



NEW JERSEY ENVIRONMENTAL JUSTICE ALLIANCE

16 January 2026

Via E-Mail

Kuehne Company
86 North Hackensack Avenue
Kearny, NJ 07032
Attn: Ire Adeleye

CC: David Pepe, Director, Office of Permitting and Project Navigation, New Jersey DEP
Kandyce Perry, Director, Office of Environmental Justice, New Jersey DEP
Shawn LaTourette, Commissioner, Department of Environmental Protection, New Jersey

Re: Kuehne Company Title V Permit Renewal, EJ Project ID No. 35362401

The New Jersey Environmental Justice Alliance (NJEJA) respectfully submits our comments under the New Jersey Environmental Justice Law (EJ Law) and promulgated rules regarding the Kuehne Company's application for a Title V Permit Renewal and submitted Environmental Justice Impact Statement.

New Jersey Environmental Justice Alliance

For over 20 years the New Jersey Environmental Justice Alliance (NJEJA) has served as the only statewide organization in New Jersey that is exclusively dedicated to environmental justice work, and has mobilized other environmental justice (EJ) and social justice organizations as well as

individuals and communities in order to positively impact the quality of life and opportunities for EJ communities (also referred to as overburdened communities by the N.J. Department of Environmental Protection¹), who often face disproportionate burdens as a result of longstanding systemically racist practices at all levels of governance. Our board, staff, and membership are predominantly from New Jersey OBCs, and our work centers around the principles of environmental justice. In this, we know that a community has the fundamental right to self-determination, and lived experience can be a powerful knowledge base with which to guide solutions and planning.

Furthermore, we were a proponent of the landmark 2020 New Jersey Environmental Justice Law (EJ Law), sometimes referred to as the Cumulative Impacts Law, sponsored by N.J. Senators Troy Singleton, Loretta Weinberg, Teresa Ruiz, John McKeon, and Valerie Huttle. The law was signed in September 2020 and with the associated regulations entering into force in April 2023.

NJEJA and our partners - some of whom spoke at Kuehne's EJ hearing - believe that while the passage of this law is critical to supporting environmental justice communities across the state who have disproportionately suffered the impacts of air pollution, environmental degradation, and climate change, laws such as the EJ Law are only as effective as their implementation, accountability mechanisms, and enforcement. Therefore, we respectfully submit these comments today in an effort to underscore areas in which we believe that Kuehne could have adjusted their Environmental Justice Impact Statement (EJIS) in order to more effectively operate their facility, thereby decreasing the emissions burden on the local community. We urge Kuehne and the New Jersey Department of Environmental Protection (DEP) to read and integrate these comments into the remaining portion of the permit process in order to ensure that the EJ Law is fully implemented and fulfilled, both to the letter of the law and in the spirit of the law. We welcome continued conversation in this matter.

¹ New Jersey Department of Environmental Protection. *Overburdened Communities: What are Overburdened Communities (OBC)?*. New Jersey. <https://dep.nj.gov/ej/communities/>.

Kearny, Hudson County - Environmental Justice Landscape

As stated in Kuehne's Environmental Justice Impact Statement, the overburdened community in which the Kuehne facility operates is adverse for 23 of the 26 environmental and public health stressors, which is higher than the 50th percentile for adverse cumulative stressors. In all, the community is adverse for: ground level ozone, cancer risk from diesel particulate matter, cancer risk from air toxics excluding diesel particulate matter, non-cancer risk from air toxics, traffic, heavy duty trucks, railways, known contaminated sites, soil contamination deed restrictions, groundwater classification exception area, solid waste facilities, scrap metal facilities, combined sewer overflows, drinking water, lack of recreational open space, lack of tree canopy, impervious surface, flooding, emergency planning sites, permitted air sites, New Jersey Pollutant Discharge Elimination System Sites, Unemployment, and Education.

Data regarding Kearny and Hudson County² at large indicates several concerning trends which align with the listed adverse stressors mentioned in the EJIS:

- Air Cancer Risk is 332 risk per million compared to the state which is 155. This places Kearny in the 95th percentile.
- Air Non Cancer is 4.4 on the Combined Hazard Index compared to the state which is 2.2. This places Kearny in the 96th percentile.
- Days with AQI above 100 was 6 compared to a state average of 3.2. This places Kearny in the 93rd percentile.
- Kearny is in the 91st percentile for Air Permit Sources.

