



# Introduction to Air Quality Permitting and Review of the Active Energy Permit

November 23, 2020

NC Division of Air Quality

*Department of Environmental Quality*



# *Outline*

## Introduction to air quality permitting

- Types of air pollutants
- What's an air permit?
- What types of air permits are issued by the State?
- Permitting public participation process

## Review of the Active Energy air quality permit

- Permit summary
- EJ review and enhanced outreach
- Compliance assurance



# *Types of Air Pollutants*

**Criteria Air Pollutants**

**Hazardous Air Pollutants**

**Toxic Air Pollutants**

**Greenhouse Gases**



## *Criteria Air Pollutants*

Ozone

Lead

Nitrogen  
Dioxide

Particulate  
Matter

Sulfur Dioxide

Carbon  
Monoxide

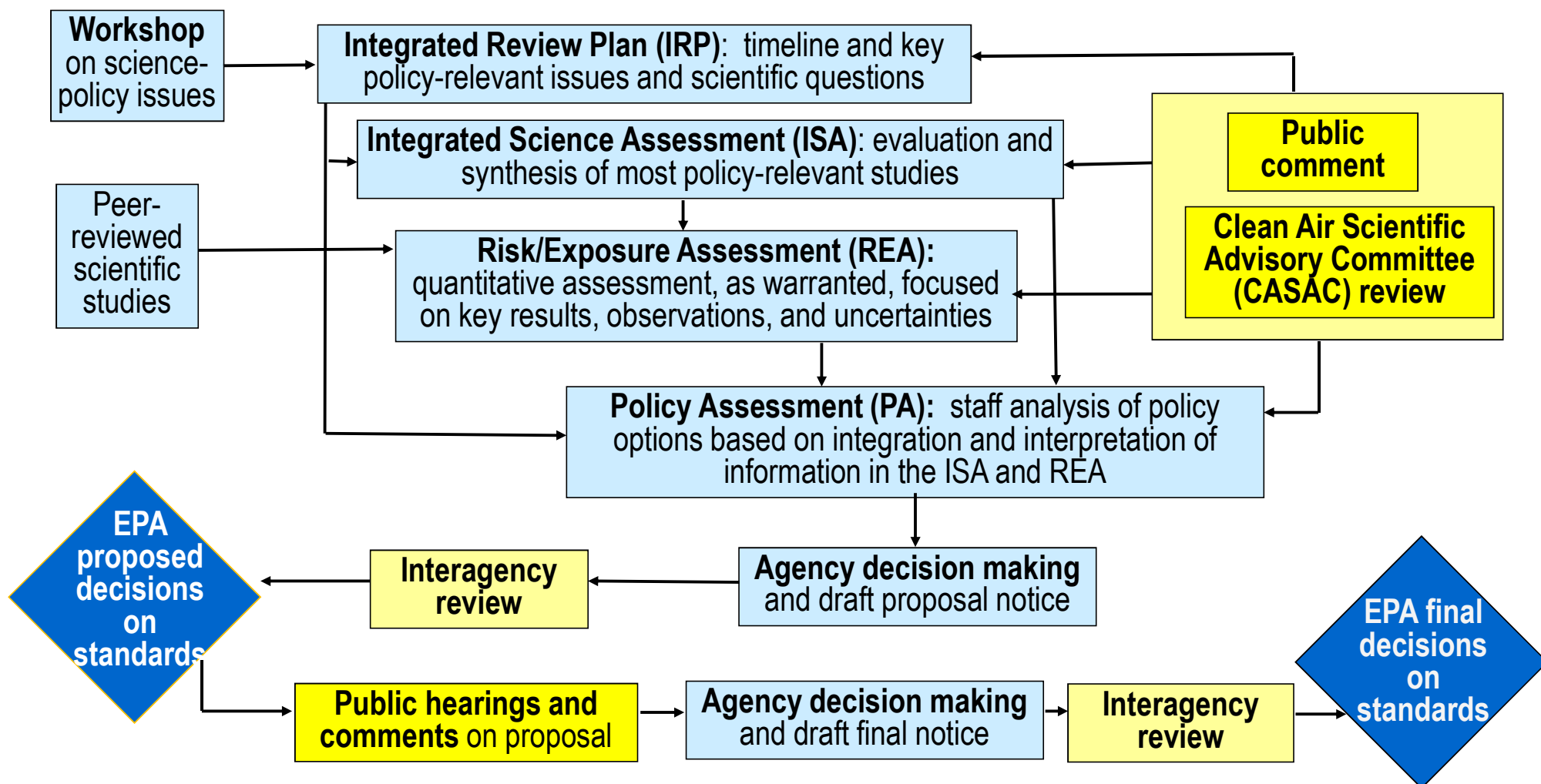


## *Criteria Air Pollutants*

- **National Ambient Air Quality Standards (NAAQS) set the maximum permissible levels of criteria pollutants in the air**
- **USEPA must ensure the NAAQS are protective of public health and set with a margin of safety that protects the health of at-risk populations.**
- **USEPA establishes the National Ambient Air Quality Standards (NAAQS) under the Clean Air Act for the six criteria air pollutants.**
- **5-year review cycle.**
- **USEPA reviews scientific literature on health effects.**



# NAAQS Review Process



## *Criteria Air Pollutants – Emission Standards*

- States, like NC, implement and enforce those national ambient air standards.
- Emissions are what comes out of the smoke stack or tail pipe or other pollution source.
- Emissions standards help achieve and maintain ambient standards.



