August 29, 2025

Keelyn Walsh
Rules Development Branch
Office of Legal Counsel
Indiana Department of Environmental Management
Indiana Government Center North
100 North Senate Avenue
Indianapolis, IN 46204-2251

SENT VIA EMAIL to kwalsh@idem.in.gov – **DOCUMENT RECEIPT REQUESTED** per public notice

RE: Public Comments on LSA Document #25-204 Nitrogen Oxides Reasonably Available Control Technologies for Lake and Porter Counties

Dear Ms. Walsh,

We submit these public comments on behalf of Just Transition Northwest Indiana, Indiana Conservation Voters, Citizens Action Coalition, Sierra Club Hoosier Chapter, Conservation Law Center, Environmental Law & Policy Center, and Industrious Labs (collectively, "Commenters'') during the second public comment period for the rules proposed by the Indiana Department of Environmental Management ("IDEM" or "Department") to address the reasonably available control technology ("RACT") requirements for nitrogen oxides ("NOx") emissions to be included as part of the Indiana State Implementation Plan ("SIP").[1] In

[1] Notice of Second Public Comment Period, LSA Document #25-204, Nitrogen Oxides Reasonably Available Control Technologies of Lake and Porter County (July 30, 2025), https://iar.iga.in.gov/register/20250730-IR-326250204SNA ("Second Public Notice").

April of this year, IDEM first proposed to add rules at 326 IAC 10-7 to address the NOx RACT SIP requirements for the portions of Lake and Porter Counties designated moderate nonattainment with the 2015 ozone national ambient air quality standard ("NAAQS").[2] Commenters provided written comments to IDEM regarding the proposed NOx RACT rules at that time,[3] and some of Commenters' members also provided oral comments to IDEM at the public hearing held on June 11, 2025.[4]

In the current public notice, IDEM explains:

> This rulemaking provides an enforceable mechanism that satisfies U.S. EPA's SIP requirements for NOx RACT. Specifically, this rulemaking imposes presumptive NOx RACT requirements that are applicable to all major stationary sources of NOx in the nonattainment area, with source-specific requirements for eleven affected sources–eight in Lake County and three in Porter County. IDEM worked extensively with the owner or operator of each affected source and U.S. EPA to ensure that the state remains in compliance with the Clean Air Act while avoiding overly burdensome requirements on these sources.[5]

IDEM explains that it has "made minor and conforming changes to the draft rule language in response to comments and after internal discussion," which did not result in changes to the Regulatory Analysis for the rules or "affect the rule's costs or benefits to any affected individual."[6] IDEM also provides summaries of and responses to comments received at the public hearing regarding the proposed NOx RACT rules.[7] However, the Department has not provided specific responses to the previously submitted written comments, instead noting that written comments "from the regulated community and numerous environmental organizations…were summarized and presented to the environmental rules board at the preliminary adoption hearing on June 11, 2025."[8] Commenters also could not identify any changes to the proposed rule or accompanying IDEM documentation that reflect consideration of our May 9, 2025 public comments. Accordingly, given the lack of responses to our prior written comments, IDEM's responses to public hearing comments, and changes to the proposed rule text, Commenters submit these additional comments on the proposed NOx RACT Rules.

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[2] *See* Notice of First Public Comment Period, LSA Document #25-204, Nitrogen Oxides Reasonably Available Control Technologies of Lake and Porter County (April 26, 2025), https://iar.iga.in.gov/register/20250409-IR-326250204FNA ("First Public Notice").
[3] *See* Ex. 1, Email with attached public comment letter from Hilary Lewis to Seth Engdahl, IDEM Rules Development Branch, RE: Public Comments on LSA Document #25-204, NOx RACT for Lake and Porter Counties (May 9, 2025).
[4] Second Public Notice at 3.
[5] *Id.* at 2.
[6] *Id.* at 5
[7] *Id.* at 3-5.
[8] *Id.* at 3.

1. Commenters Incorporate by Reference Their Prior Public Comments.

As IDEM has not provided a response to the written comments previously provided by Commenters on May 9, 2025, we are incorporating by reference those comments, which are contained in Exhibit 1 to this letter. As explained in those comments, due to the longstanding ozone air quality problems in the Chicago metro area that includes Lake and Porter Counties, IDEM must take additional steps to comply with the requirements of the Clean Air Act ("CAA" or "Act") to address ozone pollution. IDEM's proposed NOx RACT rules do not require any additional controls to address NOx emissions for most air pollution sources in Lake and Porter Counties and thus fail to reduce ozone pollution and will not bring the area into expeditious attainment with ozone NAAQS, as required by the CAA.[9] As explained in our prior comments:

(1) IDEM has failed to provide adequate public notice and a meaningful opportunity to review and comment on these proposed NOx RACT SIP rules because the Department has failed to provide any specific analysis supporting the selection of NOx RACT controls for the specific sources in the Indiana ozone nonattainment area or otherwise provided the information necessary to determine whether the control requirements included in the proposed rules quality as RACT for the these sources, as required under EPA's ozone SIP rules and accompanying guidance;[10] and

(2) IDEM's RACT analysis must consider less-polluting RACT technologies, such as converting the various steel sources to green hydrogen direct reduced iron ("DRI") and electric arc furnace ("EAF") technology and requiring application of electric heat pump technology for certain industrial boilers.[11]

The current public notice fails to address the RACT analysis and related public notice issues identified above. IDEM has not provided its RACT analysis to the public, and any attempt to provide this information at some later stage (such as during creation and submission of the overall SIP addressing the 2015 ozone NAAQS requirements for the moderate nonattainment area) does not correct the lack of sufficient public notice in this rulemaking. The underlying RACT analysis required by the CAA and EPA must be provided to the public now because that information is necessary for the public (and IDEM) to determine if the current proposed rules actually represent RACT for the sources addressed in them, whether the rules impose RACT limits on all major sources of NOx emissions in the nonattainment area,[12] and if additional or different rules are needed.

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[9] 42 U.S.C. § 7502(c)(1).

[10] *See* Ex. 1 at 6-8 and citations therein, including *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements*, 83 Fed. Reg. 62998 (Dec. 6, 2018), and *Ozone NAAQS Resource Document: Due Diligence Review Framework For Air Agencies Developing RACT SIP Revisions* (Dec. 19, 2024), *available at* https://www.epa.gov/system/files/documents/2024-12/o3_ract_dd_resource_12-19-24.pdf.

[11] *See* Ex. 1 at 9-16 and citations therein.

[12] For example, it is not clear how many, if any, major sources of NOx emissions in the Lake and Porter Counties are not subject to the specific NOx emissions limits contained in sections 4 and 8 of the proposed rules but instead

Likewise, in the current public notice, IDEM responds to oral comments made at the public hearing regarding consideration of less-polluting technologies, but this response does not address all the information provided in the prior written comments.[13] IDEM asserts that "RACT is based on controlling emissions from existing emissions units, not requiring facilities to deploy entirely different manufacturing processes" and that " requests for the regulated sources to change to different steel manufacturing processes are beyond the scope of this rulemaking action."[14] However, processes that lower NOx emissions have long been defined as RACT – and, in fact, are included in IDEM's current proposal – and thus the technologies raised by Commenters must be considered and either accepted or rejected within the framework of an overall RACT analysis.[15]

2. IDEM Must Consider Low NOx Burners and Selective Catalytic Reduction in its NOx RACT Analysis for Steel Sector Sources.

Even if IDEM continues to reject consideration of clean steel control technologies such as DRI and EAF, the current proposed rules are insufficient to fulfill NOx RACT requirements because the Department fails to require use of low NOx burners and selective catalytic reduction ("SCR") to control NOx emissions from most emission units at the large steel-related sources that account for more than half of the NOx emissions addressed by this rule: U.S. Steel Gary Works, Cleveland-Cliffs Steel Indiana Harbor East and West, Indiana Harbor Coke, and Cleveland-Cliffs Burns Harbor. Both of these technologies are currently available, add-on controls that could reduce NOx emissions at these facilities and thus must be considered in IDEM's RACT analysis.

According to U.S. EPA, low NOx burners and SCR can provide significant reductions in NOx emissions from a variety of steel applications[16] In addition, the Lake Michigan Air Directors Consortium ("LADCO"), of which IDEM is a member, specifically identified use of SCR and low NOx burners as available control technologies resulting in high (SCR) and

are subject to section 6, which does not impose specific RACT limits but instead requires submission of a source-specific engineering study to IDEM. Section 6 may be sufficient to address RACT requirements when a source becomes subject to the NOx RACT requirement in the future, but it cannot satisfy the current NOx RACT requirement for existing affected facilities, including the many subcontractors that are part that large steel-related sources (i.e., U.S. Steel Gary Works, Cleveland-Cliffs Steel Indiana Harbor East and West, Indiana Harbor Coke, and Cleveland-Cliffs Burns Harbor) and thus subject to the NOx RACT requirements under Sec. (1)(a)(2) of the proposed rules.

[13] *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements*, 83 Fed. Reg. 62998, 63007 (Dec. 6, 2018), *citing* 80 Fed. Reg. 12279 (Mar. 6, 2015) (noting that air agencies' RACT determinations "should also consider all other relevant information (including…information received during the state's public comment period).

[14] Second Public Notice at 3.

[15] *See, e.g.,* the current proposed NOx RACT Rules at 326 IAC 10-7-8 at (a); (b)(1)-(6); (d)(1); (e)(1), (2), (4), and (5); and (f)(2) (including the lower-emitting process of "good combustion practices").

[16] EPA Menu of Control Measures for NAAQS Implementation (Sept. 22, 2022), https://www.epa.gov/sites/default/files/2016-02/documents/menuofcontrolmeasures.pdf, at 6, 8-12, 14-15, 26, and 31 (including low NOx burners or SCR as NOx control strategies for a variety of steel mill and coke applications).

medium-to-high (low NOx burners) NOx emission control for the steel industry.[17] However, IDEM's proposed rules do not include SCR for any of these steel-related sources and only identify low NOx burners as RACT for one unit each at Gary Works, Indiana Harbor East, and Indiana Harbor West, two units at Burns Harbor, and no units at Indiana Harbor Coke, primarily requiring their use only when already existing at these facilities.[18] The failure to include these available and identified NOx controls in additional emission units addressed by the source-specific RACT rules is especially concerning given that IDEM's proposed rules require consideration of low NOx burners and SCR as potential NOx RACT technologies that other sources in the nonattainment area must consider.[19] Accordingly, because use of low NOx burners and SCR can significantly reduce NOx emissions from the sources addressed by the proposed rules, IDEM must consider the use of these technologies as NOx RACT for all applicable emission sources at these steel-related facilities in Lake and Porter Counties.

3. IDEM Must Address NOx Emissions from the Ladle Preheat Equipment at Cleveland-Cliffs Steel Indiana Harbor East, Indiana Harbor West, and Burns Harbor Facilities.

IDEM asserts that it only "made minor and conforming changes" to the proposed NOx RACT rules since the first public comment period.[20] However, a careful comparison of the proposed rules provided in April 2025 and July 2025 shows that IDEM deleted all requirements addressing NOx emissions from the Ladle Preheat Equipment at Cleveland-Cliffs Steel Indiana Harbor East, Indiana Harbor West, and Burns Harbor facilities.[21] Specifically, IDEM deleted the requirements that the ladle preheaters use only natural gas fuel, achieve NOx emissions of 0.09 lb/MMBtu or less, and be operated and maintained to control NOx emissions. IDEM has not explained the reason for removing these requirements. However, these changes are not "minor" since they remove control requirements for more than 100 tons of NOx per year at these facilities.[22] In addition, there is nothing to indicate these removals are "conforming" changes since NOx emissions from the ladle preheaters are not clearly addressed by other provisions in the proposed rules. Accordingly, IDEM must add the NOx requirements for the ladle preheaters back into these rules or explain why the failure to control NOx emissions from these units still represents RACT at the Indiana Harbor East, Indiana Harbor West, and Burns Harbor facilities.

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[17] LADCO, *White Paper: NOx Emission Controls for Stationary Sources in the LADCO Region* (Feb. 2022), https://www.ladco.org/wp-content/uploads/Projects/Emissions-Controls/Ramboll-Stationary-NOx-2021/Final_LADCO_WhitePaper_25Feb2022.pdf, at 9.3 and 9.3.1.
[18] *See* Regulatory Analysis at 4 (explaining that the proposed rules only required application of new low NOx burners at Indiana Harbor boiler #8, which has been idled for over a decade).
[19] Second Public Notice at 13, Provisions (E)(i), (iv), (vii), and (xiii).
[20] Second Public Notice at 5.
[21] *See* Ex. 2 (Redline comparison of IDEM's proposed NOx RACT rules as provided in the April 2025 First Public Notice and July 2025 Second Public Notice) at 19, 20-21, and 23.
[22] *See* Ex. 3 (excerpts of the 2024 emission statements for these sources reporting the following annual NOx emissions for the ladle preheat emission units: 13.325 tons NOx at Indiana Harbor East, 74.05 tons NOx at Indiana Harbor West, and 13.7603 tons NOx at Burns Harbor).

4. Conclusion

As discussed above, the NOx RACT rules currently proposed by IDEM fail to satisfy the procedural and technical requirements of the Clean Air Act to address the moderate nonattainment SIP requirements for the 2015 ozone NAAQS. To meet those requirements and advance the Chicago, IL-IN-WI nonattainment area towards expeditious attainment of the ozone standards, IDEM must provide the public with the technical basis for its NOx RACT rules and, in so doing, consider less-polluting RACT technologies to lower NOx emissions sources throughout the Indiana nonattainment area, especially the steel-related facilities. IDEM must also address NOx emissions from the Ladle Preheat Equipment at the Indiana Harbor East, Indiana Harbor West, and Burns Harbor facilities. IDEM should then re-notice the analysis and resulting rules for public comment.

Please contact us if you should have any questions regarding these comments or would like to set up a meeting to discuss them.

Respectfully submitted,

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Exhibit 1

RE: Public Comments on LSA Document #25-204, NOx RACT for Lake and Porter Counties

Hilary Lewis<hilary@industriouslabs.org> Fri, May 9, 2025 at 2:32 PM
To: sengdahl@idem.in.gov
Cc: Susan Thomas <Susan@jtnwi.org>, Megan Robertson <megan@inconservationvoters.org>, Gary GARD <garyGARD219@gmail.com>, Kerwin Olson <kolson@citact.org>, robyn.skuya.boss@sierraclub.org, "Zoeller, Michael John" <mjzoelle@iu.edu>, Rob Michaels <rmichaels@elpc.org>, Mike Oles <mike@mightyearth.org>

Dear Mr. Engdahl,

Attached please find public comments on behalf of Just Transition Northwest Indiana, Indiana Conservation Voters, Gary Advocates for Responsible Development (GARD), Citizens Action Coalition, Sierra Club Hoosier Chapter, Conservation Law Center, Environmental Law & Policy Center, Industrious Labs, and Mighty Earth regarding LSA Document #25-204, IDEM's proposed rules to address the reasonably available control technology requirements for nitrogen oxides emissions to be included as part of the Indiana SIP. Please contact me or any of the other commenters (also cc'ed here) if you should have any questions regarding these comments or would like to set up a meeting to discuss them.

Respectfully submitted,
Hilary

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HILARY LEWIS (She/Her)

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Comments on IDEM Proposed NOx RACT Rules - May 9 2025.pdf
2337K

April 9, 2025

Seth Engdahl
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SENT VIA EMAIL to sengdahl@idem.in.gov

RE: Public Comments on LSA Document #25-204, NOx RACT for Lake and Porter Counties

Dear Mr. Engdahl,

We submit these public comments on behalf of Just Transition Northwest Indiana, Indiana Conservation Voters, Gary Advocates for Responsible Development (GARD), Citizens Action Coalition, Sierra Club Hoosier Chapter, Conservation Law Center, Environmental Law & Policy Center, Industrious Labs, and Mighty Earth (collectively, "Commenters'') regarding the rules proposed by the Indiana Department of Environmental Management ("IDEM") to address the reasonably available control technology ("RACT") requirements for nitrogen oxides ("NOx") emissions to be included as part of the Indiana State Implementation Plan ("SIP").[1] IDEM proposes to add rules at 326 IAC 10-7 to address the NOx RACT SIP requirements for the

[1] *See* Notice of First Public Comment Period, LSA Document #25-204, Nitrogen Oxides Reasonably Available Control Technologies of Lake and Porter County (April 26, 2025), https://iar.iga.in.gov/register/20250409-IR-250204FNA ("Public Notice").

portions of Lake and Porter Counties designated moderate nonattainment with the 2015 ozone national ambient air quality standard ("NAAQS").

As explained below, IDEM must take additional steps to comply with the requirements of the Clean Air Act ("CAA" or "Act") to address ozone pollution. After decades of being designated nonattainment for ozone pollution, IDEM's newly proposed NOx RACT rules do not require most air pollution sources in the Indiana nonattainment area to install additional controls to address NOx emissions and thus fail to reduce ozone pollution in a meaningful way. Allowing almost all sources in the ozone nonattainment area to simply continue with current operations does not control pollution and bring the area into expeditious attainment with the 2015 ozone NAAQS, as required by the CAA.[2] IDEM's actions thus far have been inadequate, and IDEM must take stronger action to protect public health and the environment. Specifically, IDEM must (1) provide adequate public notice and a meaningful opportunity to review and comment on these NOx RACT SIP rules, and (2) undertake a RACT analysis that considers less-polluting RACT technologies that can expeditiously and meaningfully lower NOx emissions sources throughout these nonattainment areas.

