permitting classifications, a more expansive two-mile radius from the proposed facility was utilized to evaluate the local demographics and socioeconomics. This radius mirrors the distance previously utilized in DEQ's evaluation of larger wood pellet facilities in the state. Utilizing the two-mile radius informed the Division's efforts for enhanced public participation.

### **Enhanced public participation process**

Following DEQ's EJ evaluation, the agency provided outreach and additional avenues for participation in the Robeson County community, including:

- the preparation of a full Environmental Justice report;
- holding a public hearing (required by the Director based on significant public interest<sup>7</sup>);
- extending the time for the public comment period to 133 total days and postponing the hearing date from March 16, 2020, to June 22, 2020 to accommodate community concerns with COVID-19;
- communicating by phone or virtually with community leaders, local tribal officials and nonprofit organizations;
- creating a PowerPoint of important information regarding the proposed facility's draft air quality permit<sup>8</sup> and posting that material to the DAQ website;
- creating and posting a video to the DAQ website sharing the material in the PowerPoint; and
- preparing a frequently asked questions document<sup>9</sup> describing the proposed facility and the draft air quality permit.

### **Air Quality Permits**

There are three classes of air quality permits in North Carolina: Title V, Synthetic minor and Small.

A Title V permit is required for major sources of air pollution. Under Title V of the Clean Air Act Amendments of 1990, major sources are those with the potential to emit:

- 100 tons per year or more of any one of the 6 criteria pollutants (particulate matter, nitrogen oxides, sulfur dioxide, carbon monoxide, volatile organic compounds and lead)
- 10 tons per year or more of any one hazardous air pollutant (HAP), or
- 25 tons per year or more of any combination of HAPs.

---

<sup>7</sup> 15A NCAC 02Q 0307(e) states: "If the Director determines that significant public interest exists or that the public interest will be served, the Director shall require a public hearing to be held on a draft permit. Notice of a public hearing shall be given at least 30 days before the public hearing."

<sup>8</sup> <https://files.nc.gov/ncdeq/Air%20Quality/permits/hearings/20200316-AERP-Public-Meeting-Presentation.pdf>

<sup>9</sup> [https://files.nc.gov/ncdeq/Air%20Quality/permits/files/Wood\\_Pellets\\_Industry/active-energy/Active-Energy-FAQ.pdf](https://files.nc.gov/ncdeq/Air%20Quality/permits/files/Wood_Pellets_Industry/active-energy/Active-Energy-FAQ.pdf)

A synthetic minor permit is necessary for a facility that otherwise has the potential to emit at or above major source levels, but is taking enforceable terms and conditions to restrict their potential emissions to below major source thresholds.

A small permit is necessary for facilities that do not have the potential to be a major source, but will have emissions higher than exemption levels specified in state rules.

The proposed Active Energy facility has applied for a small permit. The potential emissions for the proposed Active Energy facility are all below 25% of the major source thresholds for each of the criteria and hazardous air pollutants.

Regardless of whether an air quality permit is a Title V, synthetic minor, or small, these operating permits include information about pollutants that will be emitted, and what kind of steps the facility's owner or operator is required to take to reduce the pollution. Permits also include requirements to measure and report the air pollution emitted and/or parameters that readily allow the calculation of emissions.

### **Explanation of air quality and emissions standards**

The Clean Air Act establishes a comprehensive national program that makes States and the Federal Government partners in managing air pollution. The Clean Air Act charges the USEPA with setting National Ambient Air Quality Standards (NAAQS) which prescribe the maximum permissible levels of common pollutants in the air.

The Clean Air Act contains provisions regarding the review and revision, as appropriate, of the NAAQS to provide protection for the public's health and the environment. The Clean Air Act requires periodic review – every 5 years - of the science upon which the standards are based and the standards themselves. The review is a lengthy and comprehensive undertaking and includes the following major phases: Planning; the Integrated Science Assessment (ISA); the Risk/Exposure Assessment (REA); the Policy Assessment (PA); and Rulemaking. The NAAQS review process ensures the standards are protective of public health, with an adequate margin of safety, including the health of at-risk populations.