² New Jersey Department of Health. *Hudson County Kearny Healthy Community Planning Report*. New Jersey State. 2022.
https://www.nj.gov/health/hcpnj/documents/county-reports/HCPNJ_fullreports/HUDSON_KEARNY%20TOWN.pdf.

Likewise, data from the New Jersey Department of Health Community profile³ corroborates these trends:

- Diesel particulate matter in Outdoor Air was 0.57 ug/m³ in Hudson County compared to 0.24 ug/m³ for the state as a whole.
- Emergency Department visits due to Asthma were 43.2 per 10,000 compared to a state average of 40.3 per 10,000.
- Inpatient Hospitalizations due to Heart Attack were 24.0 per 10,000 compared to a statewide average of 22.7 per 10,000.
- Additionally, concentration of the following air toxics in Hudson were higher than the statewide average:
 - Acetaldehyde
 - Acrolein
 - Benzene
 - 1,3 Butadiene
 - Formaldehyde
 - Perchloroethylene

While we do not attribute all of these issues to Kuehne exclusively, the key point is that Kuehne is a contributing factor to this community profile and, in both the spirit and letter of the EJ Law, has an obligation to reduce its emissions contribution level. Furthermore, it should be noted that the OBC in which the Kuehne facility is located is surrounded on all but one side by overburdened communities. Within these communities lie a great number of residents including 5 elementary schools, 1 middle school, 1 high school, 3 day cares, and 2 nursing homes as well as several parks, a field, and a marsh. Additionally, the Kuehne facility is nearby to the Hudson County Correctional Center which can house up to 1,800 individuals⁴ who would also be affected by the localized air pollution. It goes without saying that these facilities host a large

³ New Jersey State Health Assessment Data. *Hudson County Community Health Profile*. New Jersey Department of Health.

<https://www-doh.nj.gov/doh-shad/community/indicators/EPHT/GeoCnty/11.html>.

⁴ Hudson County Correctional Center. *Jail Roster*. Hudson County Court. 2026.

<https://hudsoncountycourt.org/jail-roster/>.

number of vulnerable populations, particularly young children who are severely impacted by toxic air pollution. Given that the EJ Law is intended to reduce the cumulative impact of living, working, playing, and praying in neighborhoods which host polluting facilities, it is incumbent upon both Kuehne - as subject to the EJ Law - and the DEP - as enforcers of the law - to adhere to both the spirit and letter of the EJ Law and to reduce pollution totals from the Kuehne facility.

Examining Kuehne Analysis and Interpretation of the EJ Law

Environmental Justice Law: Obligation to Reduce

First, we would be remiss to not mention - as we have called for in other comments to facilities subject to the EJ Law and Rules - that there is a legal requirement to reduce emissions from a facility. Stated at both the EJ Hearing and in the EJIS, Kuehne consistently underscores that the facility will not bring on additional emissions, however, even if Kuehne is not proposing to increase most of its air pollutant emissions, the EJ Law requires looking for all opportunities to reduce emissions.”

As stated in the EJ Rules, section 7:1C-13, the chapter is promulgated in order to:

“Reduce environmental and public health stressors in overburdened communities in the permitting of new, expanded, and existing major source facilities by requiring incorporation of measures to avoid, minimize, and/or reduce facility contributions thereto.”

Therefore, the rest of these comments connect back to this overarching purpose: to reduce the environmental and public health stressors of this facility, and to ensure that Kuehne is required - either by their own suggestion or by DEP’s - to implement technology and operating practices which will decrease their contribution to the existing stressors in the surrounding OBC and larger Kearny area.

Kuehne's 'Consideration of Other Feasible Control Measures'

As was highlighted in the above section, Kearny and Hudson County are heavily overburdened. While we do not attribute the totality of emissions and stressors to Kuehne, their operation in the overburdened block group is still a contribution. Therefore, Kuehne was required to provide a detailed summary of the different control measures – outlining the processes and technologies available in order of their effectiveness - and to provide a detailed analysis of the feasibility of those measures such as examining the costs associated with the measure and comparing those costs to the benefits of the propose measure. To that end, it does not seem realistic to us that Kuehne could not find a single option across all operations and stressors which would support emissions reductions and decrease their contribution to environmental and public health stressors. Therefore, our recommendations below will supplement and serve as ideal feasible control measures for the DEP to implement in the EJ Decision and Kuehne's permit renewal.