We appreciate the opportunity to comment and look forward to discussing the ideas below with IDEM staff.

I. Background

A. Longstanding Ozone Air Quality Problems

Lake and Porter Counties, either in whole or in part, have been part of the greater Chicago area designated in nonattainment of the federal ozone standards for decades, dating back to the 1979, 1997, and 2008 ozone NAAQS. Most recently, EPA designated specific townships in Lake and Porter County as part of the Chicago, IL-IN-WI nonattainment area for the 2015 ozone standard of 70 parts per billion ("ppb").[3] Because Illinois, Indiana, and Wisconsin failed to bring this "marginal" ozone nonattainment area into attainment within three years, EPA then reclassified the area to "moderate" ozone nonattainment in 2022.[4] The moderate classification triggered Indiana's responsibility to submit a number of SIP revisions required by the Clean Air Act, including new measures to bring down pollution levels and specific plans to continue achieving progress towards attainment.[5] However, IDEM failed to provide those SIP revisions in a timely manner, and EPA made a formal finding of failure to submit that triggered CAA permitting and highway funding sanctions if Indiana did not submit the missing SIP requirements.[6] In the current rulemaking, IDEM is finally addressing the SIP requirements

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[2] 42 U.S.C. § 7502(c)(1).
[3] *See* 83 Fed. Reg. 25776, 25804 (June 4, 2018), and 86 Fed. Reg. 31438, 31446 (June 14, 2021) (together designating Calumet, Hobart, North, Ross, and St. John Townships in Lake County and Center, Jackson, Liberty, Pine, Portage, Union, Washington, and Westchester Townships in Porter County as part of the Chicago, IL-IN-WI nonattainment area).
[4] 87 Fed. Reg. 60897 (Oct. 7, 2022).
[5] *See* 42 U.S.C. § 7502, 7511a(b), (f).
[6] 88 Fed. Reg. 71757 (Oct. 18, 2023).

resulting from the moderate ozone nonattainment classification, as required by the CAA and as necessary to stop imposition of the Act's sanctions.[7]

Meanwhile, pollution levels in the Chicago, IL-IN-WI nonattainment area have remained above the current ozone health standard of 70 ppb. In December 2024, EPA reclassified both ozone areas to "serious" nonattainment.[8] By January 1, 2026, Indiana must submit additional SIP revisions, including more stringent NOx RACT requirements, to address the CAA's serious ozone nonattainment requirements.[9] Without meaningful emissions reductions throughout the Chicago, IL-IN-WI nonattainment area, it is likely that air quality in the Chicago, IL-IN-WI nonattainment area will continue to exceed the 2015 ozone NAAQS. Last summer, ozone levels in the nonattainment area exceeded the ozone standard on 15 days.[10] And such pollution is likely to continue or worsen as the Trump Administration seeks to roll back pollution limits on some of the largest sources of ozone-forming pollutants, like coal-fired power plants.[11]

B. Health and Environmental Impacts of Ozone Pollution

More than 650,000 Indiana residents live in Lake and Porter County, with more than 85% of those residents living in the specific townships designated nonattainment for the 2015 ozone NAAQS.[12] Exposure to ozone, the main component of smog, has detrimental effects on human health. Ozone exposure, even short-term exposure, is linked to chronic conditions affecting the respiratory, cardiovascular, reproductive, and central nervous systems, as well as mortality.[13] Respiratory symptoms of ozone exposure include coughing, wheezing, and shortness of breath.[14] Notably, ozone exacerbates asthma and can contribute to new onset asthma.[15] Accordingly, ozone exposure is associated with increased asthma attacks, emergency room visits, hospitalization, and medication for asthma.[16]

The health effects of ozone exposure are cumulative, increasing with higher ozone concentrations and increased exposure time.[17] The impacts of ozone exposure on the respiratory system can occur at concentration levels below the 2015 eight hour ozone NAAQS.[18] In fact,

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[7] *See generally* Public Notice at 1-2.
[8] 89 Fed. Reg. 101901 (Dec. 17, 2024).
[9] 40 C.F.R. § 51.1402(b)(1).
[10] United States Environmental Protection Agency ("EPA"), Air Data – Ozone Exceedances, *available at* https://www.epa.gov/outdoor-air-quality-data/air-data-ozone-exceedances.
[11] EPA Press Release, *EPA Launches Biggest Deregulatory Action in U.S. History* (Mar. 12, 2025), *available at* https://www.epa.gov/newsreleases/epa-launches-biggest-deregulatory-action-us-history.
[12] EPA, *Chicago, IL-IN-WI Nonattainment Area - Final Area Designations for the 2015 Ozone National Ambient Air Quality Standards - Technical Support Document (TSD) for Counties Remanded to EPA* (May 2021), https://www.epa.gov/sites/default/files/2021-05/documents/il_in_wi_chicago_tsd_remand_final.pdf ("EPA TSD"), at 15 and 13-14.
[13] *See* EPA, Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards (Aug. 2014), EPA-HQ-OAR-2008-0699-0404.
[14] *Id*. at 3-27.
[15] *Id*. at 3-28.
[16] *See id*.
[17] *See id*.
[18] EPA, National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292, 65,292 (Oct. 26, 2015).

ozone concentrations as low as 60 ppb can cause inflammation and decreased lung function in healthy, exercising adults after 6.6 hours of exposure.[19] Furthermore, studies have observed an association between short-term ozone exposure and hospital admission or emergency department visits at concentrations as low as 31 ppb.[20] Ozone concentrations are highest outdoors, but exposure occurs indoors as well.[21]

While the health impacts of ozone are ubiquitous, certain populations are at an increased risk for ozone-related health effects. Those populations include people with asthma and/or lung disease, children, people over the age of 65, pregnant people, people of color, and outdoor workers.[22] Factors contributing to an individual's risk of ozone-induced health burdens include exposure, susceptibility, access to healthcare, and psychosocial stress.[23] These factors can intersect to place certain individuals at even greater risk. For example, children experience increased exposure to ozone because they are more likely to spend time being active outdoors, and increased susceptibility to the health impacts due to their developing lungs and higher occurrences of respiratory infections than adults.[24]

The pervasive impacts of ozone exposure disproportionately burden communities of color and economically marginalized populations. Higher levels of exposure can be attributed to the historical siting of polluting facilities in marginalized communities as opposed to more affluent, predominantly white neighborhoods.[25] Accordingly, people of color, especially Black individuals, carry a higher asthma burden than white people, and are overrepresented in the nation's ozone nonattainment areas. Furthermore, people of color are more susceptible to the impacts of air pollution, such as asthma, diabetes, and heart condition, because they are more likely than white individuals to be living with one or more chronic conditions.[26]

In addition to negative effects on human health, ozone pollution also harms Indiana's natural environment. Ozone pollution can impact plants by reducing photosynthesis, slowing growth, and increasing the risk of disease and damage from other events, and these impacts on plants can have negative impacts throughout the surrounding ecosystem.[27] Ozone pollution reduces insect populations and impedes the complex plant-pollinator relationship, while causing

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[19] EPA, Integrated Science Assessment for Ozone and Related Photochemical Oxidants (2020) at IS-1, *available at* https://www.epa.gov/isa/integrated-science-assessment-isa-ozone-and-related-photochemical-oxidants/.
[20] *Id*. at IS-27.
[21] EPA, Integrated Science Assessment for Ozone and Related Photochemical Oxidants (2013) at 1-3, *available at* https://www.epa.gov/isa/integrated-science-assessment-isa-ozone-and-related-photochemical-oxidants/.
[22] *Id*. at 2-30; EPA, National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292, 65,310 (Oct. 26, 2015).
[23] American Lung Ass'n, State of the Air 2022, Tracking Air Pollution & Championing Clean Air 25 (2022), *available at* https://www.lung.org/getmedia/74b3d3d3-88d1-4335-95d8-c4e47d0282c1/sota-2022/.
[24] *Id*. at 26.
[25] *Id*.
[26] *Id*.
[27] EPA, Ecosystem Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/ecosystem-effects-ozone-pollution.

respiratory, cardiovascular, and other impacts in animal species similarly to humans.[28] Air pollution from sources in Lake and Porter Counties, including those addressed by these proposed rules, have a direct, negative impact on the flora, fauna, and air quality natural sites in the area, including Indiana Dunes National Park and Indiana Dunes State Park. In fact, Indiana Dunes National Park is ranked among the top ten worst national parks for unhealthy air quality and hazy skies.[29] Accordingly, ozone pollution not only harms Indiana's natural environment but can impact the humans visiting area parks and the resulting tourism industry.[30]

II. IDEM Must Take Additional Actions to Satisfy Its Legal Obligations and Protect Public Health in the Chicago, IL-IN-WI Nonattainment Area

Despite the continuing air quality problems experienced in the Chicago, IL-IN-WI ozone nonattainment area and the accompanying public health and environmental impacts faced by more than half -a-million Indiana residents (plus millions more people living throughout the nonattainment area), IDEM has failed to take the necessary actions to control NOx pollution from sources in Lake and Porter County so that the area can expeditiously attain the 2015 ozone NAAQS. IDEM's NOx RACT Public Notice and accompanying Regulatory Analysis repeatedly discuss the potential impacts of CAA sanctions on Lake and Porter County.[31] However, nowhere in the publicly provided documents does IDEM discuss, or even attempt to quantify, the current NOx pollutions from sources in the nonattainment area or the NOx emission reductions expected from these rules, even though the sources in these counties are among the highest NOx emitters in the Chicago ozone nonattainment area.[32]

While IDEM is proposing to adopt rules that aim to address the NOx RACT requirement for relevant sources in the Indiana portion of the nonattainment area, these rules fail to provide meaningful reductions in NOx pollution and ignore modern technologies available to reduce NOx. IDEM's Public Notice of the proposed NOx RACT rules explains that:

> This rulemaking provides an enforceable mechanism that satisfies EPA's SIP requirements for NOx RACT. Specifically, this rulemaking imposes presumptive NOx RACT requirements that are applicable to all major

[28] *See generally* E. Agathakleous *et al.*, *Ozone affects plant, insect, and soil microbial communities: A threat to terrestrial ecosystems and biodiversity*, Sci. Adv. (Aug. 12 2020),6(33), https://pmc.ncbi.nlm.nih.gov/articles/PMC7423369; D.B. Menzel, *Ozone: an overview of its toxicity in man and animals*, J. Toxicol. Environ. Health (1984), 13(2-3), https://pubmed.ncbi.nlm.nih.gov/6376815.

[29] National Parks Conservation Association, *Polluted Parks: How Air Pollution and Climate Change Continue to Harm America's National Parks* (2024), *available at* https://www.npca.org/reports/air-climate-report, at 5 and 7.

[30] A. Hudson, *Indiana Dunes Tourism gives comprehensive look at State and National parks at State of the Dunes event* (April 18, 2025), https://nwi.life/article/indiana-dunes-tourism-gives-comprehensive-look-at-state-and-national-parks-at-state-of-the-dunes-event/ (noting that northwest Indiana's state and local dune parks generated $236.2 million in visitor spending and $25.6 million in state and local taxes during 2023).

[31] *See generally* Public Notice at 1-2 (2 mentions of sanctions); Regulatory Analysis - LSA Document #25-204, https://iar.iga.in.gov/register/20250409-IR-326250204RAA ("Regulatory Analysis"), at 1-3 (more than 12 mentions of the sanctions).

[32] EPA TSD at 11 (Lake County has 2nd-highest and Porter County has 6th-highest county-wide NOx emissions in the nonattainment area).

> stationary sources of NOx in the nonattainment area, with source-specific requirements for eleven affected sources–eight in Lake County and three in Porter County. [33]

However, as IDEM acknowledges in the Regulatory Analysis accompanying these proposed NOx RACT rules, the proposed rules require *only two* emission sources in Lake and Porter Counties to apply new NOx controls—all other major sources of NOx emissions are expected to be able to comply without *any* additional pollution controls or regulatory costs.[34] Not only do these rules reflect IDEM's continued failure to address the air pollution problems caused by sources in the Indiana nonattainment area, but as explained below, IDEM's proposed rules also fail to satisfy the NOx RACT requirements for the moderate nonattainment area SIP.

A. IDEM's Public Notice is Inadequate Because it Fails to Provide the Complete SIP Submission for These Proposed NOx RACT Rules

IDEM explains that this proposed rulemaking "provides an enforceable mechanism that satisfies U.S. EPA's SIP requirements for NOx RACT."[35] The Clean Air Act requires that states provide "reasonable notice" to the public prior to submitting a SIP to the EPA for approval.[36] The federal SIP implementation rules likewise require adequate public notice of any SIP submission.[37] Under those rules, adequate public notice must include access to the proposed SIP submission, including the technical support necessary to determine whether the submission meets the various SIP requirements.[38] With regard to RACT requirements for the 2015 ozone NAAQS, EPA has stated that such RACT submissions must conform with "well-established EPA policies and guidance," and that air agencies' RACT determinations "should also consider all other relevant information (including recent technical information and information received during the state's public comment period) that is available at the time they develop their RACT SIPs."[39]

In this case, IDEM has not provided the public with the information necessary to determine whether the proposed rules actually represent RACT for the sources that produce NOx emissions in Lake and Porter County. IDEM's Public Notice includes only a short summary of the process the Department used to determine the proposed RACT rules. IDEM explains that it began its RACT analysis following EPA's finding that the state had failed to submit a moderate

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[33] Public Notice at 2.
[34] Regulatory Analysis at 4.
[35] Public Notice at 2.
[36] 42 U.S.C. § 7410(a)(1), (a) (2), and (l).
[37] 40 C.F.R. 51.102.
[38] *See* 40 C.F.R. 51.102(d)(2) and Appendix V 2.1(f) (requiring public notice of SIP submissions), and 40 C.F.R. Part 51, Appendix V 2.2 (SIP submissions include technical support).
[39] *Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements*, 83 Fed. Reg. 62998, 63007 (Dec. 6, 2018) ("2015 Ozone NAAQS SIP Rule"), *citing* 80 Fed. Reg. 12279 (Mar. 6, 2015).

area SIP, which Commenters note is more than a year after the area was reclassified to moderate nonattainment and the new SIP requirements applied. Thereafter:

> IDEM began consulting with the owners and operators of major stationary sources in the affected region. IDEM sought information on control technologies already in place at the relevant major stationary sources and which control technologies could be implemented, if reasonably practicable. The owners or operators of the major stationary sources provided relevant data to IDEM for the department to develop rules that impose reasonable NOx RACT requirements. …IDEM worked extensively with the owner or operator of each affected source and EPA to ensure that the state remains in compliance with the Clean Air Act while avoiding overly burdensome requirements on these sources.[40]

The accompanying Regulatory Analysis provides a bit more information, discussing outreach to the affected NOx-producing sources and noting that those sources provided a RACT analysis to IDEM.[41] IDEM also discusses general EPA guidance for determining NOx RACT, use of EPA presumptive NOx RACT levels, and its internal comparison of the proposed rules to a recent Ohio NOx RACT SIP.[42]

However, nowhere in the currently available documents does IDEM provide any specific information about the selection of NOx RACT controls for the specific sources in the Indiana ozone nonattainment area. The Department does not produce a list of the specific sources or source categories that would be subject to these rules, explain the different types of control technologies that IDEM considered for the different RACT source groups, or show how the controls in the proposed rules compare to RACT selected for similar sources in other ozone nonattainment areas. This lack of information is especially concerning since, as noted above, the rules do not result in any additional pollution controls for most of the sources addressed by them. In fact, IDEM's Regulatory Analysis takes great efforts to emphasize the lack of real-world pollution control that these rules would produce. The Department notes that for the source-specific RACT rules, "[o]nly two affected sources would be required to apply new controls," and that in formulating presumptive RACT rules "[i]n several instances, IDEM revised the presumptive limit deriving from Ohio to accommodate the concerns of affected sources. **All affected sources expect to be able to comply with the draft presumptive limits without additional cost or controls.**"[43] Simply put, IDEM's public notice does not provide any information showing that these rules – most of which do not actually require additional control of NOx emissions – represent NOx RACT for the specific sources that must be addressed in this

[40] Public Notice at 2.
[41] Regulatory Analysis at 1, 3, and 4.
[42] It is not clear which EPA presumptive NOx RACT levels are being referenced by IDEM. No such list is provided on EPA's RACT Information website (https://www.epa.gov/ground-level-ozone-pollution/ract-information) and an on-line search only produced a 1994 EPA guidance document (*see https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19940316_berry_nox_ract.pdf)*.
[43] *Id.* at 4 (emphasis in original).

nonattainment areas under the 2015 ozone NAAQS. IDEM must provide the public with the technical information regarding control technologies it considered to control NOx emissions from major sources in Lake and Porter Counties, as necessary to fulfill the federal RACT implementation requirements for the 2015 ozone standard.[44]

While existing SIP guidance makes clear that states can rely on previously adopted controls or rules to fulfill SIP requirements, the states must show that the RACT sources addressed in the current rule "do not need to implement additional controls to meet the [current] ozone RACT requirement…because the fundamental control techniques…are still applicable."[45] EPA has provided additional information about the type of review that states must conduct in demonstrating that their ozone SIP submissions contain RACT and noted that "a RACT SIP revision that simply declares a new or existing regulation meets a presumptive level of RACT with no discussion of due diligence review to be inconsistent with national policy and not approvable."[46] As EPA noted, documenting RACT determinations "help illustrate for the public and the EPA that an air agency considered 'all relevant information (including recent technical information and information received during the public comment period) that is available at the time that they are developing their RACT SIPs'" as required by the 2008 and 2015 ozone SIP requirements rules.[47] In these proposed NOx RACT rules, IDEM has failed to provide any such showing for the public to assess and thus has not provided a meaningful opportunity to comment on whether these rules actually represent NOx RACT for these applicable sources.[48]

Accordingly, the public notice provided by IDEM for this NOx RACT SIP requirement is inadequate. IDEM must provide technical support showing that these rules represent NOx RACT for applicable Indiana sources for the 2015 ozone NAAQS and re-notice the NOx RACT rules to the public so that they can review and comment on that analysis and the resulting proposed rules.[49]

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[44] 2015 Ozone NAAQS SIP Rule, 83 Fed. Reg. at 63007.