**The Integrated Science Assessment (ISA)** is a comprehensive review, synthesis, and evaluation of the most policy-relevant science, including key science judgments that are important to inform the development of the risk and exposure assessments, as well as other aspects of the NAAQS review.

**The Risk/Exposure Assessment (REA)** draws upon information and conclusions presented in the ISA to develop quantitative characterizations of exposures and associated risks to human health or the environment associated with recent air quality conditions and with air quality estimated to just meet the current or alternative standard(s) under consideration. This assessment includes a characterization of the uncertainties associated with such estimates.

**The Policy Assessment (PA)** provides a transparent analysis of the scientific basis for alternative policy options for consideration by senior USEPA management prior to rulemaking. Such an evaluation of policy implications is intended to help “bridge the gap”

between USEPA's scientific assessments, presented in the ISA and REA(s), and the judgments required of the USEPA Administrator in determining whether it is appropriate to retain or revise the NAAQS. In so doing, the PA is also intended to facilitate the Clean Air Scientific Advisory Committee's (CASAC's) advice to the USEPA and recommendations to the Administrator, as provided for in the Clean Air Act, on the adequacy of the existing standards or revisions that may be appropriate to consider. The PA focuses on the information that is most pertinent to evaluating the basic elements of the NAAQS: indicator, averaging time, form, and level.

Scientific review during the development of these documents is thorough and extensive. Drafts of all documents are reviewed by CASAC and the public has an opportunity to comment on them. Once the USEPA Administrator makes a determination to revise the NAAQS, federal rule-making is initiated that allows the public another opportunity to provide comments, data, and advice. In the end, the USEPA must base its final reasoning and conclusions on the rulemaking record, consisting of the comments, scientific data, expert opinions, and facts accumulated during the pre-rule and proposed rule stages. Ultimately, USEPA must ensure the NAAQS are protective of public health, with an adequate margin of safety, which includes setting the NAAQS at a level that also protects the health of at-risk populations.

The States, however, retain the primary responsibility for implementing and enforcing those air quality standards within their borders. Thus, NC has developed a comprehensive set of rules containing emission control standards to assure that any source of air pollution is operated with such control or in such manner that the source shall not cause the NAAQS to be violated. Those state rules/programs are reviewed and approved by USEPA as part of the State Implementation Plan (SIP)<sup>10</sup>.

Additionally, North Carolina has an air toxics regulatory program. These air toxics rules were established in the early 1990s in the absence of an effective federal program to protect citizens from adverse health effects from exposure to toxic air pollutants. In the ~30 years since, the USEPA has issued more than 100 technology-based national air toxics standards. The federal standards for existing sources of pollution represent stringent control levels reflecting the 12-percent best-performing units across the nation. For new sources, the federal standards require emissions control currently achieved by the best-controlled similar source. The State's risk-based rules - including the Acceptable Ambient Levels (AALs) for 91 toxic air pollutants - complement the Federal technology-based program and provide an overall robust set of protections for North Carolina's citizens. The State's air toxics program requires a review of maximum projected emissions levels for each toxic air pollutant, and, if necessary, a modeling analysis to show the expected concentrations of individual toxic air pollutants at the property line. The modeled concentration of a given toxic pollutant must be below the AAL at the property boundary. The AALs are established to protect human health in the community surrounding a permitted industrial facility.

---

<sup>10</sup> <https://www.epa.gov/sips/basic-information-air-quality-sips>

## Emissions Profile

The air pollutants listed in the table below are expected to be emitted from the proposed Active Energy facility.