Environmental Justice Conditions

As Kuehne is applying for a permit to renew their application, the facility - additional to the outcomes of the technical feasibility analysis and the facility-wide risk assessment - must ultimately:

“analyze and propose feasible control measures necessary to avoid facility contributions to all adverse environmental and public health stressors in the overburdened community.”

7:1C-8.2

Avoidance of disproportionate impact

We first call into question whether or not Kuehne met their obligations as part of the technical feasibility analysis requirement. Based upon their analysis and Table 9-1 in the Kuehne EJIS, Kuehne appears to interpret N.J.A.C 7:1C-8.5 to require applicants to conduct a technical feasibility analysis on a piece of equipment only when the individual emissions unit is

responsible for more than 20% of the facility's total emissions. However, the rule actually states that a technical feasibility analysis is required "if the facility's current effective operating permit includes any equipment or control apparatus that meets the following: [...] 3. The total emissions of any of the pollutants listed below from all equipment or control apparatus that meet the criteria at (a)1 and 2 above, comprise at least 20 percent of the facility's overall potential to emit that pollutant." That is, applicants must complete a technical feasibility analysis to reduce emissions for all emissions units that collectively emit more than 20% of the facility's total emissions (as long as they meet criteria (a)(1) and (a)(2)). Because Kuehne's analysis only examined emissions units whose emissions individually exceeded 20% of the facility's total emissions, it did not meet this requirement.⁵ Therefore, their analysis in this current iteration of the EJIS is inadequate.

Section 8.6 goes on to underscore that applicants must propose control measures consisting, firstly, of all feasible measures to avoid facility contributions to stressors, and secondly, of all feasible onsite measures to minimize facility contributions to stressors. However, across all stressors, the Kuehne facility did not identify a single control measure which they deemed to be feasible, neither to avoid its contributions, nor to minimize them. In most cases, Kuehne did not even identify the possible additional control measures that could be applicable – simply stating that "[n]o other feasible measures were identified to address this stressor."⁶ Additionally, throughout its analysis, Kuehne did not provide the necessary detail to actually determine whether the measure was feasible. For example, Kuehne would state that its suggested measure was economically infeasible, but would not supply any of the required documentation for this determination – such as an actual demonstration of the costs to install the proposed emissions control measure compared to the costs of its current emissions control measure.⁷ The EJ Rule explicitly requires this information as part of a technical feasibility analysis, and Kuehne failed to meet this requirement. The recommendations we have made in the following sections of these comments are meant to help the applicant and agency fulfill the obligations of the EJ Rules,

⁵ See page 67 of the Kuehne EJIS.

⁶ See page 69 of the Kuehne EJIS.

⁷ See page 71 of the Kuehne EJIS where Kuehne states that wastewater outfall "was found to be economically infeasible" but fails to provide necessary calculations or data to prove their claim.

Chapter 8, which states that the Department shall impose conditions in accordance with 7:1C-9.2(b)2.

Now, to be sure, the EJ Rule's provisions on "Department Review" does impose certain parameters for how DEP will arrive at its decision under 7:1C-9.2. This includes DEP considering public input, the EJIS, the applicant's response to comments, and other supplemental information. But importantly, 7:1C-9.1 notes that DEP should also conduct its own evaluation and determination of feasibility on conditions for the facility's construction and operation, including the control measures that were considered under the technical feasibility analysis. And moreover, DEP's evaluation is not limited to those conditions that the applicant itself proposed.

To be clear, DEP's obligation to review both public input - verbal and written - as well as the applicant's response to comment is not merely a procedural requirement, but a substantive and critical component of ensuring equitable and full implementation of the EJ Law.

Recommendation: Installation of Electric Boilers

First, we urge the Kuehne facility to install and utilize electric boilers instead of currently utilizing natural gas and hydrogen. As stated within the EJIS, "the facility's significant source operations with reportable HAPs"⁸ include these two boilers. Given this information, there is a clear and present opportunity to decrease emissions - both greenhouse gas emissions as well as greenhouse gas co-pollutant emissions - at the Kuehne facility by electrifying the current natural gas/hydrogen boilers.