[45] *Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements*, 80 Fed. Reg. 12264, 12279 (Mar. 6, 2015), cited in the 2015 Ozone NAAQS SIP Rule, 83 Fed. Reg. at 63007.

[46] EPA, *Ozone NAAQS Resource Document: Due Diligence Review Framework For Air Agencies Developing RACT SIP Revisions* (Dec. 19, 2024), *available at* https://www.epa.gov/system/files/documents/2024-12/o3_ract_dd_resource_12-19-24.pdf ("*RACT SIP Diligence Review Guidance*"), at 3.

[47] *Id*. at 5.

[48] Commenters note that consistent with the Public Notice, IDEM was contacted to request the underlying RACT analysis showing how each of the proposed rules represents RACT for the applicable sources. IDEM noted that such analysis was not available at this time but would be prepared and presented for public comment with the moderate nonattainment area SIP submission.

[49] If IDEM fails to provide such an analysis with these propose NOx RACT rules, IDEM cannot rely on this public notice opportunity to argue that comments on the substance and adequacy of the NOx RACT rules or changes to those rules are outside the scope of any future public process concerning the 2015 ozone moderate nonattainment area SIP submission. *See n. 48, supra.*

B. IDEM Should Adopt Additional Rules to Address RACT and Other Ozone Nonattainment Area Requirements

As discussed above, IDEM has not shown that the proposed rules fulfill the NOx RACT requirements for the moderate ozone nonattainment areas in Lake and Porter Counties. EPA has defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."[50] As discussed above, EPA has made clear that in determining RACT for each SIP submission, states are required to consider not only the existing state and federal control requirements, but "all other relevant information (including recent technical information and information received during the state's public comment period) that is available at the time they develop their RACT SIPs."[51] In so doing, states are directed to "show[] the work" that the proposed rules currently represent RACT for the given source categories, such as providing a demonstration showing how the selected RACT rules compare to federal CTGs and other states' RACT submissions and/or describing the state's RACT review process and how they concluded that the submitted rules represent current RACT.[52]

Not only has IDEM failed to provide any such analysis for the NOx RACT rules listed in the current notice, but the information that is available does not provide any evidence that IDEM considered the latest technology available to reduce NOx emissions from the relevant source categories. As explained below, technologies exist to reasonably reduce NOx pollution from sources in the nonattainment portions of Lake and Porter Counties, and IDEM must consider them before finalizing any NOx RACT rules to address 2015 ozone moderate nonattainment SIP requirements. [53]

1. IDEM's NOx RACT Analysis Must Consider Less-Polluting Control Options in Steel Production

Half of the NOx emission sources addressed by IDEM in the source-specific emission limitations proposed in 326 IAC 10-7-8 and proposed as NOx RACT for this moderate ozone nonattainment area are part of the steel supply industry: US Steel Gary Works, Cleveland-Cliffs Steel Indiana Harbor East and West, Indiana Harbor Coke, and Cleveland-Cliffs Burns Harbor. In general, these facilities either produce or support the production of steel in blast furnace-basic oxygen furnace configuration that relies on coke produced from coal. Thus, IDEM's proposed NOx RACT rules must address the technological advances in steel production that are currently underway. If the U.S. Steel and Cleveland-Cliffs facilities were converted from their current coke-based blast furnace-basic oxygen furnace technology to green hydrogen direct reduced iron ("DRI") and electric arc furnace ("EAF") technology (which can use renewable energy resources

[50] *State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990*, 57 Fed. Reg. 55,620, 55,624 (Nov. 25, 1992) (*citing* 44 Fed. Reg. 53,762 (Sept. 17, 1979)), *available at* https://www.regulations.gov/document/EPA-R09-OAR-2016-0215-0012.
[51] 2015 Ozone NAAQS SIP Rule, 83 Fed. Reg. at 63007.
[52] *RACT SIP Diligence Review Guidance* at 3-5.
[53] We generally note that the NOx emissions reductions that would result from RACT rules implementing these NOx-reducing technologies would also help fulfill Indiana's regional haze obligations under CAA section 169A.

to make steel), NOx emissions from these facilities would be greatly reduced.[54] Likewise, as Cleveland-Cliffs' Indiana Harbor facilities are presumed to be the biggest customer of Indiana Harbor Coke, such a transition would lead to greatly reduced coke production and accompanying NOx emission reductions from Indiana Harbor Coke.

In fact, publicly available information reveals that the three steel primary steel facilities located in the Indiana ozone nonattainment area produce more NOx emissions per ton of iron produced than almost all other steel producers in the United States, as shown below:[55]

Owner	Plant	State	Tons of NOx per thousand tons of iron produced (2020 data)
Cleveland-Cliffs	Burns Harbor	Indiana	1.96
Cleveland-Cliffs	Middletown Works	Ohio	0.91
Cleveland-Cliffs	Indiana Harbor	Indiana	0.76
U.S. Steel	Gary Works	Indiana	0.68
Cleveland-Cliffs	Cleveland Works	Ohio	0.60
Cleveland-Cliffs	Dearborn Works	Michigan	0.17
U.S. Steel	Edgar Thomson	Pennsylvania	0.13

These high amounts of NOx emissions from northwest Indiana steel sources support a transition to much lower-emitting DRI operations. Use of such technology would greatly reduce NOx emissions and thus qualify as RACT under the ozone nonattainment area SIP requirements in CAA section 182,[56] and would also reduce the health impacts of other air pollution (such as particulate matter and sulfur dioxide) on the communities surrounding these facilities.[57]

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[54] Lakes Energy, Elizabeth Boatman PhD, *Dearborn Works: An Integrated Steel Mill Transition Study* (October 2024), https://5lakesenergy.com/wp-content/uploads/2024/10/Dearborn-Works-An-Integrated-Steel-Mill-Transition-Study_5-Lakes-Energy_October-2024.pdf ("Dearborn Works Study"), at 30. *See also* Attachment A, *Industrious Labs: Steel* at 1 (comparing the traditional coal-based blast furnace-basic oxygen furnace steel production, and DRI-EAF steel production).

[55] This table was created using facility-level NOx emissions data from EPA's 2020 National Emissions Inventory (https://awsedap.epa.gov/public/single/?appid=20230c40-026d-494e-903f-3f112761a208&sheet=5d3fdda7-14bc-4284-a9bb-cfd856b9348d&opt=ctxmenu,currsel) and iron production information from Global Energy Monitor's Global Iron and Steel Tracker (https://globalenergymonitor.org/projects/global-iron-and-steel-tracker/).

[56] M. Masterson *et al.*, Reline or Revitalize: The Narrowing Window to Modernize the US Steel Industry (Jan. 30, 2025), https://rmi.org/reline-or-revitalize-the-narrowing-window-to-modernize-the-us-steel-industry/, at Exhibit 4 (estimating more than a 30% reduction in NOx emissions by transitioning away from coal-based steel production, a figure which would likely be even higher for the northwest Indiana sources given their higher-than-average NOx emissions per ton of steel produced).

[57] *See generally* Industrious Labs, *Dirty Steel, Dangerous Air: The Health Harms of Coal-Based Steelmaking* (Oct. 2024), https://cdn.sanity.io/files/xdjws328/production/71057afa03f9784a6599a762149bd87fe735c06a.pdf, and *id.* at

In fact, the other high NOx emissions producer identified above – Cleveland-Cliffs' Middletown Works in Ohio – is already embarking on a plan to transition steel operations from coke-based blast furnace-basic oxygen furnace to a direct reduction furnace followed by electric-powered smelting, then basic oxygen furnace processing (also known as DRI-EMF-BOF).[58] The Middleton facility will be modified to produce iron from iron ore using natural gas and/or hydrogen as the chemical reducing agent, further reducing pollution emissions, including SO_2, from the facility. As Cleveland-Cliffs itself notes, the use of natural gas based DRI-EAF technology is "well established," and the potential use of hydrogen instead of natural gas would lead to meaningful reductions in emissions of both climate and health-harming pollution.[59] Cleveland-Cliffs expects this steel transition project to cause substantial emission reductions, drive down operating costs by $150 per ton, and add 170 permanent good-paying union jobs in Wayne County.[60]

In addition, a recent report by 5 Lakes Energy shows that consideration of cleaner steel production at the Cleveland-Cliffs Dearborn Works facility in Wayne County, Michigan would improve air quality, and result in other health, environmental, and non-air impacts.[61] The Dearborn Works Study provides a roadmap that could reduce harmful pollution from similar steel industries in Lake and Porter Counties. The Study observes that the interior lining of the blast furnace at Dearborn Works is nearing the end of its lifetime, and that to continue production of steel from iron ore at the facility, Cleveland-Cliffs will have to commit upwards of $470 million to reline its blast furnace – which would lock SO_2-intensive, coke-based steel production into Dearborn Works' future through the 2040s.[62] The alternative, as the Study points out, is that the facility could instead invest that capital into the construction of a new DRI-EAF steel mill at the Dearborn Works site, and electrify all operations at the facility using renewable energy, eventually fueling the new DRI furnace with green hydrogen.[63] The Dearborn Works Study makes clear that in addition to reducing air pollution, such a transition would result in strong benefits to the health and environment of the surrounding communities.[64] These communities would face dramatically lower amounts of all air pollutants, including NOx, while the transition to clean steel production would also reduce water use, consumption, and pollution, and would be an economic driver throughout the state.[65]

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13 (noting that residents of Gary, Indiana, where the US Steel Gary Works plant is located, are in the top 10% of U.S. residents nationwide that are most at risk for developing asthma and having low life expectancy).

[58] *See* https://www.clevelandcliffs.com/news/news-releases/detail/629/cleveland-cliffs-selected-to-receive-575-million-in-us.

[59] *Id.*

[60] *Id.*

[61] *See generally* Dearborn Works Study.

[62] *Id. at 18.*

[63] *Id.* at 15.

[64] *Id.* at 11, 27-30.

[65] *Id.* at 29-30, 21-22, and 37-38, respectively.

The results discussed above for Middletown Works and Dearborn Works could also be achieved at the steel-related facilities in the northwest Indiana nonattainment area, especially given the scope of steel production in Lake and Porter Counties and the upcoming investments being contemplated for these facilities.[66] Technologies to transition major sources in Lake and Porter Counties away from coal-based steel production are available and would result in better control of NOx emissions in the Indiana ozone nonattainment area. Accordingly, IDEM must consider the technologies discussed above when developing the NOx RACT rules for steel production facilities in the 2015 ozone moderate nonattainment area SIP.

2. IDEM's NOx RACT Analysis Must Consider Less-Polluting Control Options for Industrial Boilers[67]

Aside from the steel-focused source-specific NOx rules discussed above, most of the other proposed NOx RACT rules address emissions from other boilers, turbines, engines, and furnaces at other industrial sources. Lower NOx-emitting technologies exist for these sources that IDEM must consider in this rulemaking. Industrial sources around the country that have historically relied on fossil-fuel burning boilers to produce steam for manufacturing processes that require low- to medium-heat (0–500º C) have applied industrial heat pump technology to eliminate fossil fuel use—and correspondingly eliminate ozone-producing NOx and VOC emissions—at their facilities. Following the lead of other air regulators facing stubbornly high ozone levels, IDEM could obtain significant NOx reductions by revising its NOx RACT rules to require certain industrial facilities to transition from fossil fuel-fired boilers to industrial heat pumps. As discussed below, industrial electrification technologies qualify as RACT since they are readily available to replace boilers for many industrial applications and economically feasible.[68] The Department must consider these technologies in the context of the NOx RACT requirement (as well other serious nonattainment area SIP requirements, such as Reasonable Further Progress, Reasonably Available Control Measures, and the Attainment Demonstration).

While the industrial sector encompasses a wide range of products, processes, and technologies, an outsized share of industrial pollution results from one process that is common across subsectors: industrial heating.[69] The nonattainment portions of Lake and Porter Counties contain more than 40 boilers included in the National Emissions Inventory, the vast majority of

[66] M. Masterson *et al.*, Reline or Revitalize: The Narrowing Window to Modernize the US Steel Industry (Jan. 30, 2025), https://rmi.org/reline-or-revitalize-the-narrowing-window-to-modernize-the-us-steel-industry/, at Exhibit 1 (noting expected relining of the blast furnaces at the NW Indiana steel facilities between 2025 and 2041).
[67] Much of the information in this section is drawn from a forthcoming white paper to be published by Sierra Club and Evergreen Action. Commenters will provide the full white paper to IDEM when available.
[68] If IDEM declines to adopt new revisions as part of the current RACT analysis for the moderate ozone nonattainment, IDEM must at a minimum consider these technologies as part of SIP revisions due for the serious ozone nonattainment areas, affecting sources emitting 50 tons of NOx per year and up, *and again* in conducting the NOx RACT analysis for the SIP submission that would be required if/when the Chicago, IL-IN-WI nonattainment area is redesignated to severe nonattainment, affecting sources emitting 25 tons of NOx per year and up.
[69] *See* U.S. Dept. of Energy, Industrial Heat Shot, https://www.energy.gov/topics/industrial-heat-shot ("Industrial heating accounts for about 9% of the entire U.S. emissions footprint and nearly half of the energy-related emissions that the manufacturing sector creates.").

which burn fossil fuels to create the heat needed for industrial processes.[70] An additional tool examining small boilers that might not be captured in the National Emissions Inventory shows an additional 80 small boilers in the Indiana moderate ozone nonattainment area.[71] The concentration of more than 120 industrial boilers in Lake and Porter Counties represents an important opportunity for IDEM to further reduce ozone-producing emissions in this NOx RACT rulemaking.

Much of the pollution from industrial heating taking place in the Indiana nonattainment area could be eliminated with technologies that already exist and are being implemented to replace fossil-fuel burning boilers at facilities around the country. Indirect heating—heat generated by boilers and typically delivered through fluids such as steam—requires lower temperatures, and therefore typically can be achieved with electric heat pumps, which are cost-competitive with fossil fuel alternatives. The industrial heat landscape is typically broken down into three tiers: low (<130°C), medium (130–500°C), and high (>500°C) heat. Industrial facilities that employ gas-burning boilers for low- and medium-temperature applications are best able to adopt electric technology to replace these boilers and eliminate NOx and VOC emissions. Industrial heat pump technology is already proven and available to replace boilers in processes ranging from 60–200°C,[72] and electric boilers (including electric resistance and electrode-

[70] Evergreen Action, National Boiler Map, *available at* https://clausa.app.carto.com/map/07d7be74-69f7-4a7f-9cd7-bb92a84b5db3?lat=39.691781&lng=-102.380210&zoom=4 (using lasso tool). Evergreen Action has not yet officially released its National Boiler Map as it is still making adjustments to the map interface, but the tool is cited with permission here. The National Boiler Map relies upon a boiler dataset drawing upon EPA's National Emissions Inventory (2020) and prepared by AJW, Inc. AJW, Inc's methodology is available upon request. While the Evergreen map is limited to boilers listed in EPA's National Emissions Inventory, other studies have identified additional boilers not included there (see next footnote).

[71] ACEEE, Small Industrial Boilers and Ozone Pollution Across the United States, *available at* https://www.aceee.org/small-industrial-boilers-and-ozone-pollution-across-united-states. The ACEEE database relies on Schoeneberger et al.'s boiler inventory to locate boilers with capacities less than or equal to 50 million British thermal units per hour (MMBtu/hr). *See also* Carrie Schoeneberger, et al. "Electrification potential of U.S. industrial boilers and assessment of the GHG emissions impact," (Feb. 2022), Advances in Applied Energy, Vol. 5, *available at* https://doi.org/10.1016/j.adapen.2022.100089.

