

STATE OF INDIANA	)	BEFORE THE INDIANA OFFICE OF
	)	ENVIRONMENTAL ADJUDICATION
COUNTY OF MARION	)	
	)	
IN THE MATTER OF:	)	
	)	
OBJECTION TO THE ISSUANCE OF FESOP	)	
NEW SOURCE CONSTRUCTION	)	
MINOR (PSD/EO)	)	
PERMIT NO. 089-44042-00660 TO	)	
FULCRUM CENTERPOINT, LLC	)	
GARY, LAKE COUNTY, INDIANA	)	
	)	CAUSE NO. 22-A-J-5216
GARY ADVOCATES FOR RESPONSIBLE	)	
DEVELOPMENT, Dorreen Carey, Kimmie	)	
Gordon, Carolyn McCrady, Sy Moskowitz,	)	
and Jennie Rudderham,	)	
Petitioners,	)	
	)	
FULCRUM CENTERPOINT, LLC,	)	
Permittee/Respondent,	)	
	)	
INDIANA DEPARTMENT OF	)	
ENVIRONMENTAL MANAGEMENT,	)	
Respondent.	)	

**AMENDED PETITION FOR ADMINISTRATIVE REVIEW**

Petitioner, Gary Advocates for Responsible Development (“GARD”), an unincorporated association of citizens, and individual Petitioners Dorreen Carey, Kimmie Gordon, Carolyn McCrady, Sy Moskowitz, and Jennie Rudderham (collectively “Petitioners”), by counsel, submit this Amended Petition for Administrative Review of the Indiana Department of Environmental Management’s (“IDEM”) Issuance of New Source Construction and Federally Enforceable State Operating Permit No. 089-44042-00660 to Fulcrum Centerpoint LLC, dated August 16, 2022, and available on IDEM’s Virtual File Cabinet (“VFC”) as Document ID No. 83357534. This permit is for the proposed Fulcrum Centerpoint facility to be located at 6200 Industrial Highway in Gary, Lake County, Indiana.

IDEM served Petitioners with written notice of the permit by U.S. Mail, post-marked August 16, 2022 (VFC# 83359532). Petitioners timely filed their initial Petition for Administrative Review of the FESOP on September 6, 2022. In accordance with the Court's Case Management Order of November 16, 2022, Petitioners file this Amended Petition for Administrative Review pursuant to Indiana Code § 13-15-6, *et seq.*, Ind. Code § 4-21.5-3-7, and 315 IAC 1-3-2.

### **Introduction**

1. The proposed Fulcrum Centerpoint facility purports to be able to make low-carbon jet fuel out of mountains of household trash while creating lots of good paying jobs and virtually no pollution. To support its claims, Fulcrum says, "trust us." It disguises the commercial and household waste with the title "Feedstock," and hides its operations behind the equally opaque title of "biorefinery." In fact, Fulcrum's permit application offers few details about, and no limits on, the contents of the 600,000 tons per year of trash that it plans to heat in its three ovens to create huge amounts of ash and a small amount of synthetic gas that will either be burned off in a flare, used to fuel the ovens, or be further processed into "transportation fuel." A more apt title for its proposed facility would be the Fulcrum trash ovens.

2. Nomenclature aside, IDEM cannot issue a Clean Air Act permit without verifiable information that fully supports Fulcrum's estimated emissions. Fulcrum acknowledges that its proposed trash ovens, without any pollution controls, have the potential to emit pollutants well in excess of the amount that would require it to install the best available control technology. Fulcrum claims, however, that it will install pollution controls that will reduce the plant's potential to emit below this threshold. Indiana permitting regulations, however, require applicants to provide the bases for all emissions estimates. Before issuing a new source

construction and federally enforceable State operating permit to Fulcrum, IDEM (and the public) must know what Fulcrum's proposed trash ovens will be using as "Feedstock" and see all of the underlying bases and factual data behind Fulcrum's emissions estimates.

3. Fulcrum's FESOP application touts its process as having been "tested, demonstrated, and validated" using "commercially demonstrated gasification and FT technologies with other standard refining subsystems . . ." The application, however, only identifies a single "demonstration unit," apparently small enough to fit inside a school gymnasium, that Fulcrum operated for 120 days. It's only experience with a similar facility is at its Sierra plant outside of Reno, Nevada, completed in July 2021 and still not fully operational. In short, Fulcrum's permit relies on lab-tested technology to support the construction of an enormous commercial scale facility in Gary, Indiana.