In their current iteration, the two boilers at the Kuehne facility utilize natural gas combustion as well as hydrogen combustion. We are deeply concerned with both fuel types, with specific concerns regarding hydrogen which are detailed in sections below. In order to best reduce emissions from the facility, Kuehne should electrify both boilers in order to manage all emission

⁸ Kuehne Company. *Environmental Justice Impact Statement*. 16 September 2025.
<https://dep.nj.gov/wp-content/uploads/ej/kuehne-kearny-ejis.pdf>

types and reduce emissions from these two pieces of equipment and guarantee zero emissions at the point of use.

According to the U.S. E.P.A., natural gas-fired boilers produce emissions including the following: nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), VOCs, PM, and trace amounts of sulfur dioxide (SO2).⁹ These emissions have direct contributions to the existing stressors in the OBC in which Kuehne is located.

Emission Type From Natural Gas-Fired Burner	Direct Contribution to Existing Adverse Stressor in OBC?
NOx	Yes, NOx emissions are a precursor to ground-level ozone.
VOCs	Yes, VOC emissions contribute to cancer risk from air toxics as well as non-cancer risk from air toxics.
PM	Yes, PM emissions contribute to cancer risk from diesel particulate matter.
HAPs	Yes, HAPs contribute to cancer risk and non-cancer risk from air toxics.

Of the 8 emissions from natural gas-fired boilers, 3 correlate with existing stressors in the surrounding overburdened community. For the five pollutants that do not correlate, 4 of those pollutants are greenhouse gases and contribute to climate degradation.¹⁰ The last pollutant, sulfur dioxide, is neither a contributor to existing stressors nor a greenhouse gas, but is still considered an indirect greenhouse gas, an air pollutant, and has an impact on local air pollution levels.¹¹

⁹ U.S. EPA. *Natural Gas Combustion*. September 2020.

https://www.epa.gov/sites/default/files/2020-09/documents/1.4_natural_gas_combustion.pdf.

¹⁰ U.S. Environmental Protection Agency. *Overview of Greenhouse Gases*. United States.

<https://www.epa.gov/ghgemissions/overview-greenhouse-gases>.

¹¹ IQ Air. *Sulphur Dioxide*. 2015. <https://www.iqair.com/newsroom/sulphur-dioxide>.

Even when accounting for upstream emissions from electricity generation, electric boilers still pollute far less greenhouse gases. Estimates suggest that throughout the lifecycle, electric boilers have approximately 25% lower CO2 emissions compared to natural gas-fired boilers.¹² These patterns extend to greenhouse gas co-pollutants as well. For NOx in particular, usage of heat pumps and electric boilers realizes NOx emissions which are as much as 95% lower than gas-fired boilers.¹³ Such data is corroborated by a 2025 American Lung Association report which maps the public health benefits and monetized value of those benefits from switching to electrified boilers and heat pumps.¹⁴ While these numbers represent a national scale, New Jersey and the Kuehne facility have the opportunity to realize some of these benefits for the Kearny and Hudson County areas through their transition.

Cumulative Nationwide Health and Climate Benefits of Clean Heat (2030-2050)						
Public Health Benefits (2030-2050)					Value of Benefits (2030-2050)	
Premature Deaths Avoided	Asthma Attacks Avoided	New Asthma Cases Avoided	Lost School Days Avoided	Lost Work Days Avoided	Total Health Benefit	Total Climate Benefit
77,200	33.2 Million	204,000	13 Million	3.4 Million ^b	\$1.11 Trillion ^a	\$351 Billion ^a
^a Calculated in 2023\$ with a 2% discount rate. ^b Considering PM _{2.5} exposure only						

American Lung Association ‘Cumulative Nationwide Health and Climate Benefits of Clean Heat (2030-2050)

In fact, implementation of electrified boilers alongside technologies such as industrial heat pumps and thermal batteries will not only decrease air pollutants and emit zero greenhouse gases as well as zero greenhouse gas co-pollutants, but it will increase energy efficiency at the Kuehne