[72] Renewable Thermal Collaborative, Industrial Decarbonization Package (Sept. 2023), https://www.renewablethermal.org/wp-content/uploads/2018/06/Decarbonization_FullPackage_Updated-Sept-2023.pdf; ACEEE, *Topic Brief: Net-zero industry by 2050: a scenario analysis of boiler replacement with industrial heat pumps* (Dec. 2024), https://www.aceee.org/sites/default/files/pdfs/net-zero_industry_by_2050_-_a_scenario_analysis_of_boiler_replacement_with_industrial_heat_pumps.pdf; ACEEE, How to Decarbonize Industrial Process Heat While Building American Manufacturing Competitiveness (Apr. 2024), https://www.aceee.org/sites/default/files/pdfs/how_to_decarbonize_industrial_process_heat_while_building_american_manufacturing_competitiveness.pdf; Schoeneberger, et al, *supra* n. 71; M. Jibran S. Zuberi, et al., "Electrification of Boilers in U.S. Manufacturing," Lawrence Berkeley National Laboratory, LBNL-2001436, https://eta-publications.lbl.gov/sites/default/files/lbnl_2001436_boiler_final.pdf; Jeffrey Rissman. "Decarbonizing Low-Temperature Industrial Heat in the U.S," (Oct. 2022), Energy Innovation Policy And Technology, https://energyinnovation.org/wp-content/uploads/Decarbonizing-Low-Temperature-Industrial-Heat-In-The-U.S.-Report-2.pdf; Energy Innovation Policy & Technology LLC, Industrial Electrification as a Decarbonization Strategy, https://icc.illinois.gov/api/web-management/documents/downloads/public/future-of-gas/Industrial%20Electrification%20Presentation_11-4-2024.pdf. Commenters are providing IEPA with copies of these materials in an Appendix to this comment letter.

equipped units) can replace gas boilers for applications up to 500°C (and, in fact, as high as 1,800ºC).[73]

Although there is an upfront capital cost for such retrofits, the significant efficiency gains from industrial heat pumps in comparison to fossil fuel boilers help reduce fuel costs, especially when paired with a thermal battery that could allow the facility to take advantage of off-peak electric rates.[74] Moreover, electricity has historically had more price stability than natural gas. A recently published book discussing pollution-cutting innovations in the industrial sector explains that "[e]lectricity has efficiency advantages that can partially or fully compensate for higher prices [compared to fossil fuels]."[75] In particular, "a heat pump may provide several times more heat than the amount of electricity consumed."[76] Further, because "thermal batteries can enable industrial facilities to purchase more electricity in hours when it is cheaper and avoid buying electricity in hours when it is more expensive," leveraging storage of heat in batteries "can lower an industrial facility's cost of electrical heat by one half to two thirds, making it competitive with the cost of natural gas heating."[77] In addition to fuel cost savings, replacing a facility's gas boiler with a heat pump has other benefits, such as reduced need for cooling water, reduced noise, reduced waste generation and disposal fees, and improved workplace health and safety.[78]

Even if not every individual facility in the ozone nonattainment portions of Lake and Porter Counties would make a business decision to electrify its heating operations, IDEM must still consider whether zero-emission technologies available for industrial heating needs satisfy the RACT definition. In evaluating RACT, EPA

> presumes that *it is reasonable for similar sources to bear similar costs of emission reductions. Economic feasibility rests very little on the ability of a particular source to 'afford' to reduce emissions to the level of similar sources.* Less efficient sources would be rewarded by having to bear lower emission reduction costs if affordability were given high consideration. Rather, economic feasibility for RACT purposes is largely determined by evidence that other sources in a source category have in fact applied the control technology in question.[79]

[73] *See, e.g.*, Zuberi et al., *supra* note 72, for a discussion of electric boilers, which the report views as a "mature technology" that still faces some financial barriers depending on local energy costs; *see also* Renewable Thermal Collaborative, *supra* note 72 at 11-12; Renewable Thermal Collaborative, Electrification Action Plan (Jan. 2024), https://www.renewablethermal.org/wp-content/uploads/2018/06/01.19.24_Final_RTC-Electrification-Action-Plan_Updated.pdf.
[74] *See, e.g.*, Brattle, Thermal Batteries: Opportunities to Accelerate Decarbonization of Industrial Heat (Oct. 2023), https://www.renewablethermal.org/wp-content/uploads/2018/06/2023-10-04-RTC-Thermal-Battery-Report-Final-.pdf.
[75] Jeffrey Rissman, ZERO-CARBON INDUSTRY (2024), at 153.
[76] *Id.* at 137.
[77] *Id.* at 146.
[78] *See* Energy Innovation Policy & Technology LLC, *supra* note 72.
[79] 57 Fed. Reg. at 18,074 (emphasis added).

That evidence exists for industrial heat pumps and thermal batteries (and for electric resistance boilers in some contexts). Heat pumps and thermal batteries have been successfully demonstrated in the pharmaceutical, food, and pulp and paper sectors, among others. Numerous facilities in these sectors have adopted electrification technology to replace the use of fossil fuel-fired boilers, and a number of states are implementing programs to advance industrial electrification technology further.[80] In Indiana, a lumber mill in Monon (located directly south of the nonattainment areas) is already operating an industrial heat pump in its dry kilns, and the Kraft Heinz Foods Company in Kendallville is planning to replace fossil fuel-fired boilers with electric heating technology.[81] A database of industrial electrification deployments shows a number of facilities throughout the Midwest that are using or plan to use industrial heat pumps for industrial purposes, including facilities in Ohio, Illinois, Michigan, and Wisconsin.[82] In addition, other air regulators facing persistent ozone problems similar to those in the Chicago, IL-IN-WI nonattainment area have finalized or are developing rules requiring a transition away from fossil-fuel fired boilers in light of readily available heat pump technology.[83] Industrial heat pumps are thus both technologically and economically feasible at Indiana facilities using boilers to create heat for similar processes.

As discussed above, many industrial boilers are located in the Indiana moderate ozone nonattainment area at issue in these proposed NOx RACT rules. Industrial boilers burning natural gas account for far higher NOx (and carbon dioxide) emissions per mmbtu than electric technologies, even considering anticipated upstream emissions from electricity production.[84] Ending these facilities' reliance on fossil fuels represents an enormous opportunity to improve public health while also advancing the Chicago, IL-IN-WI ozone nonattainment area towards attainment of the 2015 ozone NAAQS.[85] Electrification of boilers at these sources represent a

[80] *See, e.g.*, RISE PA program, https://www.pa.gov/agencies/dep/programs-and-services/energy-programs-office/rise-pa.html; Minnesota Public Utility Commission, Natural Gas Innovation Act, https://mn.gov/puc/activities/economic-analysis/ngia/, and related Xcel Energy and CenterPoint Energy plans linked therein; Center for American Progress, State Efforts To Decarbonize Key Industrial Sectors (Nov. 14, 2014), https://www.americanprogress.org/article/state-efforts-to-decarbonize-key-industrial-sectors/, fn. 92-94 and related text (describing Colorado incentives for industrial heat pumps).

[81] ACEEE, *Industrial Electrification Across the United States* (Feb. 11, 2025), https://www.aceee.org/industrial-electrification-across-united-states; *see also* https://news.kraftheinzcompany.com/press-releases-details/2024/Kraft-Heinz-Seeks-EPCm-Company-to-Support-its-Delicious-Decarbonization-Project/default.aspx.

[82] *Id.*

[83] *See* South Coast Air Quality Management District, Rule 1146.2 (adopted June 2024), https://www.aqmd.gov/home/rules-compliance/rules/support-documents/rule-1146-2-details (phasing in zero-NOx emission requirements for small boilers, large water heaters, and process heaters); Proposed Amended Rules 1146 and 1146.1 (currently in workshop development), https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1146-1146-1 (assessing zero-NOx emission requirements for larger boilers).

[84] *See* Center for Applied Environmental Law and Policy/E3, *Decarbonizing Industrial Heat: Measuring Economic Potential and Policy Mechanisms*, https://static1.squarespace.com/static/5a1aca61ccc5c5ef7b931da7/t/67212e1d2feca83d67300002/1730227748077/CAELP+Industrial+Electrification+Report+FINAL.pdf, at 40.

[85] *See* Environmental Integrity Project, *Pollution from Outdated Industrial Boilers and Heaters in Illinois* (Mar. 24, 2025), https://environmentalintegrity.org/wp-content/uploads/2025/04/UTF-82025.03.25-IL-Heaters-Boilers-EIP.pdf (discussing opportunities for such electrification in Illinois).

huge opportunity for reductions of ozone precursors, including the NOx emissions targeted in the proposed rules, and must be considered in IDEM's NOx RACT analysis.[86]

III. Conclusion

As discussed above, the NOx RACT rules currently proposed by IDEM fail to satisfy the procedural and technical requirements of the Clean Air Act to address the moderate nonattainment SIP requirements for the 2015 ozone NAAQS. To meet those requirements and advance the Chicago, IL-IN-WI nonattainment area towards expeditious attainment of the ozone standards, IDEM must provide the public with the technical basis for its NOx RACT rules and, in so doing, consider less-polluting RACT technologies to lower NOx emissions sources throughout the Indiana nonattainment areas. IDEM should then re-notice the analysis and resulting rules for public comment.

Please contact us if you should have any questions regarding these comments or would like to set up a meeting to discuss them.

Respectfully submitted,

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[86] *See* National Boiler Map (average NOx emissions for all boilers in the nonattainment area multiplied by total number boilers). The industrial boilers in the Indiana ozone nonattainment areas emit more than 3000 tpy of NOx and likely significantly more as this figure is based only on boilers that appear in the National Emissions Inventory.

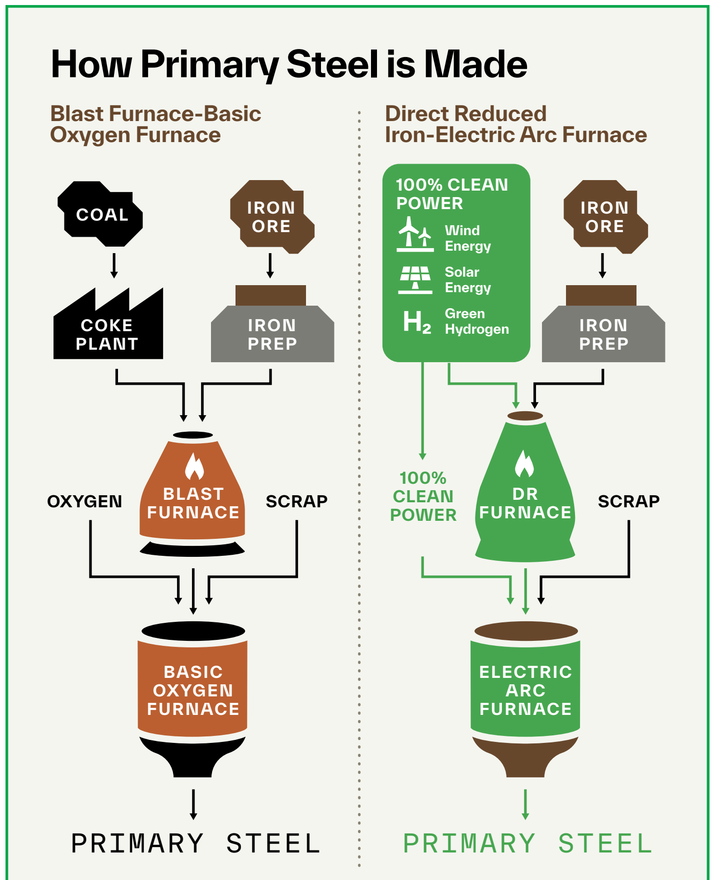
Attachment A

Steel is a foundational material of modern life. From wind turbines to electric vehicles and heat pumps, we need steel to build a clean economy. However, most steel manufacturing relies on coal, producing dangerous pollution.

The emissions impact is significant: iron and steelmaking account for 11% of anthropogenic greenhouse gas pollution and is a major source of other health-harming pollution, from soot and smog to lead pollution and more. Action now by governments, large buyers, and the steel industry itself can put it on a path to a fossil-free future over the next two decades. This primer provides an overview of today's steel industry, the drivers that can unlock steel modernization, and the opportunity green steel presents for our climate, health, and economy.

INDUSTRY BASICS

Steel production relies on coal-burning blast furnaces, a technology that has existed for centuries. Blast furnaces (BF) produce 90% of the world's iron, which basic oxygen furnaces (BOF) transform into steel.[1] These steel mills are often referred to as integrated mills as they purify iron and transform it into steel at the same site. Steel made directly with pure iron is often referred to as primary steel. Primary steel is of higher quality than recycled steel produced in secondary mills (electric arc furnaces, or EAFs) that use scrap. In 2023, the world produced 1,900 million metric tons of steel. China's production (and domestic demand) has risen significantly in recent decades. Today, China produces 68% of the world's primary



How to Make Steel: There are two main pathways to making primary steel today. The BF-BOF pathway relies on massive quantities of coal to fuel blast furnaces. Historically, the DRI-EAF pathway relied on fossil gas. But, equipping shaft furnaces to run on green hydrogen is possible and eliminates nearly all the greenhouse gas emissions associated with steelmaking.

How Steel is Used: Steel has a diverse array of applications. The automotive sector is a particularly important consumer: automotive manufacturing represents 10-13% of global steel demand.

steel, while Japan, India, Russia, and South Korea round out the top five largest national producers.[2] To meet domestic demand, the U.S. imports more than 20 million metric tons (net); Canada, Mexico, Brazil, and South Korea are the largest sources of imports.[3]

Across these steelmaking pathways, BF-BOFs produce both the majority of global steel (71% and a disproportionate share of greenhouse gases and other pollutants due to their reliance on coal. In the U.S., for example, BF-BOFs make 30% of the country's steel but produce nearly 70% of the sector's emissions.[4]

While steel is used in everything from buildings to wind turbines, cars, and appliances, specific industries like auto manufacturing require higher quality steel produced in integrated mills. Secondary or recycled steel must play a critical role in decarbonizing steel globally, but the world will still rely on primary production to meet 60% of global demand in 2050.[5] Thus, cleaning up ironmaking is essential to decarbonizing the steel industry.

An average BF-BOF emits roughly as much CO_2e as a coal-fired power plant. Taken together, the world's 397 coal-based integrated mills are responsible for 4.2 gigatonnes of CO_2e annually, approximately 11% of anthropogenic global climate pollution, making the steel industry one of the most significant contributors to climate change.[6]

In addition to greenhouse gasses, coal-based steel production releases health-harming pollution, including heavy metals and particulate matter. Peer-reviewed studies have linked integrated steel mills, including coke making, to health problems, including COPD, asthma, cardiac disease, increased levels of cancer, and premature death. In the United States, this pollution disproportionately harms low-income communities and communities of color in the Midwest.

Coke Facility Closure Yields Immediate Public Health Benefits

Integrated steel mills like Burns Harbor or Dearborn Works rely on coke—a coal-based fuel—as a heat source and reducing agent during the iron-making phase. Coke production produces more than 40 different toxins like arsenic and benzene, as well as criteria pollutants like sulfur dioxide.

A 2023 paper from researchers at NYU foundation that the closure of one coke-making facility in Pennsylvania led to an immediate 90% drop in SO_2 emissions and a 42% drop in cardiovascular disease driven emergency room visits. Four years after the closure, ER visits for cardiovascular disease had fallen 61%.

"(It's) sort of similar to when somebody quits smoking," noted co-author George Thurston.[7]

THE OPPORTUNITY

Long a source of industrial pollution, the steel industry can now modernize and transition away from fossil fuels. A well-planned transition to cleaner, modern steelmaking technology has many benefits. Moving away from fossil fuels will rapidly reduce the emissions heating the planet and harming the health of nearby communities. Investments in new and retrofitted facilities can spur new jobs and local investment. Private and government investments to modernize facilities can strengthen the existing steel industry and position the U.S. as a global leader in the production of green steel.