4. In issuing the FESOP, IDEM found that Fulcrum's "proposed biorefinery process . . . has been proven to work at two (2) gasification facilities operating in North America." See *Addendum to the Technical Support Document (ATSD)*, at 20 (citing *Assessment of Municipal Solid Waste Energy Recovery Technologies*, U.S. EPA (2020)) (VCF# 83357534). What IDEM fails to mention is that this same report from the U.S. Environmental Protection Agency ("U.S. EPA") identified seven gasification plants in the United States that had ceased operations due to a variety of technical and economic issues. The two cited by IDEM were a 20 ton/day demonstration unit in California and a 350 ton/day facility in Alberta, Canada that was reported to be "in disrepair and not operating at capacity." According to the report, one of the key problems with these kinds of plants is "difficulties encountered scaling up facilities from demonstration to commercial scale." Fulcrum's proposed Centerpoint plant will be nearly five times the size of the Alberta gasification plant.

5. IDEM's obligation to confirm the reliability of the data underlying Fulcrum's air permit application is particularly important when issuing a permit within a community already beset by numerous other sources of air pollution, as is the case here. The largely Black and Latino residents of the surrounding, heavily industrialized communities suffer from high rates of cancer, asthma, lead exposure, and poverty. The health risk in the area is so substantial that the U.S. EPA has designated the area as having some of the highest levels in the state for various pollutants and illnesses.

### **The IDEM Decision at Issue**

6. On April 30, 2021, Fulcrum applied to IDEM for a new source construction and federally enforceable State operating permit ("FESOP" or "air permit") to construct and operate what it calls a "biorefinery" at 6200 Industrial Hwy. in Gary, Lake County, Indiana (the "Fulcrum trash ovens"). Fulcrum proposes to build this plant on 75 acres situated a few hundred yards from Lake Michigan and close to public streets, residential neighborhoods, and schools. The plant is designed to heat as much as 1,650 tons per day of sorted and shredded trash and supposedly turn it into ash and transportation fuel. (VFC# 83151097).

7. On March 31, 2022, IDEM published a draft air permit for the Fulcrum trash ovens to allow for receipt of public comments. (VFC# 83299094). On April 27, 2022, IDEM held a public hearing to receive comments, (VFC#83298694), and accepted public comments through May 16, 2022, (VFC#83310017), including from the U.S. EPA, which cautioned IDEM to conduct further analyses to determine the impacts of the Fulcrum trash ovens on affected communities that are already plagued by some of the highest risks of respiratory illness and cancer in the nation due to their exposure to already extreme levels of toxic air pollution. Yet,

none of this prompted IDEM to fulfill its obligation to protect this already overburdened community from Fulcrum's additional air emissions.

8. Instead, on August 16, 2022, IDEM issued a new source construction and FESOP to Fulcrum Centerpoint that, as detailed below, is largely based on Fulcrum's unsupported claims and incomplete information on which to set protective air emission limits and standards in violation of the Clean Air Act. Accordingly, the OEA should revoke the air permit issued to Fulcrum and not reissue it unless and until the following deficiencies are addressed.

### **Interests of Petitioners**

9. Petitioner Gary Advocates for Responsible Development ("GARD"), is an unincorporated volunteer citizens' group of residents of Gary, Indiana and surrounding communities. GARD's mission is to promote economic development in the City of Gary that prioritizes environmental sustainability – including protecting the environment and assuring the environmental integrity of the City and its resources; creating sustainable and living-wage jobs for the citizens of Gary including job training when necessary; and promoting the health and prosperity of all citizens of Gary. The interests at stake in this action are germane to GARD's purpose. GARD asserts the right to bring this petition on its own behalf.

10. Several GARD members live, work, and/or recreate in close proximity to the proposed Fulcrum trash ovens so they reasonably anticipate being exposed to emissions from its operations. Those emissions would harm these GARD members' lives in numerous ways, including by reducing their use and enjoyment of outdoor spaces near the facility. These GARD members are thus aggrieved and adversely affected by IDEM's issuance of a new source construction and FESOP to Fulcrum. Because GARD's members are aggrieved and adversely

affected by the approved Fulcrum trash ovens, GARD has the right to pursue this administrative appeal on behalf of its members.