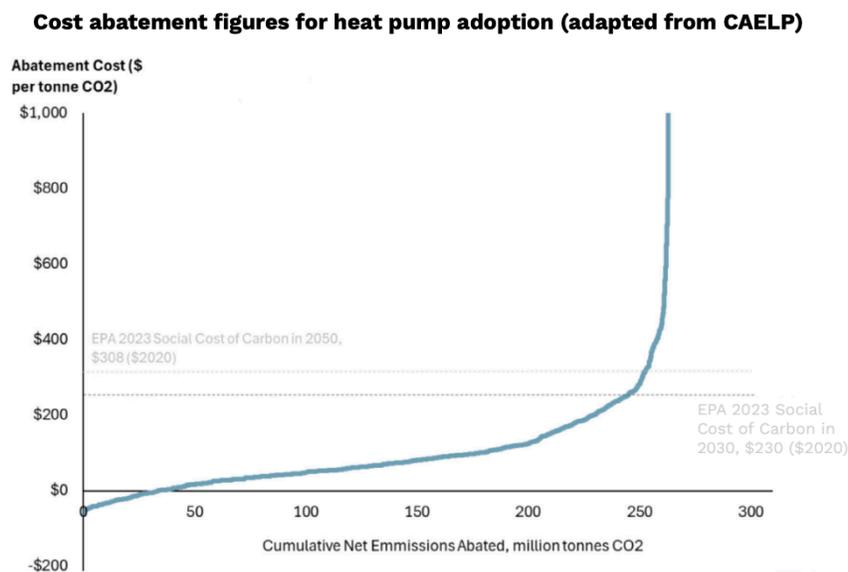
¹² Dolan et al. *Embracing Clean Heat: Opportunities for Zero Emission Industrial Boilers*. May 2025. Sierra Club, Evergreen Collaborative. <https://www.sierraclub.org/sites/default/files/2025-05/embracing-clean-heat-report-executive-summary.pdf>.

¹³ Ibid.

¹⁴ American Lung Association. *Clean Heat, Clean Air: Health Benefits of Modern Industrial Technologies*. August 2025. <https://www.lung.org/getmedia/97c8c798-d246-4f1d-9bd1-dbb77447a816/ALA-Clean-Heat-Clean-Air-Report.pdf>.

facility. This presents an opportunity to benefit both Kuehne via cost savings as well as the local community via emissions reductions.

While we recognize that there may be upfront costs for Kuehne, the lifetime emissions reduction benefits of implementing electric boilers alongside heat pumps will outweigh the additional operating costs. The graphic below demonstrates cost abatement figures for heat pump adoption. According to the Sierra Club, “for the vast majority of modeled units, switching to heat pumps will provide CO2 emission reductions at a cost that falls below (and in most cases well below) EPA’s best estimations of the monetized benefits of those reductions.”¹⁵



Source: adapted from CAELP, *Decarbonizing Industrial Heat: Measuring Economic Potential and Policy Mechanisms*, p.43 (2024)

Recommendation: Installation of On-Site Battery Storage to Transition Away From Emergency Diesel Generators

As the climate continues to worsen, winters will get colder and summers will get hotter. This places additional stress on emergency generators when they are called upon. In order to lessen

¹⁵ Ibid.

this strain, and reduce emissions from emergency diesel generators, we recommend that Kuehne install on-site batteries which can be utilized when needed.

In their current operation, Kuehne utilizes three generators, one 2.0 MW natural gas-fired generator for on-site electricity as well as a second 1.4 MW natural gas-fired generator and third 1,000 KW ULSD-fired generator to provide emergency power. Start-up and shut-down of these second and third generators are extremely costly and contribute to the facility’s emissions totals. Combustion of these two fuel-types contributes to emissions including VOC, PM 2.5, and NOx all of which are directly connected to existing environmental and public health stressors.

Emission Type From Emergency Generators	Direct Contribution to Existing Adverse Stressor in OBC?
NOx	Yes, NOx emissions are a precursor to ground-level ozone
VOCs	Yes, VOC emissions contribute to cancer risk from air toxics as well as non-cancer risk from air toxics.
PM	Yes, PM emissions contribute to cancer risk from diesel particulate matter.