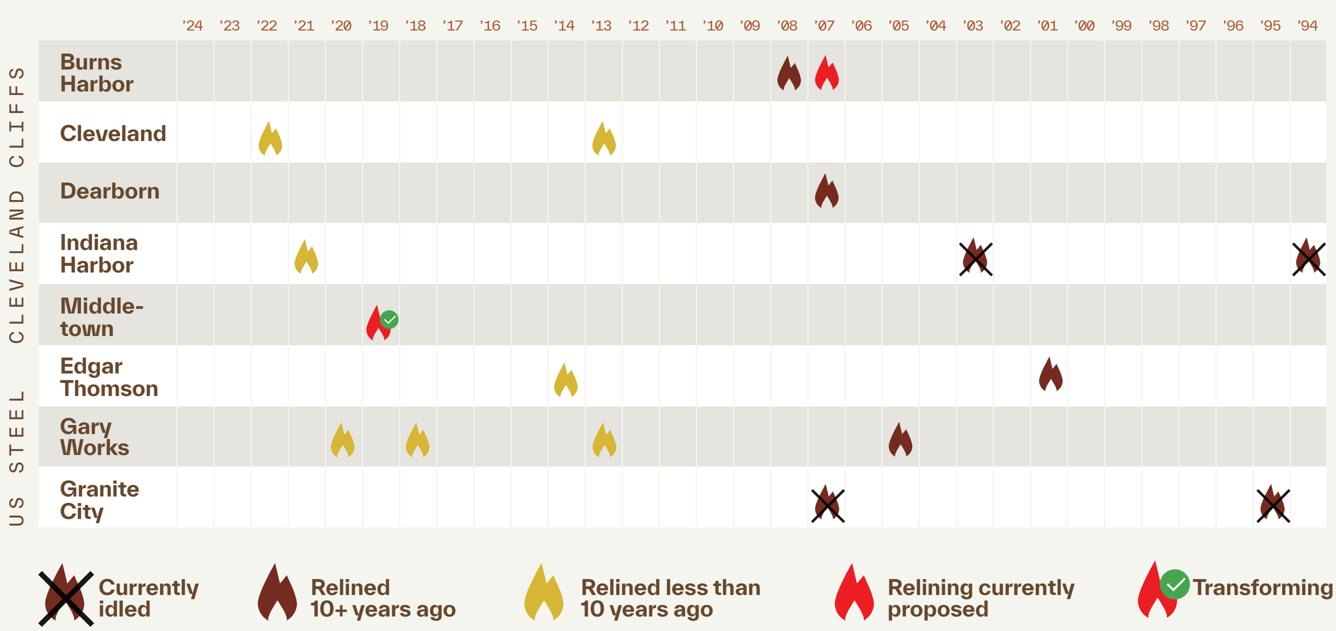
Proven alternatives to coal-based iron and steelmaking exist today. Direct reduced iron (DRI), made in a shaft furnace, eliminates coal and already accounts for 10% of global iron production. While existing industrial-scale DRI facilities use fossil gas, green hydrogen-powered DRI projects have secured funding in Sweden and Germany. Emerging technologies that rely on electrification are also nearing commercial viability.

Ohio River Valley Case Study

A recent study by the Ohio River Valley Institute in Pennsylvania found that a transition to fossil fuel-free steelmaking could grow total jobs supported by steelmaking in the region by 27% to 43% by 2031, forestalling a projected 30% drop in the same period without action. Transitioning to fossil fuel-free steelmaking will also cut Pennsylvania's industrial sector emissions by 4 million metric tons of CO_2e/year, improving quality of life and saving the state $380 million in health, community, and environmental costs.[8]

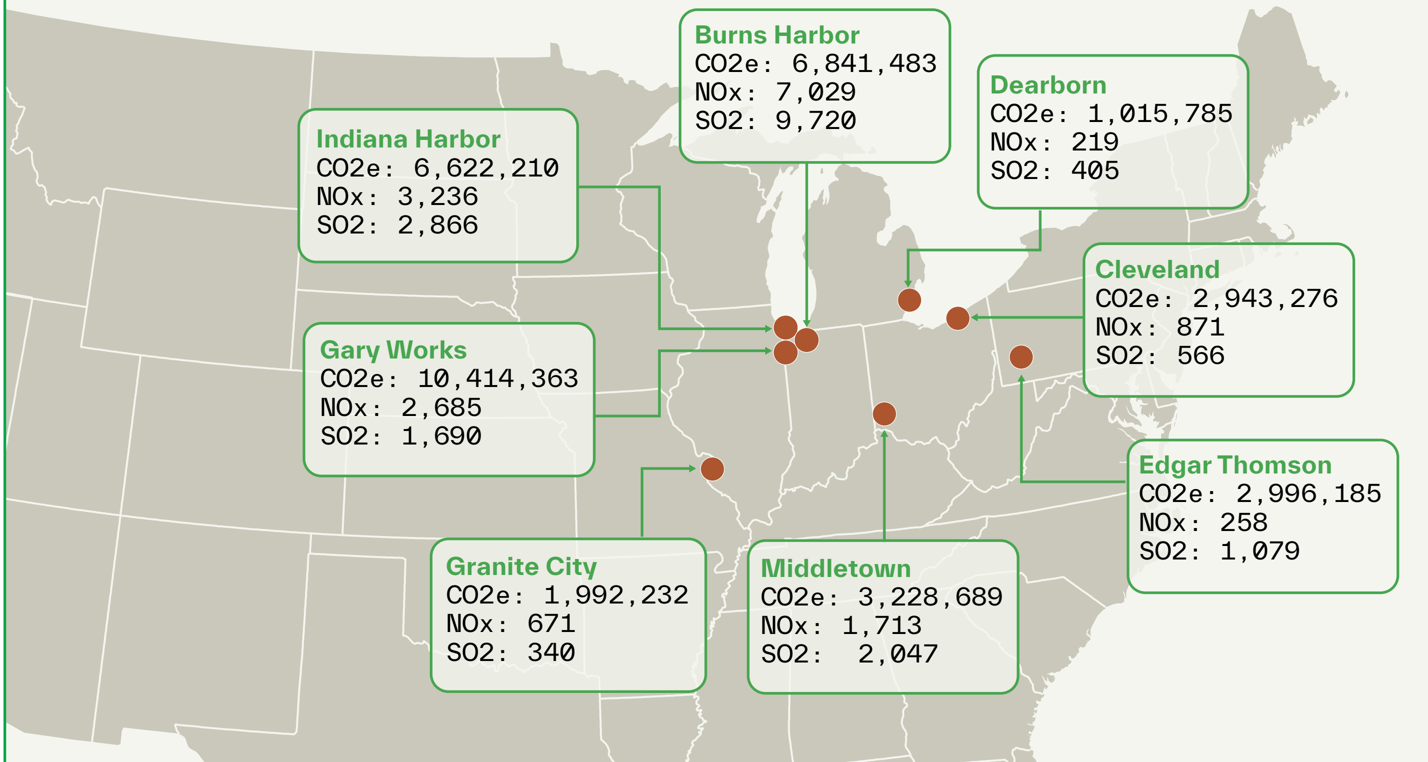
In the next two decades, every blast furnace will face a reinvestment decision that creates a moment to break from the coal-based past and pivot to the clean energy future. On a 15-to-20-

U.S. Blast Furnace Relining



A Decision Point for the Steel Industry as Relining Approaches: The "relining" decision presents a critical opportunity to remake the steel industry and break with dirty coal. Older furnaces on the right of the chart present a more imminent opportunity as they near the end of their current serviceable life cycle. By investing in clean energy-powered alternatives, the steel industry can modernize and break from coal.

Map of U.S. Primary Steel Mills



There are seven remaining primary steel mills in the U.S., clustered in the Midwest. The eighth, Granite City, was idled in 2023 and, as of publication, remains idled. CO_2e numbers are 2022 Scope 1 emissions and are from EPA GHGRP. NOx and SO_2 values are from 2020 EPA NEI data.[17]

year schedule, blast furnaces require relining, a process that replaces the refractory materials that line the insides of the high-temperature furnaces. Fully relining a blast furnace typically costs $100-$150 million per million metric tons of blast furnace capacity; for the blast furnace currently announced for relining, that's approximately $300 million and will lock in dependence on coal for 20 more years.[9] These events provide a decision point for the companies and policymakers: should a steel company invest hundreds of millions of dollars to retrofit and extend the life of a coal-burning blast furnace, or should the company pivot to fossil-free production methods?

With clean alternatives available now, the relining decision point presents an unmissable intervention opportunity to ensure a swift, managed transition away from coal-based steel production to more modern, clean energy-based solutions.

U.S. LANDSCAPE

There are just seven operating U.S. integrated steel mills producing 25 million metric tons of steel yearly, enough to build 28 million cars.[10] Together, they directly employ 18,000 people, including 14,500 union workers, in four states: Indiana, Michigan, Ohio, and Pennsylvania.[11] Upgrading these facilities with clean, modern technology will eliminate the need for 11 million metric tons of coal,[12] reduce local health-harming air pollution, future-proof family-sustaining jobs, and bring a climate-friendly solution to market for global adoption.

There are currently only two blast furnace operators in the United States, Cleveland-Cliffs and U.S. Steel.[13] However, companies including Nucor and ArcelorMittal compete for their steel customers via their DRI facilities in Louisiana and Texas. New entrants like H2 Green Steel and Boston Metal have also recently announced their intentions to pursue

Photo Credit: Matthew Kaplan Photography

green steel opportunities in North America. The steel industry is at the cusp of the most significant technology transition in decades, with major implications for our climate, public health, and future jobs.

PROGRESS

In March of 2024, the U.S. Department of Energy announced award negotiations for two major new steel projects that can catapult the U.S. into a leadership position in the race to green steel. SSAB, a Swedish steelmaker, is proposing to build North America's first fossil-free iron facility in Mississippi. The company has a letter of intent with the regional hydrogen hub Hy Stor to provide green hydrogen to make the iron. In Ohio, Cleveland Cliffs will retire its blast furnace at Middletown Works and replace it with a hydrogen-ready DRI furnace. The blast furnace was previously planned for a relining in the latter half of this decade. By retiring the blast furnace, Cleveland Cliffs avoids a $300 million expenditure to extend the use of coal at the site, and it retains the high-quality union jobs. While major questions remain about the timeline and source of hydrogen, the potential trajectory—retiring coal, replacing it with green hydrogen, retaining good jobs, and lowering air pollution—can be a model for other facilities.

Collectively, these two projects represent a turning point for steelmaking in the U.S. SSAB's proposed project can demonstrate fossil-free technology, establishing a new bar for steelmaking. And if Cleveland Cliffs is able to secure green hydrogen, it can create a model for transforming integrated steel mills for other facilities to follow.

DRIVERS

How do we unlock the steel industry's industrial transformation in the United States? Four drivers can help: market demand, government support, favorable trade policy, and environmental regulation.

Demand

Steel producers must be confident that the market is willing to pay for their products, and green steel may initially reward steelmakers with a 10-30% price premium.[14] Primary steel producers' biggest end-market, automakers, have already indicated their willingness to pay. In 2022, Ford and GM joined the First Movers Coalition, a commitment to buy 10% "near-zero emissions steel" by 2030.[15] While pledges are helpful, more formal advanced market commitments from large buyers like the auto industry or the federal government are critical to derisking green steel investments.

Funding

The transition to green steel requires significant investment. A new DRI-EAF facility can cost approximately $2 billion, though the cost varies based on the size of the plant and other factors.[16] While the steel industry must strategically invest its resources to pivot from coal to green steel, governments play a critical role. The Inflation Reduction Act and Bipartisan Infrastructure Law set aside more than $6 billion for industrial demonstration projects, including steel. Additional government incentives, such as hydrogen and renewable energy tax credits, can further reduce costs. However, analysis from Industrious Labs and Public Citizen found that European capital expenditure subsidies lead those available in the U.S. by 35%, demonstrating the opportunity for further investment through new legislation.

Trade

Being an early investor in green steel is a financial risk. To protect American investments, producers need favorable trade policies that will protect against foreign dumping and dirty imports, which not only drive climate change but threaten union jobs. Trade policies like the Global Arrangement on Sustainable Steel and Aluminum, or tariffs on the carbon intensity of imported materials and products, are needed to reduce emissions.

Environmental Regulation

While the first three drivers are all necessary to ease the transition, direct regulation of the industry's coal-based pollution is equally essential to drive change. The steel industry's dependence on coal makes it a significant source of air pollution that sickens nearby communities, yet the sector benefits from lax standards that enable high pollution levels. Too often, significant toxic releases and persistent hazardous air pollution emissions result in small fines that are insufficient to change behavior or operations in ways that would lead to tighter health protections for local communities. Stricter standards and new pollution controls for climate and traditional air pollutants are essential to forcing change within an industry slow to embrace its future.

WHY NOW

American steel manufacturing and the jobs that come with it have sharply declined for decades. Finally, the technology to bring steelmaking into the 21st century is here. It will reduce health and climate-harming pollution, require more skilled workers, and modernize an industry critical to the clean energy economy. With government support and critical buyers accountable to their net-zero timelines, leading steel companies have a generational opportunity to invest in green steel and ditch fossil fuels for good.

1. World Steel Association (2023). **World Steel in Figures 2023**.
2. World Steel Association (2023). **World Steel in Figures 2023**.
3. USGS (2024). **Iron and Steel Mineral Commodity Summary**.
4. RMI (2023). **Forging a Clean Steel Economy in the United States**.
5. World Economic Forum (2022). **Net-Zero Industry Tracker 2022 Edition**.
6. SteelWatch (2023). **Sunsetting Coal in Steel Production**. Calculations include upstream coal mine methane emissions.
7. Wuyue Yu and George D Thurston (2023). **An interrupted time series analysis of the cardiovascular health benefits of a coal coking operation closure**.
8. Ohio River Valley Institute (2023). **Green Steel in the Ohio River Valley: The Timing is Right for the Rebirth of a Clean, Green Steel Industry**.
9. International Energy Agency (2020). **Iron and Steel Technology Roadmap**.
10. US Steel's Granite City Works was recently idled.
11. Prior to the idling of Granite City Works, these figures totaled 20,000 people, including 16,000 union workers
12. U.S. Energy Information Administration (2023). **Coal and coke**.
13. At the time of publication, US Steel was under a pending sale to Nippon Steel at the time of publication. Nippon has stated that it intend to continue operating the US Steel facilities.
14. Reuters (2023). **ArcelorMittal CEO says decarbonisation would drive steel prices up 10%-20%**.
15. First Movers Coalition (2024). **Steel Commitment**.
16. RMI (2024). **Transforming the US Steel Industry: A Great Lakes Memo Series**.
17. Sources: Environmental Protection Agency (2023a). Greenhouse Gas Reporting Program: 2022 Dataset; Environmental Protection Agency (2023b) National Emissions Inventory: 2020 Dataset.

For more information, contact Hilary Lewis, Steel Director: **hilary@industriouslabs.org**

Exhibit 2

PROPOSED RULE

SECTION 1. 326 IAC 10-7 IS ADDED TO READ AS FOLLOWS:

Rule 7. Nitrogen Oxides Reasonable Available Control Technologies

326 IAC 10-7-1 Applicability

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

Affected: IC 13-17-3-4

Sec. 1. (a) Unless exempted under section 7 of this rule, the requirements of this rule apply to any facility that emits NOx in Calumet, Hobart, North, Ross, or St. John ~~Townships~~townships in Lake County, or Center, Jackson, Liberty, Pine, Portage, Union, Washington, or Westchester ~~Townships~~townships in Porter County that meets the following conditions:

(1) Is an existing, new, or modified:

(A) very large, large, mid-size, or small boiler;

(B) stationary combustion turbine;

(C) stationary internal combustion engine;

(D) reheat, annealing, or galvanizing furnace; or

(E) unit with specific requirements in section 8 of this rule.

(2) Is located at a stationary source that emits or has the potential to emit a total of more than one hundred (100) tons per year of NOx emissions from all emissions units at that source as of the effective date of this rule or the date of the initial startup, whichever is later.

(b) Any new or modified emission unit in Calumet, Hobart, North, Ross, or St. John ~~Townships~~townships in Lake County, or Center, Jackson, Liberty, Pine, Portage, Union, Washington, and Westchester ~~Townships~~townships in Porter County is subject to the requirements of this rule unless the emissions limitations and requirements of an applicable new source performance standard under 40 CFR Part 60* is more stringent than the emissions limitations and requirements of this rule.

(c) Any existing emission unit in Calumet, Hobart, North, Ross, or St. John ~~Townships~~townships in Lake County, or Center, Jackson, Liberty, Pine, Portage, Union, Washington, and Westchester ~~Townships~~townships in Porter County that no longer meets an applicable exemption under section 7 of this rule immediately becomes subject to the requirements of this rule.

***These documents are incorporated by reference. Copies may be obtained from the Government Publishing Office, ~~www.gpo.gov,~~ www.gpo.gov, or are available for review at the Indiana Department of Environmental Management, Office of Legal Counsel, Indiana Government Center North, 100 North Senate Avenue, Thirteenth Floor, Indianapolis, IN 46204.**

(Air Pollution Control Division; 326 IAC 10-7-1)

326 IAC 10-7-2 Definitions

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

Affected: IC 13-11-2; IC 13-17-3-4

Sec. 2. The following definitions, and the definitions found in IC 13-11-2 and 326 IAC 1-2, apply to this rule:

(1) "Affected source" means any stationary source that meets the applicability requirements as specified in 326 IAC 10-7-1.

(2) "Affected facility" means any emission unit that meets the applicability requirements as specified in section 1 of this rule and is not exempt under section 7 of this rule.

(3) "Auxiliary boiler" means either a boiler that produces steam and operates at a capacity factor of less than ten per cent (10%) or a boiler at a nuclear electrical generating facility that produces steam for the facility during either emergency periods or atypical extended periods of nuclear plant outage.

(4) "British thermal unit" or "Btu" means the amount of heat needed to raise one (1) pound of water one degree Fahrenheit.

(5) "Capacity factor" means either the ratio of gross actual output to the gross rated output or the ratio of actual heat input to potential heat input for the calendar year, expressed as a percentage.

