

Environmental Justice/Title VI Review
Broadwing Energy, LLC
I.D. No: 115015BWL
Application No.: 25040003

1. Introduction:

This document describes the various Environmental Justice (EJ) and Title VI¹-related considerations undertaken by the Illinois EPA's Bureau of Air in evaluating the above-referenced construction permit application. Because the plant would be located in an EJ area of concern, the Illinois EPA's policies for enhanced public outreach and evaluating potential impacts to overburdened communities were addressed in the permit review process. In addition, a Title VI-related settlement agreement (i.e., Informal Resolution Agreement or IRA) entered between the Illinois EPA and the United States Environmental Protection Agency (USEPA) in February 2024² was applied to this review process.

2. Permitting Project:

Broadwing Energy, LLC ("Broadwing") has applied for a construction permit/Prevention of Significant Deterioration (PSD) approval to construct a new cogeneration facility, i.e., a facility that would generate electricity and steam, with a gross electrical output of approximately 452 megawatts (MW). This proposed facility would be located adjacent to the Archer Daniels Midland (ADM) complex in Decatur, supplying steam and electricity to ADM's operations.

The principal emissions unit at the proposed facility would be a cogeneration unit consisting of a natural gas-fired combustion turbine, heat recovery steam generator, and an electric generator. Broadwing's facility would be optimized for steam generation, rather than electrical output. Duct burners would be placed inside of the heat recovery steam generator to provide supplemental firing using the flue gas from the combustion turbine, which would enable additional steam production. The cogeneration unit would also include an amine-based carbon capture process. The carbon capture process would be used to separate CO₂ from the cogeneration unit's flue gas. Separated CO₂ would be transferred and stored in one of ADM's nearby injection wells. This proposed facility would also involve the construction of several other emission units that would support the cogeneration operations, including a cooling tower, fuel gas heater, liquid storage tanks, piping and piping equipment, a fire water pump, and emergency diesel-fired generators.

Because the proposed facility would be considered a major source of emissions, this draft construction permit would require Broadwing to utilize Best Available Control Technology (BACT) for each emissions unit installed. BACT is determined through the permitting process and memorialized in the construction permit. Generally speaking, BACT ensures that each emissions unit is equipped with either add-on control equipment or features designed to achieve the maximum degree of reduction of emissions taking into account energy, environmental and economic impacts.

The draft construction permit would provide for potential emissions as follows:

¹ Title VI refers generally to the requirements of Title VI of the federal Civil Rights Act of 1964, which is one of eleven titles to the law and is entitled "Nondiscrimination in Federally Funded Programs." See, 42 U.S.C. §§2000d to §§2000d-7.

² The negotiated terms of this IRA involved a Title VI disparate impacts complaint filed with USEPA in 2020 stemming from the issuance of a construction permit to General III for the relocation of a scrap metal recycling facility to Chicago's Southeast Side. The *General III* IRA memorializes the Illinois EPA's commitment to consider additional factors in its review of certain construction permit applications, as well as to enhance its public participation policies, for the purpose of improving transparency and assuring meaningful public access to its programs and activities. Additional information concerning the settlement agreement can be found on the Illinois EPA's webpage (i.e., use the Environmental Justice tab from the General Information drop-down menu).

Summary of the Proposed Facility's Potential Emissions

Pollutant	Emissions (Tons/Year)
Nitrogen Oxides (NO _x)	223.72
Carbon Monoxide (CO)	244.45
Sulfur Dioxide (SO ₂)	33.73
Particulate Matter (PM)	95.23
Particulate Matter ₁₀ (PM ₁₀)	165.35
Particulate Matter _{2.5} (PM _{2.5})	162.51
Volatile Organic Material (VOM)	655.80
Sulfuric Acid Mist	30.89
Total Hazardous Air Pollutants (HAPs)	314.38
Greenhouse Gases (GHG), as CO ₂ e	2,992,228*

* This represents the potential GHG emissions of the source, but it does not necessarily mean those emissions are being emitted to atmosphere. Because Broadwing has proposed the use of a carbon capture process as part of its BACT demonstration, the majority of the GHG emissions would not be emitted to atmosphere but rather stored in ADM's well.

3. Mapping Tool Results:

The Illinois EPA continues to implement its EJ Policy through the use of EJ Start, which relies on census data for identifying potential areas of EJ concern based on low income and minority populations. In this case, the Illinois EPA conducted enhanced public outreach because the mapping tool identified the area surrounding the proposed site as a potential area of EJ concern. See, EJ Outreach below.

At the time of this permit review, EJ Screen results previously obtained through the U.S. Environmental Protection Agency's EJ Screen webpages were no longer available. Demographical information relating to the affected community can be found on Wikipedia: The Free Encyclopedia at Decatur, Illinois - Wikipedia, as well as from the American Community Survey database maintained on the U.S. Census Bureau's website.