11. Petitioner Dorreen Carey, a resident of Gary, Indiana, is a member of GARD. She spends time outdoors close enough to the location of the proposed Fulcrum trash ovens to reasonably expect to be exposed to its air emissions. Ms. Carey, who resides in the Miller Beach neighborhood, routinely walks to Lake Street Beach, visits Miller Woods and nearby environs, all within 10-12 miles of the proposed facility. She helps manage and works at a community garden near Miller Woods that grows vegetables for a local church food pantry. Ms. Carey often rides her bicycle along the bike trail from Miller to downtown Gary and visits businesses and places in the Westside and Brunswick neighborhoods of Gary that are less than five miles from the proposed facility. She also visits Pine Station and Ivanhoe South Nature Preserves that are less than two miles from the proposed Fulcrum trash ovens. Ms. Carey has a chronic lung disease and is particularly concerned with additional sources of air pollution in the Gary area.

12. Petitioner Kimmie Gordon is a resident of Gary, Indian, who resides in the Miller neighborhood approximately ten miles east of the proposed Fulcrum plant. She is the Executive Director of Brown Faces Green Spaces, a non-profit corporation that serves to share the local natural environment with people of color in Gary and the surrounding communities. In that role, Ms. Gordon visits parks, beaches, nature preserves, and other outdoor places throughout Gary and the surrounding area. She is reasonably concerned about the potential impacts to air quality and quality of life from the Fulcrum plant.

13. Petitioner Carolyn McCrady, a current and long-time resident of Gary, Indiana, is a member of GARD. She routinely spends time with family and friends who live on the west side of Gary within a few miles of the proposed Fulcrum trash ovens. Ms. McCrady also visits the

Gary Public Library, attends meetings, visits with friends, and spends time outside in various locations throughout the Gary area. She is reasonably concerned about the potential impacts to air quality and quality of life from the proposed Fulcrum plant.

14. Petitioner Sy Moskowitz was a resident of Gary, Indiana for several years, but recently moved to Valparaiso, Indiana. He is a member of GARD and regularly visits friends and attends meetings in Gary. Mr. Moskowitz enjoys hiking in Miller Wood and along the Calumet Trail near the site of the proposed Fulcrum trash ovens. He is reasonably concerned about the potential impacts to air quality and the quality of life in Gary from the Fulcrum plant.

15. Petitioner Jennie Rudderham, a resident of Gary, Indiana, is a member of GARD. She spends a lot of time outdoors in the national park, biking the Marquette Trail, and swimming in Lake Michigan at Lake Street Beach and Marquette Park. Ms. Rudderham has also enjoyed walking the shoreline at Jeorse Park which is just west of the proposed Fulcrum trash ovens. Ms. Rudderham and her minor child spend a lot of time every month outdoors in areas all around the proposed plant, including: Washington Park in East Chicago; East Chicago Public Library; Gary Public Library; Ivanhoe Nature Preserve; and Gibson Woods Nature Preserve. She and her family like to bike, including along the Green Link Trail. Ms. Rudderham has had asthma since childhood and is reasonably concerned about the potential health effects of additional air pollution sources in the Gary area.

### **Respondents**

16. Respondent IDEM is an administrative agency of the State of Indiana charged with implementing and enforcing federal and state environmental laws for protection of public health and the environment. IDEM is responsible for reviewing and approving construction and operation permits for stationary sources of air emissions. IDEM's approval decisions, including

the Approved Construction Permit at issue here, are subject to appeal to the Office of Environmental Adjudication (“OEA”).

17. Respondent Fulcrum Centerpoint, LLC (“Fulcrum”) is a Delaware Limited Liability Company formed in 2017. It is a subsidiary of Fulcrum Bioenergy Inc. and is headquartered in Pleasanton, California. Fulcrum is registered to do business in Indiana as a foreign LLC with the Indiana Secretary of State.

### **OEA Jurisdiction**

18. The OEA has jurisdiction to decide this appeal pursuant to IC §§ 4-21.5-7-3 and 13-15-6-3, and to revoke or modify the Construction Permit pursuant to IC § 13-15-7-1. In its review, OEA must determine whether IDEM complied with all applicable statutes and regulations. Ind. Code § 4-21.5-7-3. The OEA has *de novo* review of IDEM’s issuance of the new source construction and FESOP.