(6) "Cell burner" means burner cells that consist of two or three circular burners combined into a vertically oriented assembly that creates a compact, intense flame.

(7) "Diesel fuel" means a low sulfur fuel oil of grades 1-D or 2-D, as defined by ASTM D975, "Standard Specification for Diesel Fuel Oils~~."*~~"*.

(8) "Distillate oil" means fuel oil that complies with the specifications for fuel oil number one or two, as defined by ASTM D396, "Standard Specification for Fuel Oils~~."*~~"*.

(9) "Engine testing operation" means the activities, or the apparatus used in conducting testing of an internal combustion engine for the purpose of quality assurance or quality control in the manufacturing process of the engine, or for evaluating the pollutant emissions emitted by the engine.

(10) "Gaseous fuels" means natural gas, blast furnace gas, coke oven gas or refinery fuel gas.

(11) "g per kW-hr" or "g/kW-hour" means grams per kilowatt-hour.

(12) "g per hp-hr" or "g/hp-hour" means grams per horsepower-hour.

(13) "Hp" means horsepower.

(14) "Industrial boiler" means a steam generating unit that generates steam to supply power or heat to an industrial, institutional, or commercial operation. This term does not include boilers that serve electrical generating units and cogeneration facilities.

(15) "Internal combustion engine" means any engine in which power, produced by heat or pressure developed in the engine cylinder by burning a mixture of air and fuel, including diesel fuel, is subsequently converted to mechanical work by means of one (1) or more pistons.

(16) "kW" means kilowatt.

(17) "Lb per mmBtu" or "lb/mmBtu" means pound per million British thermal units.

(18) "Lb per MW-hr" or "lb/MW-hour" means pound per megawatt-hour.

(19) "Large boiler" means an industrial boiler with a maximum heat input capacity greater than one hundred (100) mmBtu/hr and equal to or less than two hundred fifty (250) mmBtu/hr.

(20) "Low-NOx burner" means a burner designed to reduce flame turbulence by the mixing of fuel and air and by establishing fuel-rich zones for initial combustion, thereby reducing the formation of NOx.

(21) "Mid-size boiler" means an industrial boiler with a maximum heat input capacity greater than fifty (50) mmBtu/hr and equal to or less than one hundred (100) mmBtu/hr.

(22) "MmBtu/hr" means million British thermal units per hour.

(23) "Municipal waste combustor" means any device that combusts any solid, liquid, or gasified municipal waste.

(24) "Natural gas" means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane.

(25) "ng/J" means nanogram per joule.

(26) "Nitrogen oxides" or "NOx" means all nitrogen oxides which are determined to be ozone precursors, including, but not limited to, nitrogen oxide and nitrogen dioxide, but excluding nitrous oxide, collectively expressed as nitrogen dioxide.

(27) "O_2" means Oxygen.

(28) "Oil" means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

(29) "Operating day" is defined as any calendar day with twelve (12) or more hours during which wind is being added to a furnace and the top pressure of the furnace is greater than five (5) pounds per square inch gauge.

(30) "Potential to emit" means the maximum capacity of a facility or stationary source to emit NOx under its physical and operational design. Any physical or operational limitation on the

capacity of the facility to emit NOx, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, is treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

(31) "Ppm" means parts per million.

(32) "RACT" or "reasonably available control technology" means the lowest emissions limitation that a particular facility is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

(33) "Reheat furnace" means a furnace in which metal ingots, billets, slabs, beams, blooms and other similar products are heated to the temperature needed for hot-working.

(34) "Research and development facility" means a research or laboratory facility the primary purpose of which is to conduct research and development into new processes and products, that is operated under the close supervision of technically trained personnel, and that is not engaged in the manufacture of products for sale or exchange for commercial profit, except in a de-minimis manner.

(35) "Residual oil" means crude oil, fuel oil that does not comply with the specifications under the definition of "distillate oil," and all fuel oil numbers four, five, or six, as defined by ASTM D396, "Standard Specification for Fuel Oils~~."*~~"*.

(36) "Small boiler" means an industrial boiler with a maximum heat input capacity greater than twenty (20) mmBtu/hr and equal to or less than fifty (50) mmBtu/hr.

(37) "Space heating unit" means any fuel burning equipment that is used only for space heating purposes during the period from November first through March thirty-first or during other periods of cold weather conditions.

(38) "Stand-by fuel burning equipment" means any fuel burning equipment which is used only as a direct substitution for other fuel burning equipment for a limited period due to unpredictable breakdown or failure, or routine scheduled maintenance of such other fuel burning equipment or its associated air pollution control system. Stand-by fuel burning equipment includes engines that meet the definition of:

(A) emergency stationary reciprocating internal combustion engine (RICE) under 40 CFR Part 63, Subpart ZZZZ*; or

(B) emergency stationary internal combustion engine under:

(i) 40 CFR Part 60, Subpart IIII*; and

(ii) 40 CFR Part 60, Subpart JJJJ~~.*~~*.

(39) "Stationary combustion turbine" means any:

(A) simple cycle combustion turbine;

(B) regenerative cycle combustion turbine;

(C) combustion turbine portion of a combined cycle steam or electric generating system;

that is not self-propelled, but which may be mounted on a vehicle for portability.

(40) ~~'Stationary~~"Stationary internal combustion engine" means any reciprocating internal combustion engine that is not self-propelled, but which may be mounted on a vehicle for portability.

(41) "Tune-up" means adjustments made to a burner or boiler in accordance with procedures supplied by the manufacturer (or approved specialist) to optimize the combustion efficiency.

(42) "Very large boiler" means an industrial boiler with a maximum heat input capacity greater than two hundred fifty (250) mmBtu/hr.

***These documents are incorporated by reference. Copies may be obtained from the Government Publishing Office, ~~www.gpo.gov,~~ www.gpo.gov, or are available for review at the Indiana Department of Environmental Management, Office of Legal Counsel, Indiana Government Center North, 100 North Senate Avenue, Thirteenth Floor, Indianapolis, IN 46204.**

(Air Pollution Control Division; 326 IAC 10-7-2)

326 IAC 10-7-3 General provisions

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

Affected: IC 13-17-3-4

Sec. 3. (a) Compliance with the emissions limitations specified in this rule shall be based on one or more of the following:

(1) For stack testing, the average of three (3) one-hour stack test runs.

(2) For permanent continuous emissions monitors, a twenty-four (24) hour daily heat input-weighted average.

(A) The twenty-four (24) hour daily heat input-weighted average NOx emission rate shall be determined based on the heat input-weighted average of the block hourly arithmetic average emission rates during each twenty-four (24) hour daily period from ~~midnight~~12:00 a.m. to ~~midnight~~12:00 a.m. the following day using continuous emissions monitor data. The block hourly heat input-weighted average emission rate shall be calculated for each one (1) hour period:

(i) starting with the period ~~midnight~~12:00 a.m. to 1:00 a.m. and continuing through until the last period 11:00 p.m. to ~~midnight;~~12:00 a.m.; or~~,~~

(ii) starting with the period 12:00 p.m. to 1:00 p.m. and continuing through the last period 11:00 a.m. to 12:00 p.m.

(B) The thirty (30) day rolling heat input-weighted average shall be the average of the twenty-four (24) hour daily heat input-weighted NOx emission rate.

(3) For temporary continuous emissions monitors, a thirty (30) day heat input-weighted average emission rate based on the twenty-four (24) hour daily heat input-weighted averages.

(A) The twenty-four (24) hour daily heat input-weighted average NOx emission rate shall be based on the heat input-weighted average of the block hourly arithmetic average emission rates during each twenty-four (24) hour daily period from ~~midnight~~12:00 a.m. to ~~midnight~~12:00 a.m. the following day using continuous emissions monitor data. The block hourly heat input-weighted average emission rate shall be calculated for each one (1) hour period:

(i) starting with the period ~~midnight~~12:00 a.m. to 1:00 a.m. and continuing through until the last period 11:00 p.m. to ~~midnight;~~12:00 a.m.; or

(ii) starting with the period ~~twelve~~12:00 p.m. to ~~one~~1:00 p.m. and continuing through the last period 11:00 a.m. to ~~noon~~12:00 p.m.

(4) For permanent continuous emissions monitors, a daily, twenty-four (24) hour arithmetic average of all the block hourly mass emission rates, in pounds per hour, or concentrations, in parts per million by volume, during each calendar day.

(A) The block hourly mass emission rate or concentration shall be calculated for each one-hour period starting with:

(i) period ~~twelve~~12:00 a.m. to ~~one~~1:00 a.m. and continuing through until the last period ~~eleven~~11:00 p.m. to ~~twelve~~12:00 a.m.; or

(ii) starting with the period ~~noon~~12:00 p.m. to 1:00 p.m. and continuing through the last period 11:00 a.m. to ~~noon~~12:00 p.m.

(b) ~~The~~Compliance with a twelve (12) consecutive month ~~period is~~limitation shall be determined at the end of each month.

(c) The owner or operator of a blast furnace gas boiler subject to tune-up requirements specified in this rule shall perform a tune-up of any unit no later than thirty (30) days after determining that the unit burned less than ninety percent (90%) blast furnace gas in a twelve (12) consecutive month period. If a unit has a continuous oxygen trim system and had a tune-up within three (3) years before a twelve (12) consecutive month period during which the unit burned ninety percent (90%) or more blast furnace gas by volume, the owner or operator must perform a subsequent tune-up no later than:

(1) thirty (30) days after determining that the unit burned less than ninety percent (90%) blast furnace gas by volume in a twelve (12) consecutive month period; or

(2) five (5) years after the previous tune-up.

(Air Pollution Control Division; 326 IAC 10-7-3)

326 IAC 10-7-4 RACT requirements and limitations for emissions of NOx from affected sources in Lake County and Porter County

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

Affected: IC 13-17-3-4

Sec. 4. (a) Owners or operators of small boilers shall:

(1) annually perform a tune-up; and

(2) maintain a logbook in a format approved by the department that includes the following information:

(A) The date of the last tune-up.

(B) The name, title, and affiliation of the person who performed the tune-up and made any adjustments.

(C) Any other information which the department may require as a condition of approval of any permit for the boiler.

(b) Owners or operators of mid-size, large, and very large boilers shall not emit NOx in excess of the following:

(1) 0.08 lb/mmBtu for gas-only fueled boilers.

(2) 0.10 lb/mmBtu for distillate oil fueled boilers.

(3) 0.20 lb/mmBtu for residual oil fueled boilers.

(c) Unless a more stringent limit is included in a permit, owners or operators of stationary combustion turbines for mechanical drive and electrical generation shall not emit NOx in excess of the following:

Table 1 – NOx Emissions Limitations for Stationary Combustion Turbines

Combustion turbine type	Combustion turbine heat input at peak load(HHV)	NO_x emission standard
Turbine firing natural gas	> 50 and ≤ 850 mmBtu/hr	25.0 ppm at 15 percent O_2 or 150 ng/J of useful output (1.2 lb/MW-hr)
	> 850 mmBtu/hr	25.0 ppm at 15 percent O_2 or 54 ng/J of useful output (0.43 lb/MW-hr)

(d) Unless a more stringent limit is included in a permit, owners or operators of stationary internal combustion engines shall not emit NOx in excess of the following:

Table 2 – NOx Emissions Limitations for Stationary RICE

Ignition System	Maximum Engine Power(kW [hp])	NOx(g/kW-hr [g/hp-hr])
Compression Ignition	373 < kW ≤ 560 [500 < hp ≤ 751]	0.40 [0.30]
	kW > 560 [hp > 751] generator sets	0.67 [0.50]
	kW > 560 [hp > 751] All except generator sets	3.5 [2.61]
Spark Ignition	373 < kW [500 < hp]	2.7 [2.0]

(e) Unless a more stringent limit is included in a permit, owners or operators of reheat, annealing, and galvanizing furnaces with a maximum heat input capacity of equal or greater than seventy-five (75) mmBtu/hr shall not emit NOx in excess of 0.09 lb/mmBtu.

(Air Pollution Control Division; 326 IAC 10-7-4)

326 IAC 10-7-5 Emissions averaging programs

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

Affected: IC 13-17-3-4

Sec. 5. (a) The owner or operator of an affected source may propose an emission averaging program in lieu of the applicable emissions limitations. Both affected facilities and non-affected facilities may be utilized in the averaging program.

(b) Any proposed emission averaging program shall comply with the following requirements:

(1) The owner or operator shall specify:

(A) the RACT emissions limitation for each affected facility involved in the emission averaging program; and

(B) a clearly enforceable proposed emissions limitation for each facility or group of facilities involved in the emission averaging program.

(2) The proposed emission averaging program must result in NOx emissions reductions that are equal to or greater than the emission reductions required by this rule if an emission averaging program were not employed.

(3) Reductions under the emission averaging program must be:

(A) real;

(B) quantifiable;

(C) enforceable; and

(D) in excess of any state or federal requirements.

(4) For purposes of determining the reductions, the actual emissions in tons per year, from all facilities included in the averaging program, are subtracted from the lesser of either the actual annual average emissions prior to when the actual reduction occurs or the allowable emissions.

(5) A shutdown is creditable only to the extent that the owner or operator can demonstrate to the satisfaction of the department that the shutdown does not correspond to load-shifting or other activity which results in or could result in an equivalent or greater emission increase and that the reduction accounts for any increase in NOx emissions from other facilities as a result of the shutdown.

(6) The affected facility must achieve compliance with the proposed emissions limitation in accordance with the compliance deadlines in section 9 of this rule.

(7) Owners or operators must submit a report to the department by March 31 of each year demonstrating that the equivalent reduction requirements established under the facility's emission averaging program in accordance with section 5 of this rule have been achieved for the previous calendar year.

(c) Any emission averaging program approved by the department shall be submitted to and approved by U.S. EPA as a revision of the Indiana state implementation plan. An emission averaging program shall not be federally enforceable until U.S. EPA approves the program as part of the Indiana state implementation plan.

(Air Pollution Control Division; 326 IAC 10-7-5)

326 IAC 10-7-6 RACT studies for major stationary sources

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

Affected: IC 13-17-3-4

Sec. 6. (a) Any affected facility that is:

(1) not subject to the emissions limitations specified in section 4 paragraphs (b) through (e) of this rule and is not exempt under section 7 of this rule; or

(2) subject to the emissions limitations specified in section 4 paragraphs (b) through (e), but for which the owner or operator claims achievement of an applicable emissions limitation is technically infeasible or economically unreasonable;

shall conduct an engineering study.

(b) The study required by subsection (a) shall determine the economic and technical feasibility of reducing NOx emissions and define RACT for the facility. The engineering study shall be conducted by an engineering consulting firm or other person or persons experienced in the field of air pollution control, and provide the following information:

(1) The complete affected source name, source identification number, and address.

(2) The name, title, address, and telephone number of the owner's or operator's representative within the company who is the contact person for this source regarding the engineering study and affected facilities.

(3) The name, title, address, and telephone number of the official who is responsible for approval of the engineering study.

(4) The standard industrial classification code and source classification code numbers applicable to the source's operation.

(5) The following general information for each affected facility:

(A) IDEM Permit application number.

(B) Company identification and facility identification number.

(C) Emission unit description.

(D) Month and year installed.

(E) Normal operating schedule, including:

(i) hours per day;

(ii) days per week; and

(iii) weeks per year.

(F) Annual production rates for each of the three full calendar years preceding the effective date of this rule.

(G) Average and maximum daily production rates for each of the three full calendar years preceding the effective date of this rule.

(H) The type of control equipment employed and the date installed.

(6) A plot plan which shows the general layout of the source and the affected facility.

(7) The following emissions data for each affected facility:

(A) Average pounds per day of operation NOx emissions based upon the highest average daily production rate for each of the three (3) full calendar years preceding the effective date of this rule or any other year that may be representative of the highest average daily emissions.

(B) Maximum pounds per day of operation NOx emissions based upon the highest maximum daily production rate for each of the three (3) full calendar years preceding the effective date of this rule or any year that may be more representative of the highest maximum daily emissions.

(C) Annual tons of NOx emissions based upon the highest annual production rate for each of the three (3) full calendar years preceding the effective date of this rule or any year period that may be more representative of the annual production rate.

(D) Documentation of:

(i) the efficiency of the existing control equipment; and

(ii) any emissions testing which has been performed.

(E) A detailed discussion of the technical feasibility of employing each of the following types of control measures for each affected facility, or combination of facilities, unless the control measures are not applicable to a particular facility:

(i) Low-NOx burners.

(ii) Close coupled or separated over-fire ports.

(iii) Flue gas recirculation.

(iv) Low-NOx burners with external flue gas recirculation.

(v) Burners out of service.

(vi) Steam or water injection.

(vii) Dry low-NOx burners.

(viii) Ignition timing retard.

(ix) Separate circuit after-cooling.

(x) Fuel emulsification.

(xi) Selective noncatalytic reduction.

(xii) Nonselective catalytic reduction.

(xiii) Selective catalytic reduction using urea ammonia and methane as reducing agents.

(xiv) Incineration (for facilities other than boilers).

(xv) Scrubbing (for facilities other than boilers).

(xvi) Process modification.