The examination of ‘Reasonable Design Alternatives’ in section 8.11 of the EJIS does not detail any alternative mechanisms to decrease pollution from these generators. However, based upon our research and examination of similar facilities, Kuehne could decrease their emissions from these back-up generators by transitioning to on-site battery storage charged from the grid in times of decreased demand in order to ensure that the facility does not place additional strain on the grid. There are several options that are currently on the market and readily available to install at the Kuehne facility, including both short-duration and long-duration battery storage. While nearly all models could have use and value for the Kuehne facility, based upon Kuehne’s EJIS, it would appear that short-duration battery storage would be most appropriate. This could include

short-term batteries with 2-hour duration, or longer duration batteries with 4-hour or 8-hour duration.¹⁶

In addition to emissions reductions from this transition, utilization of battery storage guarantees immediately dispatchable power for the Kuehne facility and can be further optimized for long-term cost savings if paired with onsite solar generation.^{17, 18}

Recommendation: Requirement of SRS Introduction

As was identified in Kuehne’s EJIS, there is a potential to lower the facility’s combined sewer overflows from via the brine purge system, which accounts for 70% of the total outfall. In order to reduce this number, the facility would introduce a sulfate reduction system (SRS) to lower that portion of the outfall to approximately 10%.¹⁹ However, Kuehne states that this system “was found to be economically unfeasible to Kuehne operations.”

We find this statement to be an unfair, immediate end to the discussion and potential to decrease this stressor. According to the EJ Rules, the only mention of cost refers to the technical feasibility analysis, which the brine purge system is not subject to. However, if we were to examine economic feasibility using this metric, the EJ Rules state that:

“The total and incremental costs of the top measure are greater than the total and incremental costs of the proposed measure(s), which costs shall be calculated using the techniques in the latest edition of the USEPA’s Air Pollution Control Cost Manual and that the extra costs, compared with the air contaminant

¹⁶ U.S. Energy Information Administration. *Duration of Utility-Scale Batteries Depends on How They’re Used*. 25 March 2022. <https://www.eia.gov/todayinenergy/detail.php?id=51798>

¹⁷ U.S. Energy Information Administration. *Energy Storage for Electricity Generation*. 2022. <https://www.eia.gov/energyexplained/electricity/energy-storage-for-electricity-generation.php>.

¹⁸ Power Partner MN. *Generators vs Battery Backup Systems*. December 2025. <https://www.powerpartnermn.com/generators-vs-battery-backup-systems-whats-best-for-your-home-or-business-this-winter/>.

¹⁹ Kuehne Company. *Environmental Justice Impact Statement*. 16 September 2025. <https://dep.nj.gov/wp-content/uploads/ej/kuehne-kearny-ejis.pdf>.

emission reduction benefits resulting from the top measure, would make use of the top measure unreasonable;”

7:1C-8.5:

Technical Feasibility Analysis

Therefore, the costs of each proposed measure for emissions control technology, or in this case, stressor reduction technology, should be measured against other proposed measures in order to determine reasonableness and feasibility, not, as Kuehne has done, outright stated to be too expensive. To this point, Kuehne’s current analysis of economic feasibility is not sufficient and we believe that the DEP has the authority to require SRS to lower the portion of the outfall from the brine purge system and support alleviation of the combined sewer overflow stressor.

Recommendation: Truck Traffic Emissions Reductions

According to Kuehne’s EJIS, truck traffic to and from the facility is expected to increase.²⁰ This poses a significant risk to the surrounding OBC and is likely to increase Kuehne’s contribution to the existing environmental and public health stressors. Diesel emissions have been shown to have a multitude of negative health impacts including, but not limited to, asthma, cancer, and cardiovascular illness.

Furthermore, it should be noted that the ultrafine particles associated with diesel emissions are capable of penetrating the blood-brain barrier, can be easily absorbed by vital organs, and can penetrate cell walls. In 2023 alone, diesel pollution in New Jersey cost the state approximately \$3.75 billion in monetized public health damages, which included more than 330 premature deaths and 20,000 days of lost work.²¹ In addition, diesel exhaust contains more than 40 known cancer-causing organic substances, and is responsible for about 70% of cancer risk related to air

²⁰ It should be noted that we cannot provide recommendations on which vehicles in the fleet, or even what segment of the fleet, should be electrified as fleet information is not publicly available. To that end, we call upon DEP to gather additional data from Kuehne regarding their fleet and provide guidance on which vehicles in the fleet should be prioritized for electrification.