### **Statutory and Regulatory Background**

#### ***Clean Air Act Requirements***

19. Section 108(a) of the Clean Air Act, 42 U.S.C. § 7408(a), requires U.S. EPA to identify and prepare air quality criteria for each air pollutant of which: (a) the emissions may endanger public health or welfare, and (b) the presence results from numerous or diverse mobile or stationary sources. For each such “criteria pollutant,” U.S. EPA promulgates national ambient air quality standards (“NAAQS”) necessary to protect human health and welfare. These criteria pollutants include nitrogen oxides (“NO<sub>x</sub>”), sulfur dioxide (SO<sub>2</sub>), particulate matter (“PM”), and ozone, for which U.S. EPA has identified primary and secondary NAAQS. *See* 40 C.F.R. Part 50. Some other pollutants are regulated by virtue of their character as precursors for or



contributors to criteria pollutants, including volatile organic compounds (“VOCs”), which are precursors for ozone. 40 C.F.R. § 52.21(b)(50)(i)(b).

20. An area that meets the NAAQS for a particular pollutant is termed an “attainment” area. An area that does not meet the NAAQS is termed a “nonattainment” area.

21. The portion of Lake County where Fulcrum proposes to build and operate its trash ovens is classified as a moderate non-attainment area for the 2015 8-hour ozone standard. 40 C.F.R. § 81.315.

22. Title V of the Clean Air Act, 42 U.S.C. §§ 7661-7661f, establishes an operating permit program for certain sources, including “major sources” designated as such by their potential to emit criteria pollutants or precursors. *See* 40 C.F.R. Part 70 (State Operating Permit Programs). A stationary source that limits its potential to emit criteria pollutants through physical or operational limitations on its capacity to emit an air pollutant does not need an emissions permit under Title V, but those physical or operational limitations must be federally enforceable. 40 C.F.R. 70.2 (definition of “potential to emit”).

### ***Indiana Air Permit Requirements***

23. Indiana allows a facility that limits its potential to emit below the “major source” threshold to apply for a FESOP under 326 IAC 2-8 and avoid complying with the “major source” requirements of Title V of the Clean Air Act.

24. An application for a State FESOP must include, among other things, the following emissions-related information for all emissions units:

(A) All emissions of regulated air pollutants. A FESOP application shall describe all emissions of regulated air pollutants emitted from any emissions unit. The applicant shall provide such additional information related to the emissions of air pollutants as is sufficient to verify which requirements are applicable to the source.

(B) An identification and a description of all points of emissions described in clause (A) in sufficient detail to establish the applicability of requirements of this title.

(C) Emissions rates of all pollutants described in clause (A) in tons per year (tpy) and in such terms as are necessary to establish compliance consistent with the applicable standard reference test method.

(D) The following information to the extent it is needed to determine or regulate emissions:

- (i) Fuels, including types and characteristics.
- (ii) Fuel use, including types and quantities combusted.
- (iii) Raw materials.
- (iv) Production and process rates.
- (v) Operating schedules.

(E) An identification and description of air pollution control equipment and compliance monitoring devices or activities.

(F) Limitations on source operation affecting emissions or any work practice standards, as requested by the applicant, for all regulated pollutants at a FESOP source.

(G) Other information required by any applicable requirement, including information related to stack height limitations developed under Section 123 of the CAA.

(H) Calculations, examples of calculations, or descriptions of calculation methods or basis on which the information in this subsection is based.

326C 2-8-3(c).

25. An application for an Indiana FESOP must also include a certification by an authorized individual as to its truth, accuracy, and completeness. 326 IAC 2-8-3(d).

***Permitting Requirements to Protect Public Health***

26. In implementing the Clean Air Act, Congress found that “the growth in the amount and complexity of air pollution brought by urbanization, industrial development ... has resulted in mounting dangers to the public health and welfare.” 42 U.S.C. § 7401(a)(2).

27. Indiana enacted its own Environmental Policy “to preserve, protect, and enhance the quality of the environment so that, to the extent possible, future generations will be ensured clean air, clean water, and a healthful environment.” IC § 13-12-3-1. Indiana also enacted air pollution control laws “to maintain the purity of the air resource of Indiana, which shall be consistent with protection of the public health and welfare and the public enjoyment of the air resource ... of Indiana.” IC § 13-17-1-1.

28. The State’s Environmental Management laws are to be “liberally construed” to effectuate the purposes of “public health, safety, and welfare.” IC § 13-12-2-1.

29. Pursuant to Indiana’s air pollution control laws, IDEM must “safeguard the air resource through the prevention, abatement, and control of air pollution by all practical and economically feasible methods.” IC § 13-17-1-1. The mission of IDEM is “to implement federal and state regulations to protect human health and the environment.”