## *Hazardous Air Pollutants*

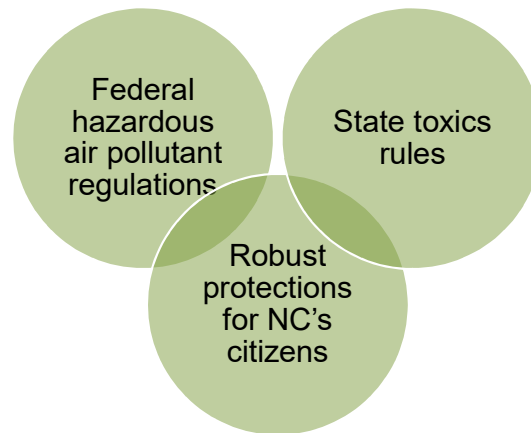
- **Hazardous air pollutants are defined by USEPA as those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.**
  - **USEPA identifies 187 hazardous air pollutants.**
- **USEPA's technology-based regulations apply to the largest emitters of these hazardous air pollutants.**





## *Toxic Air Pollutants*

- North Carolina has risk-based air toxics rules.
- Includes 91 toxic air pollutants
- Acceptable Ambient Levels (AALs)
  - Risk assessments done by NC's Science Advisory Board
  - Regulatory levels set by the Environmental Management Commission



## *What's an air quality permit?*

**A comprehensive document that includes:**

- **information about air pollutants that will be emitted & standards that apply**
- **actions the facility's owner or operator must complete to comply with emission standards**
- **requirements to measure and report the emissions and/or parameters that readily allow the calculation of emissions**



## *What types of air permits are issued in NC?*

- **Title V permits – “Major source”**
  - **Potential to emit more than:**
    - 100 tons per year or more of any one of the 6 criteria pollutants
    - 10 tons per year or more of any one hazardous air pollutant, or
    - 25 tons per year or more of any combination of hazardous air pollutants
- **Synthetic minor permits**
  - **Potential to emit is limited by the permit to below Title V thresholds**
- **Small permits**
  - **Potential to emit below Title V thresholds**



## *Air Quality permitting process*

- **Application submitted**
- **Application review**
- **Drafting of permit review document**
- **Drafting of permit**
- **Public review process (if required)**
- **Review of public comments (if required)**
- **Edits to permit (if required)**
- **Final action on permit**
- **Ensuring compliance with the permit**



## *Permitting Public Participation Process*

- **For draft Title V (Part 70) permits**
  - **public comment period is required**
  - **public hearing if determined to be in the best interest of the public**
  
- **For draft synthetic minor and small permits (permits issued via 02Q .0300)**
  - **public comment period is not required**
  - **public comment period and/or public hearing if significant public interest exists or if determined to be in the best interest of the public**



## *Air Quality permitting process – EJ reviews*

The Department of Environmental Quality has developed guidelines for those permits that meet the threshold for conducting Environmental Justice (EJ) reviews. For Air Quality, those permits are:

- New Title V facilities
- Major modification at a Prevention of Significant Deterioration facility that results in major emissions increases
- Division Director's Discretion



## *What type of air permit was issued to Active Energy?*

- Permit application received November 2019
- A “small” air quality permit was issued on August 3, 2020
- Potential emissions below 25% of the major source thresholds for each of the criteria and hazardous air pollutants.

<b>Pollutant</b>	<b>AERP Expected Actual Air Emissions (tons per year)</b>	<b>Robeson County Total Air Emissions CY 2016 (tons per year)</b>
Fine Particulate Matter PM <sub>2.5</sub>	0.05	656
Sulfur Dioxide (SO <sub>2</sub> )	0.05	86
Carbon Monoxide	7.91	18,437
Volatile Organic Compounds	23.63	4,139
Nitrogen Oxides (NO <sub>x</sub> )	9.41	3,348
Toxic / Hazardous Air Pollutants (acetaldehyde highest)	2.48	797 (CY 2014)



## *Air Quality permitting process – EJ Review*

- **Review of socio-demographics**
  - **race and ethnicity; age and sex; disability; poverty; household and per capita income; and limited English proficiency**
- **Compiled and reviewed local sensitive receptors**
- **Reviewed local industrial sites and environmental data**
- **County health data**