4. EJ Outreach:

The Illinois EPA conducted enhanced outreach through the EJ notification process. The EJ notification letter was sent to 42 separate groups, individuals, and/or elected officials on August 28, 2025. No comments or questions were received in response to the EJ notification letter.

5. Source Impact Analysis:

Decatur (Macon County) is in an area designated attainment or unclassifiable for all criteria pollutants. This means the area is generally considered to have clean air with respect to National Ambient Air Quality Standards (NAAQS). NAAQS are set for six pollutants (CO, lead, nitrogen dioxide, ozone particulate matter and SO₂) referred to as criteria pollutants. These NAAQS are designed to provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. The NAAQS also provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Because Broadwing would be considered a major source of emissions³, as part of its application, Broadwing was required to submit a source impact analysis⁴ to predict the air quality impacts and show that the proposed facility would not cause or contribute to an exceedance of the NAAQS.

The starting point for determining the extent of the modeling or air quality analysis for a proposed project is evaluating whether the project would have air quality impacts that are deemed “significant.” This is referred to as the significance analysis (Step 1). Under the PSD rules, significant impact levels (SILs) represent numerical thresholds above which more detailed modeling or analysis is needed for a pollutant and averaging period. These thresholds are specified for all criteria pollutants, except lead. If a pollutant shows modeled concentrations below the applicable SIL, it is presumed that a NAAQS exceedance would not occur as a result of the proposed facility.

For a pollutant for which modeled impacts are above the applicable SIL, more detailed “refined” or “full impact” modeling is performed. This is referred to as a refined or full impact analysis (Step 2). For a proposed facility, this modeling addresses the emissions units at the proposed facility and emission units at existing stationary sources in the general area in which the proposed facility would be located, as addressed by the emission inventory for the region. In addition, value(s) for the background levels of ambient air quality in the area for the pollutant, as determined from ambient monitoring, is added to the results of the modeling.

For pollutants for which the refined or full impact modeling indicates modeled exceedance(s) of a NAAQS, a further culpability or “cause and contribute” analysis may be performed consistent with USEPA guidance to evaluate whether the proposed project should be considered to contribute to those exceedances. This is referred to as the refined culpability analysis (Step 3).

The results of the source impact analysis showed that the proposed facility would not cause or contribute to an exceedance of the NAAQS.⁵

Broadwing also provided an additional impacts analysis, which evaluated changes in air quality from local growth due to the proposed facility. This analysis also assessed the potential for visibility impairment and provides assurance that impacts on soil and vegetation would not exceed appropriate ecological soil screening levels. The Illinois EPA reviewed Broadwing’s additional impact analysis and determined that there would be: (i) no impacts due to growth, (ii) no adverse impacts on visibility impairment, and (iii) no adverse impacts to soils and vegetation.

Finally, the air quality analysis also included an evaluation of hazardous air pollutants for the proposed facility. A screening analysis of the toxic pollutants indicated that further analysis was required for emissions of acetaldehyde, acrolein, benzene, diethanolamine, formaldehyde, toluene and xylene. The results of this analysis demonstrate that the modeled concentrations were well below reference concentrations.⁶

For additional details concerning the modeling analysis, see the Memorandum from the Modeling Unit to Joe Fraganato, Construction Unit, Permits/BOA, April 1, 2026.

³ The potential emissions of SO₂ from the proposed facility were not major; however, Broadwing included SO₂ in its source impact analysis to further support this Environmental Justice/Title VI Review.

⁴ The source impact analysis is required pursuant to 35 IAC 204 Subpart F.

⁵ The significance analysis for CO (1-hour average), NO₂ (annual), PM₁₀ (24-hour), PM_{2.5} (annual), SO₂ (1-hour and 3-hour) and ozone showed modeled concentrations below USEPA’s SILs. For CO (8-hour), Broadwing conducted a full impact analysis that showed the proposed facility would not contribute to an exceedance of the NAAQS. For NO₂ (1-hour) and PM_{2.5} (24-hour), Broadwing conducted a refined culpability analysis that showed the proposed facility would not cause or contribute to a modeled exceedance of the NAAQS.

⁶ Reference concentrations obtained from USEPA’s Integrated Risk Information System (IRIS), California’s Office of Environmental Health Hazard Assessment, and Minnesota’s Department of Health.

6. Permit Enhancements:

Permit enhancements consist of permit conditions that are included in construction permits by the Illinois EPA to assure that a source can achieve compliance with applicable requirements, or that are necessary to accomplish the purposes of the Illinois Environmental Protection Act (Act) and are not inconsistent with Illinois Pollution Control Board (PCB) regulations. The Illinois EPA frequently considers permit enhancements when authorized by existing law.