30. To carry out its mission, IDEM has the authority to impose conditions on permits that are necessary to ensure that public health will be protected and that air quality standards can be attained and maintained. 326 IAC 2-8-13(c)(8).

31. Furthermore, IDEM may deny a FESOP if the ambient air quality standards cannot be attained or maintained if a permit is issued, and can impose conditions on the permit as necessary to protect public health. 326 IAC 2-8-13(c)(7)(A) & (c)(8)(C).

32. IDEM cannot approve the construction of any source or emission unit if the Commissioner determines that the terms and conditions of the approval is not protective of the public health or will interfere with the attainment or maintenance of any NAAQS. 326 IAC 2-1.1-5.

## **Factual Background**

### ***Public Health of the Communities Surrounding the Proposed Fulcrum Centerpoint Plant***

33. The proposed Fulcrum plant is within the city limits of Gary, Indiana, just east of the East Chicago, Indiana neighborhoods of Sunnyside and Prairie Park, and less than 600 yards from Lake Michigan. More than 28,000 people live within a three-mile radius of the proposed plant, of whom 92% are people of color. Almost one-third of Gary residents live in poverty, and the median household income is \$31,315 (in 2020 dollars). In comparison, only 10% of Indiana residents are African-American and the statewide median income is \$58,235.

34. There are 50 other stationary sources large enough to require a Title V permit within a five-mile radius of the proposed Fulcrum trash ovens. During IDEM's comment period, U.S. EPA Region 5 stated that "neighborhoods around the proposed facility have some of the highest levels in the state for many environmental justice indexes reported by EJScreen." The U.S. EPA specifically stated that "all 12 environmental justice indexes for the area surrounding the proposed facility exceed the 90th percentile in the state." These indexes include high rates of ozone, diesel particulate matter, air toxics cancer risk, air toxics respiratory hazard, lead paint, traffic proximity, and Superfund site proximity. U.S. EPA air quality estimates have ranked northern Lake County Indiana as having a high cancer risk compared to other cities in the nation.

35. A 2009 study conducted by USA Today found that air quality outside of schools in East Chicago and Gary exposed children to higher levels of airborne toxins, heavy metals, and VOCs, than other schools that it studied in the United States. A 2014 survey conducted by the Hoosier Environmental Council showed that a majority of area residents attribute their health problems at least partially to pollution. A 2017 survey conducted for the Northwest Indiana

Regional Planning Commission showed that a majority of area residents rate their air quality as “poor” or “fair.”

36. In light of these facts, U.S. EPA urged IDEM to inform its permitting decision by conducting further analyses to determine the impacts that the Fulcrum trash ovens would have on the affected communities. The federal agency recognized the “significant health disparities” (low-life expectancy, asthma and heart disease) that plague the local communities and offered to assist IDEM in conducting these analyses.

37. IDEM did not take the U.S. EPA up on this offer and conducted no further analyses.

### ***The Fulcrum Centerpoint Trash ovens***

38. The proposed Fulcrum plant will be a continuous (24/7) operation heating its “Feedstock” to 1,200°F in an oxygen-controlled environment that will generate synthetic gas (“syngas”), char, and ash. The syngas will then be refined in a Fischer-Tropsch process to create what is proposed to be a transportation fuel.

39. The amount of energy needed to operate the Fulcrum trash ovens will be more than twice the amount of energy that could be generated by any transportation fuel it produces.

40. Fulcrum’s “Feedstock” will be trucked at a rate of 1,650 tons per day from two offsite facilities where residential or commercial waste will be sorted, shredded, and partially dried.

41. According to IDEM, in 2021 Indiana generated 9.4 million tons of municipal solid waste, of which nearly 70% (6.55 million tons) was sent to landfills. The Fulcrum plant is designed to annually divert no more than 0.6 million tons of garbage from area landfills.

42. Upon arrival at the Fulcrum plant, this Feedstock of shredded trash will be placed in three 80,000 ft.<sup>2</sup> storage buildings before further drying in one of three Feedstock dryers and being transferred to one of three ovens, called “gasifier trains” consisting of a steam reformer, a carbon trim cell (“CTC”), and a partial oxidation (“POx”) unit.

43. Syngas is generated during each portion of the gasifier train while being indirectly heated to 1,200° F by 12 “pulse combustor burners” before being sent to a heat recovery steam generator (“HRSG”) where it is cooled before further processing.