(xvii) Fuel switching.

(xviii) Adjustment of air fuel ratio (for internal combustion engines).

(xix) Low excess air.

(xx) Mid-kiln firing.

(xxi) Mid-kiln air injection.

(xxii) Gaseous fuels reburn.

(xxiii) Any other such RACT alternatives not listed in this rule that may be applicable to an affected facility, or as are proposed by the owner or operator.

(F) For each type of control measure that is determined to be technically feasible, an estimate of the:

(i) control efficiency that can be achieved;

(ii) capital cost;

(iii) annualized cost, including capital and operating costs; and

(iv) the cost-effectiveness as measured by the annual dollars per ton of NOx removed annually.

(G) A comparison and discussion of the advantages and disadvantages of the control options that are determined to be technically feasible.

(H) A recommended definition of RACT for the facility, including one or more of the following:

(i) Enforceable production limitations.

(ii) Emissions limitations.

(iii) Control efficiencies.

(iv) Operating requirements.

(v) An expeditious schedule for implementing the recommended definition of RACT, including milestones for awarding contracts, initiating construction, completing construction, and performing emissions testing, if necessary, to demonstrate compliance with the approved definition of RACT.

(vi) Clean and detailed documentation of all calculations of the NOx emissions, including all assumptions made.

(I) Capital and operating costs and the cost-effectiveness estimates calculated in a manner consistent with the most recent edition of the "U.S. EPA air pollution control cost manual~~."*~~"*.

(c) Any facility that is subject to an emissions limitation contained in section 4 of this rule shall no longer be subject to the emissions limitations if the department approves a definition of RACT and a schedule of compliance for the facility pursuant to this section.

(d) Any facility that is subject to an emissions limitation contained in section 4 of this rule shall remain subject to those limitations and compliance deadlines contained in section 9 if:

(1) the department disapproves a definition of RACT and a schedule of compliance for the facility pursuant to this section;

(2) the RACT study determines the applicable NOx emissions limitations contained in section 4 of this rule are technically feasible and cost-effective to achieve; or

(3) The department disapproves of a variance application pursuant to section 6 of this rule.

(e) If within the five years prior to the effective date of this rule, the owner or operator of an affected facility subject to this rule has employed, or has committed to employ, the best available control technology for NOx emissions, as determined by the department pursuant to [326 IAC 2-2](), the owner or operator may provide the following information to the department in satisfaction of section 5 of this rule:

(1) The complete affected source name, source identification number, and address.

(2) The name, title, address, and telephone number of the owner's or operator's representative within the company who is the contact person for this source regarding the engineering study and affected facilities.

(3) The standard industrial classification code and source classification code numbers which are applicable to the source's operation.

(4) The following general information for each affected facility:

(A) Part 70 operating permit application number.

(B) Company identification and facility identification number.

(C) Emission unit description.

(D) Month and year installed.

(E) Normal operating schedule, including:

(i) hours per day;

(ii) days per week; and

(iii) weeks per year.

(F) Annual production rates for each of the three full calendar years preceding the effective date of this rule.

(G) Average and maximum daily production rates for each of the three full calendar years preceding the effective date of this rule.

(H) The type of control equipment employed and the date installed.

(5) The following emissions data for each affected facility:

(A) Average pounds per day of operation NOx emissions based upon the highest average daily production rate for each of the three (3) full calendar years preceding the effective date of this rule or any other year that may be representative of the highest average daily emissions.

(B) Maximum pounds per day of operation NOx emissions based upon the highest maximum daily production rate for each of the three (3) full calendar years preceding the effective date of this rule or any year that may be more representative of the highest maximum daily emissions.

(C) Annual tons of NOx emissions based upon the highest annual production rate for each of the three (3) full calendar years preceding the effective date of this rule or any year period that may be more representative of the annual production rate.

(D) Documentation of:

(i) the efficiency of the existing control equipment; and

(ii) any emissions testing which has been performed.

(6) Copies of the documents and technical information that support the existing best available technology determination.

(7) The name, title, address and telephone number of the official who is responsible for the information submitted in accordance with section 5 of this rule.

(f) If the department determines that the information provided by an affected facility under subsection (e) of this section does not or may not satisfy the requirements of this rule, the department shall notify the owner or operator. After being notified by the department, the owner or operator must then conduct a full RACT engineering study in accordance with section 6 of this rule.

(g) Any definition of RACT and schedule of compliance for an affected facility that are approved by the department shall be submitted to the U.S. EPA as a revision of the Indiana state implementation plan.

(h) If any unit with a specific emission limit or equipment standards in section 8 of this rule based on actual annual emissions cannot meet that limit, the owner or operator must conduct a new RACT engineering study based on the potential to emit (PTE) and propose revised RACT requirements based on the new study within six (6) months of the determination of noncompliance.

***These documents are incorporated by reference. Copies may be obtained from the Government Publishing Office, ~~www.gpo.gov,~~ www.gpo.gov, or are available for review at the Indiana Department of Environmental Management, Office of Legal Counsel, Indiana Government Center North, 100 North Senate Avenue, Thirteenth Floor, Indianapolis, IN 46204.**

(Air Pollution Control Division; 326 IAC 10-7-6)

326 IAC 10-7-7 Exemptions

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

~~Affected:~~Affected: IC 13-14-8-8; IC 13-17-3-4

Sec. 7. (a) The requirements of this rule shall not apply to the following:

(1) Industrial boilers having a maximum heat input of less than or equal to twenty (20) mmBtu/hr.

(2) Standby boilers, standby stationary combustion turbines, or standby stationary internal combustion engines that operate less than five hundred (500) hours during any consecutive twelve (12) month period.

(A) The owner or operator of standby boilers, standby stationary combustion turbines, or standby stationary internal combustion engines shall maintain records for a period of not less than three (3) years in a format acceptable to the department. These records shall include the dates and number of hours the standby boilers, standby stationary combustion turbines, or standby stationary internal combustion engines operated.

(3) Stationary internal combustion engines having an energy output capacity of less than five hundred (500) horsepower.

(4) Stationary combustion turbines having an energy input capacity of less than twenty (20) mmBtu/hr.

(5) Space heating units.

(6) Auxiliary boilers.

(7) Carbon monoxide boilers.

(8) Research and development facilities.

(9) Jet engine test cells.

(10) Engine testing operations.

(11) Air pollution control devices.

(12) Municipal waste combustors.

(13) Facilities other than a boiler, stationary combustion turbine or stationary internal combustion engine that have the potential to emit less than twenty-five (25) tons per year of NOx.

(14) Affected facilities issued a valid air operating permit by the department in accordance with 326 IAC 2-7 that restricts such affected facility to twenty-five (25) tons per year or less of NOx emissions.

(15) Affected facilities issued a Part 70 operating permit by the department in accordance with 326 IAC 2-7 that is subject to best available control technology or lowest achievable emission rate standards.

(16) Affected facilities whose utilization ~~in~~is less than ten percent (10%) of its capacity factor on an annual average basis over a three (3) year rolling period and less than twenty percent (20%) of its capacity factor in any year of the three (3) year rolling period.

(b) The owner or operator of any affected facility that cannot comply with the applicable requirements set forth in this rule because of extraordinary reasons beyond the affected source's reasonable control may apply in writing to the department to request a variance. The variance application shall be prepared in accordance with the provisions specified in IC 13-14-8-8 and shall only be granted provided the requirements of this rule are met. No variance may be granted by the department that does not provide for eventual compliance with this rule.

(Air Pollution Control Division; 326 IAC 10-7-7)

326 IAC 10-7-8 Source-specific emission limitations

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

Affected: IC 13-17-3-4

Sec. 8. (a) Carmeuse Lime, Inc., whose source identification number (source ID) is 089-00112, in Lake County shall operate and maintain rotary kilns EU-1 through EU-5 in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(b) United States Steel Corporation Gary Works, whose source ID is 089-00121, in Lake County shall comply with the following emissions limits:

(1) No. 3 Recycling plant shall comply with the following:

(A) The units shall operate using only Fives North American Combustion, model HiRAM 4575-14 low-NOx burners, or the equivalent, for reheat of the windbox exhaust.

(B) No. 3 Recycling Plant shall be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(2) Blast Furnaces No. 4, No. 6, No. 8, and No. 14 shall comply with the following:

(A) Each group of blast furnace ~~stove~~stoves shall:

(i) receive ninety percent (90%) or more of its total gas volume from blast furnace gas as fuel on a rolling thirty (30) operating-day basis; and

(ii) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(B) Each casthouse and flare shall operate in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(3) No. 1 Basic Oxygen Process (BOP) Shop, including Vessels M, E, and D, shall operate in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(4) No. 2 Q-BOP Shop, including Vessels W, Y, and T, shall operate in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(5) The reheat furnaces and waste heat boilers shall operate in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(6) No. 4 Boiler House boilers No. 1, No. 2, and No. 3, and Turboblower Boiler House boilers No. 1 through No. 3 and No. 5 shall comply with the following:

(A) For Boiler House No. 4, boilers No. 1 and No. 2, NOx emissions from each boiler shall not exceed 0.08 lbs/MMBtu when firing natural gas or blast furnace gas and 0.10 lb/MMBtu when firing fuel oil with compliance demonstrated on a rolling thirty (30) operating-day basis.

(B) For Boiler House No. 4 boiler No. 3 and the Turboblower Boiler House boilers, NOx emissions shall not exceed 0.17 lbs/MMBtu from each boiler on a rolling thirty (30) operating-day basis.

(C) The Boiler House units shall operate in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(7) Turboblower Boiler House boiler No. 6 shall comply with the following:

(A) NOx emissions shall not exceed 0.20 lbs/MMBtu on a rolling thirty (30) operating-day basis when firing natural gas only.

(B) NOx emissions from combusting blast furnace gas and natural gas shall not exceed 432.21 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) W.R. Grace & Co., whose source ID is 089-00310, in Lake County shall:

(1) install low-NOx burners in sodium silicate furnace EU-01;

(2) not allow NOx emissions to exceed 8 lb/per ton of product following the installation of the low-NOx burners in sodium silicate furnace EU-01; and

(3) following installation of the low-NOx burners, the owner or operator shall conduct a NOx emissions test utilizing methods approved by the Commissioner to confirm compliance with the limit.

(d) Cleveland-Cliffs Burns Harbor, LLC, Gary Plate, whose source ID is 089-00118, in Lake County shall comply with the following emissions limits:

(1) North and South Hardening Furnaces and North and South Tempering Furnaces shall:

(A) operate using only natural gas as fuel; and

(B) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(e) Cleveland-Cliffs Steel, LLC, Indiana Harbor East, whose source ID is 089-00316, in Lake County shall comply with the following emissions limits:

(1) Boilerhouse No. 5, including Boilers 501 through 504, shall comply with the following:

(A) NOx emissions shall not exceed 0.17 lb/MMBtu from each boiler on a rolling thirty (30) operating-day basis.

(B) Each boiler shall receive ninety percent (90%) or more of its total gas volume from blast furnace gas in any twelve (12) consecutive month period with compliance determined at the end of each month.

(C) Boilers shall be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(2) Blast Furnace No. 7, also known as Blast Furnace IH7, shall comply with the following:

(A) ~~Each~~The blast furnace ~~stoves~~stoves shall:

(i) receive ninety percent (90%) or more of its total gas volume from blast furnace gas as fuel on a rolling thirty (30) operating-day basis; and

(ii) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

~~(i) receive ninety percent (90%) or more of its total gas volume from blast furnace gas as fuel on a rolling thirty (30) operating-day basis; and~~

~~(ii) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.~~

(B) Each casthouse ~~shall operate in accordance with good operating practices for the control of NOx emissions.~~

~~(C) Each~~and flare shall operate in accordance with ~~the~~ manufacturer's specifications and good ~~combustion~~operating practices for the control of NOx emissions.

(3) No. 4 Basic Oxygen Furnace (BOF) ~~facilities:~~

~~(A) BOF~~ **No. 50 and BOF No. 60 shall operate in accordance with good operating practices for the control of NOx emissions.**

~~(B) Ladle preheaters shall:~~

~~(i) use only natural gas fuel;~~

~~(ii) use cold air-fired burners or an equivalent designed to achieve emissions of 0.09 lb NOx/MMBtu or less; and~~

~~(iii) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.~~

(4) The Recycling Plant shall be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(5) Lime Plant No. 1, including Kiln 1 and Kiln 2, shall be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(6) 80" Hot Strip Mill Walking Beam Furnaces No. 4, No. 5, and No. 6 shall comply with the following:

(A) Each furnace shall be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions and use only natural gas as fuel.

(B) NOx emissions from the Walking Beam Furnaces shall not exceed 357 pounds per million cubic feet of natural gas.

(C) The following requirements apply to specified units:

(i) No. 4 Walking Beam Furnace shall operate using low-NOx burners.

(ii) NOx emissions from No. 5 Walking Beam Furnace shall not exceed 286 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(iii) NOx emissions from No. 6 Walking Beam Furnace shall not exceed 283.9 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(7) No. 3 Continuous Anneal Line shall conduct tune-ups of burners as required by 40 CFR 63.7540(a)(10)*.

(f) Cleveland-Cliffs Steel, LLC, Indiana Harbor West, whose source ID is 089-00318, in Lake County shall comply with the following emissions limits:

(1) Boiler No. 6 through 8 shall comply with the following:

(A) Each boiler shall operate using only blast furnace gas, natural gas, or a blend of blast furnace gas and natural gas as fuel.

(B) NOx emissions from No. 6 Boiler and No. 7 Boiler shall not exceed 0.17 lbs/MMBtu from each boiler on a rolling thirty (30) operating-day basis.

(C) The owner or operator shall conduct tune-ups in accordance with 40 CFR 63, subpart DDDDD* and paragraph 10-7-3(c) of this rule.

(D) Natural gas heat input to No. 6 Boiler and No. 7 Boiler shall not exceed 2.62 x 10^6 MMBtu per twelve (12) consecutive month period, each, with compliance determined at the end of each month.

(E) The following ~~requirement~~requirements apply to No. 8 Boiler:

(i) Cleveland-Cliffs Steel, LLC shall install low NOx burners with overfire air in No. 8 Boiler.

(ii) NOx emissions from No. 8 Boiler shall not exceed 0.08 lb/MMBtu.

(iii) Following installation of the low-NOx burners and overfire air, the owner or operator shall conduct a NOx emissions test utilizing methods approved by the commissioner to confirm compliance.

(2) Blast Furnace No. 3, also known as Blast Furnace IH3, and Blast Furnace No. 4, also known as Blast Furnace IH4, shall comply with the following:

(A) Each group of blast furnace ~~stove~~stoves shall:

~~(i) receive ninety percent (90%) or more of its total gas volume from blast furnace gas as fuel on a rolling thirty (30) operating-day basis; and~~

~~(ii) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.~~

(i) receive ninety percent (90%) or more of its total gas volume from blast furnace gas as fuel on a rolling thirty (30) operating-day basis; and

(ii) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(B) Each casthouse ~~shall operate in accordance with good operating practices for the control of NOx emissions.~~

~~(C) Each~~and flare shall operate in accordance with ~~the~~ manufacturer's specifications and good ~~combustion~~operating practices for the control of NOx emissions.

(3) ~~No. 3~~ Basic Oxygen Furnace (BOF~~) facilities shall comply with the following:~~

~~(A) BOF),~~ No. 1 and ~~BOF~~ No. 2 shall operate in accordance with good operating practices for the control of NOx emissions.

~~(B) Ladle preheaters shall:~~

~~(i) use only natural gas fuel;~~

~~(ii) use cold air-fired burners or an equivalent designed to achieve emissions of 0.09 lb NOx/MMBtu or less; and~~

~~(iii) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.~~

(4) No. 2 Galvanizing Line ~~shall~~including the Galvanizing Furnace and Flame Furnace shall comply with the following:

(A) operate using only natural gas as fuel;

(B) conduct tune-ups of burners as required by 40 CFR 63.7540(a)(10)*; and

(C) operate in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(g) Indiana Harbor Coke Company, LP, whose source ID is 089-00382, in Lake County shall comply with the following emissions limits:

(1) Each coke oven battery, including coke oven battery A through D, shall:

(A) operate only as heat-recovery coke oven battery using staged combustion inherent to its design;

(B) operate using only natural gas as fuel when supplemental heating is necessary; and

(C) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(h) BP Products North America, Inc., Whiting Business Unit, whose source ID is 089-00453, in Lake County shall comply with the following emissions limits:

(1) NOx emissions from:

(A) No. 11A Pipe Still Heater H-1X, Heater H-2A and Heater H-3, combined, shall not exceed 80.7 tons in a twelve (12) consecutive month period with compliance determined at the end of each month.

(B) Isomerization unit Heater H-1, shall not exceed:

(i) 0.275 lbs/MMBtu; and

(ii) 1,342.03 x 10^3 MMBtu in a twelve (12) consecutive month period with compliance determined at the end of each month.

(C) Aromatic Recovery Unit Heater F-200A, shall not exceed:

(i) 0.275 lbs/MMBtu; and

(ii) 1,861.5 x 10^3 MMBtu in a twelve (12) consecutive month period with compliance determined at the end of each month.