The draft construction permit restricts both the operation and emissions of the various emissions units to be operated at the proposed facility to ensure that the units are constructed and operated in compliance with BACT. The principal emission unit at the proposed facility would be a cogeneration unit comprised of a natural gas-fired combustion turbine generator and a heat recovery steam generator. The cogeneration unit would be equipped with add-on control devices as required by the BACT process. Add-on control devices would include dry low-NOx combustors with selective catalytic reduction for the control of NOx emissions and oxidation catalyst for the control of CO and VOM emissions. In addition, the proposed facility would include a "carbon capture process" designed to separate carbon dioxide from other combustion pollutants in the exhaust of the cogeneration unit. Carbon dioxide separated by the carbon capture process would be transferred off-site to a storage well operated by Archer Daniel's Midland's Decatur Complex.

As part of the BACT process, the construction permit also sets emission limits on the various emission units that would be operated at the proposed facility. The majority of emissions would come from the cogeneration unit or the carbon capture process. For the cogeneration unit, the pollutants emitted in the greatest quantity would be NOx and CO. Emissions of NOx and CO would be continuously monitored to verify compliance with applicable emission limits. Emissions of other combustion related pollutants would be verified by emissions testing using USEPA approved test methods. For the carbon capture process, the primary pollutants would be VOM and HAPs. VOM and HAPs would be present in the solvents that are used to facilitate separation of carbon dioxide. The construction permit requires testing of VOM and HAPs to verify compliance with applicable emission limits.

The cogeneration unit would be subject to several federal rules that address NOx, SO₂, carbon dioxide and hazardous air pollutants, including the New Source Performance Standards (NSPS) for Stationary Combustion Turbines, 40 CFR 60 Subpart KKKKa; NSPS for Greenhouse Gas Emissions for Modified Coal-Fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units, 40 CFR 60 Subpart TTTTa; and National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR 63 Subpart YYYY. Because BACT can be set no lower than the applicable NSPS, this permit is as stringent, if not more stringent, than the applicable NSPS.

The various emission units at the proposed facility would also be subject to various state emission standards. These rules address criteria pollutants and often reflect requirements that are incorporated into Illinois' State Implementation Plan.

7. Past Adjudications and/or Past Compliance History of Applicant:

Because the permitting of the proposed facility implicated the requirements of the General III IRA, the EJ/Title VI review document for this permitting action affirmatively considered the prior adjudications and past compliance history of the permit applicant, consistent with existing permit authorities found in the Act.

In this instance, the applicant does not have a history of past operation for which to assess compliance as the proposed facility would be a new source. Notwithstanding, searches of the applicant's name were conducted revealing no prior adjudications nor the entry of agreed consent orders by Illinois state courts or by the PCB. Similarly, review of USEPA's Enforcement and Compliance History Online (ECHO) shows no compliance data entries or compliance issues for the applicant.

8. *Additional Considerations:*

In general, increased emissions of PM (especially PM_{2.5}) and HAP-related emissions from a proposed facility may present concerns for people residing in the vicinity of proposed facility, particularly where there are other industrial sources located nearby. PM_{2.5} is often a pollutant of concern in communities that border areas of industrial or manufacturing activity because of the adverse effects that smaller-sized particles of PM may pose to the environment or to human health. The air quality modeling analysis showed that modeled concentrations of PM_{2.5} for the annual averaging period would be below the SIL and, for the 24-hour averaging period, would not cause or contribute to a NAAQS exceedance.

In addition, HAP-related emissions from a facility may also pose public concerns due to their individual or collective impacts. The air quality analysis also included an evaluation of HAPs for the proposed facility. A screening analysis of the toxic pollutants indicated that further analysis was required for acetaldehyde, acrolein, benzene, diethanolamine, formaldehyde, toluene and xylene. The results of this analysis demonstrate that the modeled concentrations were well below reference concentrations.

9. *Evaluation of Title VI Criteria for Disparate Impact Discrimination:*

As described by the Overview and Implementation webpage for the *General III* IRA, the criteria for evaluating whether agency action is responsible for disparate impact discrimination is: 1) identifying the policy or practice at issue, 2) a showing of adversity/harm, 3) a showing of disparity and 4) a showing of causation. Although this examination can be complicated, the operative criterion in most cases involving the permitting of air pollution sources is adversity/harm. The Illinois EPA's analysis in this review document examines the issue of alleged adversity/harm by assessing whether circumstances would support an enforcement action brought under existing environmental laws and regulations.

a. *Substantive Standards*

The draft construction permit would authorize construction of the proposed facility. Based on the air quality modeling analysis, the potential emissions from the facility would not cause or contribute to a NAAQS exceedance. As noted, the draft construction permit limits the operation and emissions of the various emission units that would be operated at the proposed facility to ensure the units meet BACT and that the proposed facility would not cause or contribute to a NAAQS exceedance. Nothing presented in the permit review indicates that the proposed project facility would cause a violation of air emission standards addressed by the Act, the PCB's Subtitle C (Air Pollution) regulations, or applicable federal regulations adopted by USEPA and enforceable by the Illinois EPA under state law.

b. *Narrative Standards*

The Illinois EPA has no information that would demonstrate a violation of a narrative standard of air pollution based on possible health impacts.

c. *Nuisance-Based Standards*

As a proposed new source, there is no history of odor complaints or nuisance.