## *Air Quality permitting process – Outreach*

**The DEQ provided 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. The permit was at comment for a total of 133 days.**
- **Calling and/or communicating virtually with community leaders and organizations.**
- **Creating a PowerPoint of important information regarding the proposed facility.**
- **Producing and posting a video associated with the permit application**
- **Creating a frequently asked questions document about the proposed facility.**



## *Air Quality permit for Active Energy Additions as a result of the public process*

- **Stack testing required to determine hazardous air pollutant and toxic air pollutant emissions from certain processes**
- **Limits on feedstock to assure emissions occur as they were represented**
- **Further evaluation and inclusion of wood sawmill equipment**
- **Stack testing for VOCs sooner**
- **Semi-annual reporting of facility-wide emissions**



## *What's in the Active Energy air permit?*

### **Permit Requirements – Applicable Rules and Limits:**

- **2D .0503 PM Limit of 0.50 lb/MMbtu on the boiler**
- **2D .0515 PM Limit on other sources (Calculated based on process rate)**
- **2D .05216 SO<sub>2</sub> limit of 2.3 lb/MMbtu on combustion sources**
- **2D .0521 VE standard of 20% opacity**
- **2D .0535 Requires Notification of Excess Emissions to the DAQ**
- **2D .0540 Fugitive Dust Control Requirement**
- **2D .1806 Control and Prohibition of Odorous Emissions**



## *What's in the Active Energy air permit?(cont'd)*

### **Permit Requirements – Applicable Rules and Limits:**

- **2D .1100 Control of Toxic Air Pollutants**
- **2Q .0711 Emission Rates Requiring a Permit**

**All emission data supplied in the permit application indicated that the toxic air pollutant emissions are well below the DAQ's screening levels. The DAQ permit lists several toxic pollutants and requires that the facility:**

**Test to verify the emission factors**

**Remain below 50% softwood – Any increase in softwood processing would require a permit modification**



## *What's in the Active Energy air permit?(cont'd)*

### **Permit Requirements – Applicable Rules and Limits:**

- **2D .0524 New Source Performance Standard**
  - 40 CFR 60 Subpart Dc**
    - Notification of start up**
    - Record amount of fuel combusted each month**
- **40 CFR 63 - NESHAP/GACT -- Subpart ZZZZ -- Stationary Reciprocating Internal Combustion Engines**



## *What's in the Active Energy air permit?(cont'd)*

### **Testing Requirements – Within 90 days of startup**

- **Verify emission factors used in permit application for:**
  - **Volatile Organic Compounds,**
  - **Formaldehyde,**
  - **Acrolein,**
  - **Acetaldehyde,**
  - **Methanol,**
  - **Phenol,**
  - **Propionaldehyde**

**Shall submit a test plan**

**Shall notify DAQ 15 days prior to testing**

**Shall submit test report no later than 30 days after test**



## *What's in the Active Energy air permit? (cont'd)*

### **Permit Requirements –**

- **Recordkeeping & Reporting**
  - Amount of softwood processed
  - Amount of hardwood processed
  - Amount of wood pellets produced
  - Emissions of:
    - Particulate Matter (PM & PM10)
    - Carbon Monoxide
    - Nitrogen Oxides
    - Sulfur Dioxide
    - Volatile Organic Compounds
    - Hazardous and toxic air pollutants required to be tested



## *What's in the Active Energy air permit? (cont'd)*

### **Permit Requirements –**

- **Equipment Monitoring, Inspection & Maintenance, Recordkeeping**
- **Condenser structural integrity**
- **Condensate analysis**
- **Condenser Continuous Temperature monitoring not to exceed 99C**





## *What happens after an air permit is issued?*

- **The air permit allows construction of the equipment in accordance with the rules.**
- **However, the facility will need to satisfy any other county or local government requirements including construction permitting, zoning compliance, and any other local laws.**
- **New facilities may or may not construct immediately.**
- **Once the facility is constructed and begins operations, a notification of operation is required.**



## *What's the current status of Active Energy?*

- **Construction of permitted sources has not yet started, in the final engineering phase**
- **Anticipate construction starting in 1<sup>st</sup> quarter of 2021**
- **Green wood sawmill is operating as it has been**
- **Log transfer process is operating (transferring whole logs to rail car containers for shipping)**



## *What happens after an air permit is issued?*

- **DAQ Activities:**
  - **Attend Source Testing**
  - **Review all of the reporting and testing for accuracy and compliance.**
  - **Regional staff perform unannounced compliance inspections.**
  - **Regional staff respond to complaints.**



## *Contacts*

**Mike Abraczinskas, EIT, CPM**  
**Director**  
**NC Division of Air Quality**  
**919-707-8447**  
[Michael.Abraczinskas@ncdenr.gov](mailto:Michael.Abraczinskas@ncdenr.gov)

**Michael Pjetraj, P.E.**  
**Deputy Director**  
**NC Division of Air Quality**  
**919-707-8497**  
[Michael.Pjetraj@ncdenr.gov](mailto:Michael.Pjetraj@ncdenr.gov)

*Department of Environmental Quality*