(D) No. 4 Ultraformer Heaters F-1 through F-7 and F-8A and F-8B, shall not exceed 566.1 tons in a twelve (12) consecutive month period with compliance determined at the end of each month.

(E) Cat Feed Hydrotreating Units, Heaters F-801A, and F-801B, shall not exceed 33.03 tons in a twelve (12) consecutive month period with compliance determined at the end of each month.

(i) Cleveland-Cliffs Burns Harbor, LLC, whose source ID is 127-00001, in Porter County shall comply with the following emissions limits:

(1) Coke Oven Battery No. 1 shall:

(A) operate using only blast furnace gas, coke oven gas, or a blend of blast furnace gas and coke oven gas as fuel excluding periods of hot idling; and

(B) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(2) Coke Oven Battery No. 2 shall:

(A) operate using only coke oven gas as fuel excluding periods of hot idling;

(B) operate using staged combustion to reduce peak flame temperature; and

(C) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(3) The Recycling Plant shall be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(4) Blast Furnace C and D shall comply with the following:

(A) Each group of blast furnace ~~stove~~stoves shall:

(i) receive ninety percent (90%) or more of its total gas volume from blast furnace gas as fuel on a rolling thirty (30) operating-day basis; and

(ii) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(B) Each casthouse ~~shall operate in accordance with good operating practices for the control of NOx emissions.~~

~~(C) Each~~and flare shall operate in accordance with ~~the~~ manufacturer's specifications and good ~~combustion~~operating practices for the control of NOx emissions.

~~(5) Basic Oxygen Furnace (BOF) facilities shall comply with the following:~~

~~(A~~(5) BOF Vessels 1, 2, and 3 shall operate in accordance with good operating practices for the control of NOx emissions~~; and~~.

~~(B) Ladle preheaters shall be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions and use:~~

~~(i) only natural gas fuel; and~~

~~(ii) cold air-fired burners or an equivalent designed to achieve emissions of 0.09 lb NOx/MMBtu or less.~~

(6) A carbon monoxide flare shall be operated and maintained on BOF vessel 3 in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(7) The 160-inch Plate Mill Slab Reheat Furnaces (SRF) No. 1 and No. 2 - Continuous Pusher, shall:

(A) operate using low-NOx burners; and

(B) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(8) The 110-inch Plate Mill shall comply with the following:

(A) Slab Reheat Furnaces - Continuous Walking Beam No. 1 and No. 2 shall operate using low-NOx burners; and

(B) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(C) Not later than thirty (30) days after the effective date of this rule, the owner or operator of the source shall apply to remove the Normalizing Furnace from the source.

(9) The Cold Sheet Mill and the Continuous Heat Treat Line shall:

(A) operate using only natural gas as fuel;

(B) have tune ups of burners conducted as required by 40 CFR 63.7540(a)(10)*; and

(C) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(10) The Power Station, including boilers 7 through 12, shall comply with the following:

(A) ~~Total~~ NOx emissions from each boiler shall not exceed 0.17 lbs/MMBtu on a rolling thirty (30) operating-day basis.

(B) Tune ups shall be conducted in accordance with 40 CFR 63, subpart DDDDD* and paragraph 10-7-3~~(c)~~ of this rule.

(C) The unit shall be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(j) United States Steel Corporation Midwest, whose source ID is 127-00009, in Porter County shall comply with the following emissions limits:

(1) The Continuous Annealing Line annealing furnace and the No. 2 Galvanizing Line annealing furnace section shall be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions.

(2) Total NOx emissions from the No. 2 galvanizing line furnace stack S-20 shall not exceed 0.512 lbs/MMBtu.

(3) Total NOx emissions from the No. 2 galvanizing line furnace stack S-20a shall not exceed 0.388 lbs/MMBtu.

(k) NLMK Indiana, whose source ID is 127-00036, in Porter County shall comply with the following emissions limits:

(1) The Melt Shop twin shell electric arc furnace with a direct shell evacuation control system shall:

(A) be operated and maintained in accordance with the manufacturer's specifications and good combustion practices for the control of NOx emissions;

(B) operate using oxy-fuel burners to provide supplemental energy during the electric arc furnace process; and

(C) The NOx emissions from the melt shop operations consisting of:

(i) the electric arc furnace;

(ii) ladle metallurgical furnace;

(iii) continuous caster; and

(iv) natural gas combustion units

shall not exceed forty-five hundredths (0.45) pound per ton of steel produced and 67.95 pounds per hour through the melt shop stack (S-2).

(2) The Hot Strip Mill Operations Reheat Furnace Unit 10 shall comply with the following:

(A) Only natural gas shall be burned in the slab reheat furnace and the heat input shall not exceed 264.6 MMBtu per hour.

(B) The NOx emissions from Slab Reheat Furnace shall be controlled by NOx control technology consisting of:

(i) low-NOx burners; and

(ii) a Selective Catalytic Reduction Unit.

(C) Except during periods of startup and shutdown, NOx emissions shall not exceed:

(i) 0.077 lb/MMBtu of natural gas burned; and

(ii) 18.88 pounds per hour on a three (3) operating hour average basis.

(D) The Reheat Furnace shall operate in a manner consistent with good air pollution control and work practices to minimize emissions during startup and shutdown.

***These documents are incorporated by reference. Copies may be obtained from the Government Publishing Office, ~~www.gpo.gov,~~ www.gpo.gov, or are available for review at the Indiana Department of Environmental Management, Office of Legal Counsel, Indiana Government Center North, 100 North Senate Avenue, Thirteenth Floor, Indianapolis, IN 46204.**

(Air Pollution Control Division; 326 IAC 10-7-8)

326 IAC 10-7-9 Compliance deadlines

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

Affected: IC 13-17-3-4

Sec. 9. (a) Within one hundred twenty (120) days of becoming subject to this rule, the owner or operator of a facility subject to section 4, including any facility for which the department approves a definition of RACT pursuant to section 8 of this rule and has not approved an alternative schedule for implementing the RACT, shall do one of the following:

(1) Certify in writing to the department that such facility is in compliance with all requirements of this rule. The certification shall include:

(A) equipment description;

(B) Part 70 operating permit application number(s) or an application for a Part 70 operating permit for such source if such source does not possess an effective permit; and

(C) all necessary data and calculations that confirm compliance.

(2) Submit an application for a Part 70 operating permit or an application for a modification to a Part 70 operating permit in accordance with 326 IAC 2-7. The application shall include a compliance program that will bring the source into compliance with all the requirements of this rule as expeditiously as practicable, but in no event later than the date specified in subsection (b) of this section.

(b) The owner or operator of a facility which is subject to the requirements of section 4 of this rule, including any facility for which the department approves a definition of RACT pursuant to section 8 of this rule, and has not approved an alternative schedule for implementing the RACT, shall:

(1) Achieve and demonstrate compliance with said emissions limitations and control requirements as expeditiously as practicable, but in no event later than the following:

(A) Six (6) months after the effective date of this rule or six (6) months after a revised emission limitation approved by the department is effective.

(B) Two (2) years after the effective date of this rule or two (2) years after a revised emission limitation approved by the department is effective, if combustion modifications are required to demonstrate compliance with the applicable emissions limitations.

(C) Three (3) years after the effective date of this rule or three (3) years after a revised emission limitation approved by the department is effective, if add-on controls are required to demonstrate compliance with the applicable emissions limitations.

(2) Maintain compliance thereafter.

(Air Pollution Control Division; 326 IAC 10-7-9)

326 IAC 10-7-10 Compliance methods

Authority: IC 13-14-8-1; IC 13-14-9; IC 13-17-3-4

Affected: IC 13-17-3-4

Sec. 10. The owner or operator of a facility which is subject to the requirements of section 4 or section 8 of this rule shall demonstrate compliance with the applicable emissions limit(s) by one of the following methods:

(1) Installation of a permanent continuous emissions monitoring system for NOx, and if necessary, a diluent (carbon dioxide or oxygen). The permanent continuous emissions monitoring system shall meet the requirements of performance specification 2 and performance specification 3, 40 CFR Part 60, Appendix B* and quality assurance procedures contained in 40 CFR Part 60, Appendix F* or 40 CFR Part 75*.

(2) Performance of emission tests in accordance with U.S. EPA method 7, 7a, 7c, 7d, or 7e, and any additional approved U.S. EPA methods as applicable. Facilities conducting emissions tests in accordance with these methods shall meet the following requirements:

(A) The owner or operator shall obtain any additional:

(i) test data;

(ii) continuous diluent monitoring data, either carbon dioxide or oxygen; or

(iii) emission unit fuel usage or horsepower data;

concurrent with the compliance demonstration in order to convert the emission test results or monitoring data to the units of the applicable emissions limitation.

(B) Compliance demonstrations shall be performed while the affected facility is operating at, or as close to as possible, to its maximum permitted operating capacity.

(C) Compliance demonstrations must be representative of the normal operating modes, including fuel types or fuel blends employed, and shall exclude periods of:

(i) startup;

(ii) shutdown;

(iii) malfunction; and

(iv) low load operating conditions.

(3) For an affected facility ~~not installing~~without a permanent continuous emissions monitoring system in accordance with subdivision (1) of this section, installation of a temporary continuous emissions monitoring system for thirty (30) operating days that is capable of measuring and recording NOx and, if necessary, a diluent (carbon dioxide or oxygen) concentration in addition to calculating NOx lb/mmBtu data in an ongoing basis. Facilities that install a temporary continuous emissions monitoring system shall comply with the following:

(A) The temporary continuous emissions monitoring system shall be:

(i) installed;

(ii) calibrated;

(iii) maintained; and

(iv) operated in an approved manner and location where representative emissions measurements from the stack can be made.

(B) Prior to installation, the owner or operator shall submit a continuous emissions monitoring protocol that includes the location and specifications for each instrument or device, as well as procedures for:

(i) calibration;

(ii) operation;

(iii) data recording;

(iv) data evaluation; and

(v) data reporting.

(C) The temporary continuous monitoring system must meet the requirements of performance specification 2 and 3, as specified in 40 CFR Part 60, Appendix B~~,*~~*, and quality assurance procedures contained in 40 CFR Part 60, Appendix F, procedure 1*.

(D) The temporary continuous monitoring system must operate for a thirty (30) day period under normal operating modes. The thirty (30) days do not have to be consecutive.

(4) The owner or operator of a facility subject to this rule may request to monitor NOx emissions for compliance determination purposes using a predictive emission monitoring system in accordance with the requirements of 40 CFR 60, subpart A and appendix B, Performance Specification 16~~,*~~*, with written approval of the department, provided the facility

is not otherwise required to operate a continuous emissions monitoring system under another legal authority.

***These documents are incorporated by reference. Copies may be obtained from the Government Publishing Office, ~~www.gpo.gov,~~ www.gpo.gov, or are available for review at the Indiana Department of Environmental Management, Office of Legal Counsel, Indiana Government Center North, 100 North Senate Avenue, Thirteenth Floor, Indianapolis, IN 46204.**

(Air Pollution Control Division; 326 IAC 10-7-10)

Posted: ~~04/09~~07/30/2025 by Legislative Services Agency

Exhibit 3

Facility Emission Detail

Cleveland-Cliffs Steel LLC

Plant ID:1808900318 **Report for 2024**

Location: 3001 Dickey Rd,East Chicago,46312

NAICS: 331110 Iron and Steel Mills and Ferroalloy Manufacturing

Process ID: 13		**Process Description:** LMF SHOP FUGITIVES (V3C)	
SCC:	30301529	**Stack:**	27
	Primary Metal Production	**Description:**	LADLEMET FAC-VENT TO SHOP (V3C)
	Integrated Iron and Steel Manufacturing	**Stack Type:**	Fugitive
	Basic Oxygen Furnace (BOF): Tapping	**Height:**	0
Heat Content:	1	**Diameter:**	0
Sulfur Content:	0	**Temperature:**	0
Ash Content:	0	**Velocity:**	0
Throughput:	2078823 Tons	**Gas Flow:**	0
Material:	Material	**Input/Output:**	Process Material Produced (Outut)

Pollutant	Emission Method	Emission Factor	Overall Ctrl Efficiency	Emissions(Tons)
PM10-FIL	State/Local Emission Factor	0.00203	0	2.1100
PM25-FIL	Site-Specific Emission Factor	0.00151	0	1.5695
7439921	Site-Specific Emission Factor	0	0	0.0031

Process ID: 14		**Process Description:** BOF-LADLE PREHEAT FUEL NG	
SCC:	39000699	**Stack:**	22
	In-process Fuel Use	**Description:**	BOF SHOP ROOF MON. (V3A)
	Natural Gas	**Stack Type:**	Vertical
	General	**Height:**	250
Heat Content:	1	**Diameter:**	58
Sulfur Content:	0	**Temperature:**	77
Ash Content:	0	**Velocity:**	1
Throughput:	1481 Million Cubic Feet	**Gas Flow:**	158525
Material:	Natural Gas	**Input/Output:**	Process Material Used (Input)

Pollutant	Emission Method	Emission Factor	Overall Ctrl Efficiency	Emissions(Tons)
CO	EPA Emission Factor	84	0	62.202
NH3	EPA Emission Factor	3.2	0	2.3696
NOX	EPA Emission Factor	100	0	74.05
PM10-FIL	Site-Specific Emission Factor	1.9	0	1.4070
PM25-FIL	EPA Emission Factor	1.9	0	1.4070
PM-CON	EPA Emission Factor	5.7	0	4.2208
SO2	EPA Emission Factor	0.6	0	0.4443
VOC	EPA Emission Factor	5.5	0	4.0728
7439921	EPA Emission Factor	0.0005	0	0.0004

Facility Emission Detail

Cleveland-Cliffs Burns Harbor LLC

Plant ID:1812700001

Report for 2024

Location: 250 W US Hwy 12,Burns Harbor,46304

NAICS: 331110 Iron and Steel Mills and Ferroalloy Manufacturing

Process ID: 20		**Process Description:** VACUUM DRYERS/PREHEATERS	
SCC:	30390003	**Stack:**	69
	Primary Metal Production	**Description:**	VACUUM DEGASSER DRYER STK
	Fuel Fired Equipment	**Stack Type:**	Vertical
	Natural Gas: Process Heaters	**Height:**	140
Heat Content:	0	**Diameter:**	5.59999990463257
Sulfur Content:	0	**Temperature:**	115
Ash Content:	0	**Velocity:**	2.70
Throughput:	275.205 Million Cubic Feet	**Gas Flow:**	3990
Material:	Natural Gas	**Input/Output:**	Process Material Used (Input)

Pollutant	Emission Method	Emission Factor	Overall Ctrl Efficiency	Emissions(Tons)
CO	Site-Specific Emission Factor	84	0	11.5586
NH3	Site-Specific Emission Factor	3.2	0	0.4403
NOX	Site-Specific Emission Factor	100	0	13.7603
PM10-FIL	Site-Specific Emission Factor	1.9	0	0.2614
PM25-FIL	Site-Specific Emission Factor	1.9	0	0.2614
PM-CON	Site-Specific Emission Factor	5.7	0	0.7843
SO2	Site-Specific Emission Factor	0.64	0	0.0881
VOC	Site-Specific Emission Factor	5.5	0	0.7568
7439921	Site-Specific Emission Factor	0.0005	0	0.0001

Facility Emission Detail

Cleveland-Cliffs Steel LLC

Plant ID:1808900316 **Report for 2024**

Location: 3210 Watling St,East Chicago,463121721

NAICS: 324199 All Other Petroleum and Coal Products Manufacturing

Group ID: 139		**Group Description:** NO. 4 BOF LADLE PREHEAT	
Percent Quarterly Throughput			
Winter: 25	**Spring:** 25	**Summer:** 25	**Fall:** 25
Days Per Week: 7	**Weeks Per Year:** 50	**Hours Per Day:** 24	**Hours Per Year:** 8064
Process ID: 01		**Process Description:** Natural Gas	
SCC:	39000699	**Stack:**	36
	In-process Fuel Use	**Description:**	NO. 4 BOF LADLE PREHEAT
	Natural Gas	**Stack Type:**	Fugitive
	General	**Height:**	0
Heat Content:	1020	**Diameter:**	0
Sulfur Content:	0	**Temperature:**	100
Ash Content:	0	**Velocity:**	0
Throughput:	266.5 Million Cubic Feet	**Gas Flow:**	0
Material:	Natural Gas	**Input/Output:**	Process Material Used (Input)

Pollutant	Emission Method	Emission Factor	Overall Ctrl Efficiency	Emissions(Tons)
CO	EPA Emission Factor	84	0	11.193
NH3	EPA Emission Factor	3.2	0	0.4264
NOX	EPA Emission Factor	100	0	13.325
PM10-FIL	EPA Emission Factor	1.9	0	0.2532
PM25-FIL	EPA Emission Factor	1.9	0	0.2532
PM-CON	EPA Emission Factor	5.7	0	0.7595
SO2	EPA Emission Factor	0.6	0	0.0800
VOC	EPA Emission Factor	5.5	0	0.7329
7439921	EPA Emission Factor	0.0005	0	0.0001