Acetaldehyde
Acrolein
Ammonia
Benzene
Benzo(a)pyrene
Formaldehyde
n-hexane
Toluene
Fine Particulate Matter (PM2.5)
Sulfur Dioxide (SO2)
Carbon Monoxide (CO)
Volatile Organic Compounds (VOCs)
Nitrogen Oxides (NOx)

As noted above, the air quality and emission standards are developed in a way that is designed to protect not only healthy individuals, but also those that are sensitive to air pollution. It is those standards that the proposed facility must comply with as reflected in the air quality permit. With regard to the emission sources at the proposed Active Energy facility, none of the sources are large enough to trigger the federal technology-based program. However, this is where North Carolina's air toxics program provides an additional level of review to ensure the public's health is protected. The review of the projected toxic air emissions from the proposed facility shows that emission levels are well below the screening thresholds that would trigger a requirement for further analysis through modeling. The highest projected toxic air pollutant, relative to the screening levels, is formaldehyde at 40% of the screening level.

## Emissions & Percent increase in county

The proposed Active Energy facility is classified as a small facility for air permitting purposes. The projected emissions from Active Energy are shown in the table below. Those projected emissions are compared to the existing emissions profile for Robeson County for the year 2016.

Pollutant	Projected emissions from Active Energy (tons per year)	Robeson County total emissions (tons per year)	Percent increase in Robeson County with Active Energy's projected emissions
Fine Particulate Matter (PM2.5)	0.05	656	0.01%
Sulfur Dioxide (SO2)	0.05	86	0.06%
Carbon Monoxide (CO)	7.91	18,437	0.04%
Volatile Organic Compounds (VOCs)	23.63	4,139*	0.57%
Nitrogen Oxides (NOx)	9.41	3,348	0.28%
Toxic / Hazardous Air Pollutants	2.48	797	0.31%

\*County total VOCs from naturally occurring sources =21,278 tons

As demonstrated in the table, for any given pollutant, emissions from the proposed Active Energy facility will increase emissions in Robeson County by less than 0.6%.

### Summary of ambient air quality data

DAQ operates a statewide air quality monitoring network<sup>11</sup> to measure the level of pollutants in outdoor air. 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 (PM2.5) are located in Cumberland, Montgomery, and New Hanover Counties in North Carolina, and one PM2.5 monitoring site in Florence, SC. The closest PM2.5 monitoring site is located in Cumberland County, approximately 30 miles from Lumberton. As can be seen by the data below, PM2.5 levels at these monitoring sites are below the NAAQS.

	PM2.5 Standard	Cumberland Co.	Montgomery Co.	New Hanover Co.	Florence SC
Daily	35 ug/m <sup>3</sup>	11 ug/m <sup>3</sup>	14 ug/m <sup>3</sup>	12 ug/m <sup>3</sup>	14 ug/m <sup>3</sup>
Annual	12 ug/m <sup>3</sup>	7.4 ug/m <sup>3</sup>	6.8 ug/m <sup>3</sup>	4.5 ug/m <sup>3</sup>	7.0 ug/m <sup>3</sup>

DAQ operated a PM monitoring site in Robeson County from November 2000 through December 2014. The USEPA and DAQ reviewed the site and the data the monitor 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 in compliance with the NAAQS. DAQ and USEPA concluded the monitoring site was no longer needed to ensure an adequate fine particulate network and, as a result, USEPA approved DAQ’s plan to close the site. The monitor was shut down on December 31, 2014.

Air quality 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 is in compliance with the NAAQS. In addition, upwind ozone monitoring sites in South Carolina also indicate the ozone levels are in compliance with the NAAQS.

Air monitoring site	Current ozone design value (ppb)*
New Hanover	59
Cumberland (Honeycutt)	62
Cumberland (Wade)	62
Johnston	61

\* Note: An ozone design value ≤ 70 ppb is in compliance with the NAAQS.

<sup>11</sup> <https://deq.nc.gov/about/divisions/air-quality/air-quality-data/annual-network-plan/annual-monitoring-network-plan-for-north-carolina-air-quality>



## **Conclusions**

Active Energy has applied for a small air quality permit with potential emissions well below major source thresholds. The final permit has been developed after review of the community demographics and health data, as well as consideration of the comments received throughout the 133-day public participation process. The permit has been strengthened as a result of the public process. The Division's analysis indicates the facility can operate within the relevant standards and rules designed to protect public health with an adequate margin of safety.