²¹ Clean Air Task Force. *Deaths by Dirty Diesel*. <https://www.catf.us/deathsbydiesel/>.

toxins.²² This has the potential to contribute to existing stressors as demonstrated by the table below:

Vehicle Fleet Consequences	Direct Contribution to Existing Adverse Stressor in OBC?
NOx Emissions	Yes, NOx emissions are a precursor to ground-level ozone.
VOCs Emissions	Yes, VOC emissions contribute to cancer risk from air toxics as well as non-cancer risk from air toxics.
Cancer Risk from repeated exposure	Yes, cancer risk is directly contributing to the stressor “Cancer risk from air toxics.”
Days of lost work due to health consequences	Yes, days of lost work would contribute to unemployment stressors in the area.

To this end, we recommend that the Kuehne facility transition its vehicle fleet, in whole or in part, to electric powered vehicles to decrease its emissions from diesel exhaust and thereby decrease their contribution to existing stressors. Furthermore, a transition to electric powered vehicles could be supplemented with on-site solar generation either via rooftop solar or solar panels on the facility land.

If the DEP determines that vehicle transition, in whole or in part, is entirely infeasible, we strongly recommend that the DEP take measures to ensure that Kuehne’s stated anti-idling policies are actually enforced as well as require the facility to install air monitors which can capture levels of air pollution and corroborate statements of anti-idling success. Options for anti-idling equipment which can still protect workers and ensure safety are readily available, and include auxiliary power units, cab/bunk heaters, coolant heaters, energy recovery systems, and automatic engine stop-start controls.²³

²² California Air Resources Board. *Summary: Diesel Particulate Matter Health Impacts*. State of California. <https://ww2.arb.ca.gov/resources/summary-diesel-particulate-matter-health-impacts>.

²³ Office of Critical Minerals and Energy Innovation. *Idle Reduction Equipment for Heavy-Duty Trucks*. U.S. Department of Energy. <https://afdc.energy.gov/conservation/idle-reduction-equipment>

It should be clearly stated: these measures are of particular importance to the Kearny community as Kuehne explicitly states that they expect truck traffic to increase at their facility.

A Note On Hydrogen

Finally, we must speak briefly regarding our concerns with Kuehne's usage of hydrogen. As stated in the EJIS, Kuehne has a large amount of hydrogen produced as a byproduct from their facility operations. While we recognize that Kuehne's facility conducts an operation which supports the surrounding region and provides necessary goods, we urge the facility - and thereby the DEP - to examine operations and immediate cease combustion of hydrogen in any part of the facility.

Within the EJIS, Kuehne states that some of the excess hydrogen is utilized by their boilers to produce energy, while the rest of the hydrogen is emitted from the stacks as part of their facility emissions. Speaking directly to the former usage, Kuehne states that hydrogen is "combusted in the facility's two emission unit U2803 boilers, Boiler 1 (U7310A) and Boiler 2 (U7310B), to produce steam for building and process heat."²⁴ However, this boiler is also capable of combusting natural gas. Kuehne states that "combusting hydrogen in the presence of oxygen forms water vapor."²⁵

This is demonstrated in the following equation: $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{l})$.

However, we call into question the full validity of this statement. While the equation is accurate, it does not consider or acknowledge that combustion of hydrogen directly produces NO_x. To that end, the formula does not capture the entirety of the potential emissions. If Kuehne and the formular is insinuating that the hydrogen combustion *only* produces water vapor, then we must against call into question the validity of their assertion. To start, we are currently unaware of a

²⁴ Kuehne Company. *Environmental Justice Impact Statement*. 16 September 2025.
<https://dep.nj.gov/wp-content/uploads/ej/kuehne-kearny-ejis.pdf>.

²⁵ Kuehne Company. *Environmental Justice Impact Statement*. 16 September 2025.
<https://dep.nj.gov/wp-content/uploads/ej/kuehne-kearny-ejis.pdf>.

boiler model which is capable of utilizing both hydrogen and natural gas such that the emissions from each fuel type differ so significantly. While we are aware and educated regarding hydrogen fuel cells, which Kuehne's equation might appear and attempt to mirror, the fuel cell process is not combustion in the technical sense. In a fuel cell, hydrogen - combined with ambient oxygen - reacts in an electrochemical reaction to produce electricity.²⁶ The only byproduct of this reaction is water vapor.²⁷ We are also aware of hydrogen engine usage in vehicle fleets, however hydrogen engines operate in a markedly different manner than fuel cells. Instead, hydrogen engines combust liquid hydrogen fuel in the same method as a traditional spark-ignition engine.²⁸ Byproducts of this reaction include small amounts of carbon dioxide (CO₂) as well as nitrogen oxides (NO_x).²⁹

To this end, we are concerned regarding the discrepancy between Kuehne's usage of the word "combustion" while matching this process with an equation that could potentially attempt to demonstrate emissions singularly as water vapor. As far as we are aware, there is no synergy between these two statements, and we believe they likely contradict each other. Furthermore, we are concerned that the facility is aware of their emissions, but that the EJIS is not fully acknowledging the additional NO_x. To that end, we look to Kuehne's section 8.14 in the EJIS which states that "Hydrogen combustion results in higher flame temperatures compared to natural gas. These factors and others have operational effects that require boiler heat inputs to be restricted when combusting hydrogen."³⁰ This appears to insinuate that Kuehne is aware of the additional NO_x emissions as a result of hydrogen combustion. These NO_x emissions would directly contribute to the existing adverse environmental stressors including ground-level ozone.

²⁶ Fuel Cell & Hydrogen Energy Association. *Fuel Cell Basics*.
<https://fchea.org/learning-center/fuel-cell-basics/>.

²⁷ It should be stated that NJEJA does not support the usage of hydrogen fuel cells in the majority of cases as we have identified risks and energy loss associated with hydrogen product and transportation in the early stages of the fuel life cycle.

²⁸ Cummins. *How do hydrogen engines work?* January 2022.
<https://www.cummins.com/news/2022/01/26/how-do-hydrogen-engines-work>.

²⁹ Plant Engineering. *Firing hydrogen in utility-scale power boilers: What you need to know*. January 2024. WTW Media, LLC.
<https://www.plantengineering.com/firing-hydrogen-in-utility-scale-power-boilers-what-you-need-to-know/>.

³⁰ See page 57 of the Kuehne EJIS.

Therefore, based on our analysis above and given that the boilers listed in the EJIS also combust natural gas, it can only be assumed that the listed equation is incorrect and there are other emissions associated with this boiler model. Based upon research from existing models on the market, such emissions could include carbon dioxide and NOx. While this may be marketed to facilities as a feasible alternative to exclusively natural gas fired boilers or methane powered boilers, the existence of NOx emissions is not acceptable for a facility located in or around an overburdened community. This is particularly true for a facility in an OBC that has existing stressors connected to NOx emissions, which is true for the Kuehne facility and corresponding OBC. Therefore, we refer Kuehne and the DEP to our comments above which recommend transition to electric boilers which will guarantee zero emissions at the point of usage and decrease Kuehne's contribution to existing stressors.

Finally, concerning hydrogen usage, we recognize that hydrogen usage in the boilers is a method for Kuehne to divert hydrogen emissions from the stacks. Therefore, a transition to electric boilers cannot be a reason to drastically increase hydrogen emissions at the Kuehne facility. Another emissions reduction technology must be employed in order to protect the surrounding community, and we call upon Kuehne to identify options for this matter.

Conclusion

The lived experience of New Jersey residents in EJ Communities speaks clearly to the necessity to take every step possible to decrease the local air pollution burden on residents and mitigate - as stated by the EJ Rules - both the environmental and public health burden to overburdened communities.. To this end, we reiterate our recommendation to electrify the boilers, install on-site batteries in lieu of emergency generators, require SRS, and electrify the on-site vehicle fleets.

We firmly believe and emphasize that the frontline and fenceline community in the Hudson County area should be centered in this permit renewal, with their health, well-being, and community safety being the utmost priority. As the DEP reviews these comments and the Mercer facility submits their response, we continue to offer our expertise, guidance, and experience to

this conversation. We hope to engage in dialogue with the DEP and welcome further questions, thoughts, and conversation on the recommendations presented in these comments.

##

Co-Signatories:

Camden for Clean Air

Clean Water Action

Earthjustice

EJ Committee of the Metuchen-Edison-Piscataway Branch, NAACP

EJ Committee of the NJ State Conference, NAACP

Environment New Jersey

Ironbound Community Corporation

Newark Science and Sustainability, Inc.

New School Tishman Environment and Design Center

New Jersey Institute for Social Justice

NY/NJ Baykeeper

Operation Grow

South Ward Environmental Alliance

Surfrider

Waterspirit

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