44. Non-gasifiable particles called “slag,” which is entrained in the syngas exiting each gasifier train, are removed at the bottom of the HRSGs where it is collected in hopper bins at a rate of approximately 12.6 tons per day.

45. Syngas exiting the HRSGs goes through an acid gas scrubber that produces a condensate treated in the wastewater treatment system.

46. The syngas goes through various purifier systems such as guard beds and other clean-up steps to remove contaminants prior to entering the Fischer-Tropsch Unit. Water generated in the Fischer-Tropsch process is also sent to the water treatment facility.

47. According to Fulcrum’s FESOP application, emissions generated by the facility will include fugitive and combustion emissions from Feedstock processing and handling, the Feedstock dryers, a bed material silo and an ash silo on each gasifier train, slag handling, two flares, storage tanks, equipment leaks, a utility boiler, and various heaters and burners.

48. During startup and shutdown, the Fulcrum plant is designed to flare syngas rather than process it for production of fuel.

49. Fulcrum anticipates up to six startup events each year requiring a total flaring of up to 12,766 tons per year (“tpy”) of syngas.

50. There are three different shutdown scenarios requiring the purging of syngas: before it is pressurized, after it is pressurized, and during the draining and inspection of storage tanks. Fulcrum anticipates up to 12 shutdowns each year of low- or high-pressure syngas and up to four shutdown events for storage tank draining and inspection, resulting in a total of as much as 346 tons of syngas flared each year due to shutdowns.

***Fulcrum's FESOP Application***

51. If uncontrolled, the Fulcrum facility's potential to emit ("PTE") pollutants would qualify it as a major facility under 326 IAC 1-2-38, thereby requiring the issuance of a Part 70 Operating Permit. See 40 C.F.R. Part 70; Clean Air Act, Title V.

52. Fulcrum, however, sought a FESOP by proposing that its facility will use add-on control devices to limit its controlled PTE to less than the "major source" thresholds applicable to Lake County: PM of 250 tpy; VOCs and NOx of 50 tpy; and individual hazardous air pollutants ("HAPs") of 10 tpy and any combination of HAPs of 25 tpy.

53. To reduce its emissions below the "major source" thresholds, Fulcrum proposes to install the following "add-on" pollution control devices: Selective Catalytic Reduction systems for 12 pulse combustors and the utility boiler; an oxidation catalyst system for the boiler; baghouse dust collectors for Feedstock storage, handling, and drying; flares for the process vents and fugitive emissions from the loading operation; and a sulfur removal system for the syngas prior to entering the Fischer-Tropsch unit.

**Legal and Technical Deficiencies of the Construction Permit**

**FIRST DEFICIENCY**

Fulcrum’s Permit Application Does Not Describe  
“Feedstock” Sufficient to Determine or Regulate  
Emissions as Required by 326 IAC 2-8-3(c)(3)

54. Fulcrum’s FESOP application does not define or limit the content or characterization of the “Process Engineered Feedstock” used in its Fulcrum Centerpoint trash ovens.

55. In response to public comments regarding the content of this Feedstock, IDEM stated that it relied on information appearing on the Fulcrum website and in the company’s Solid Waste permit application that was later withdrawn.

56. The information relied on by IDEM states only that Fulcrum “expects” its Feedstock will be composed of the following broad waste categories:

<u>Material</u>	<u>% by weight</u>
Mixed Paper	46
Film and Other Plastic	30
Wood	8
Textiles	8
Food/Yard Waste	2
Ferrous	0.1
Non-Ferrous	0.8
Inerts	2
Fines (<2”)	4

See ATSD, at 39-40.

57. Neither Fulcrum’s permit application materials nor IDEM’s permit approval provide any further description of or limitations on the waste materials “expected” to comprise the 1,650 tons of trash to be cooked at the plant every day. Nor does the permit acknowledge even the possibility that the composition of commercial and household waste can vary seasonally.



58. The general categories of waste materials listed as expected to comprise Fulcrum's "Feedstock" are insufficient to identify what emissions will be produced or to calculate the volume of specific pollutants.

59. For example, the category of "Film and Other Plastic" could include polyethylene terephthalate (PET), high-density polyethylene (HDPE), low-density polyethylene (LDPE), linear low-density polyethylene (LLDPE), polyvinyl chloride (PVC), polylactic acid (PLA), polypropylene, polystyrene, or any of the other plastic compounds that are sold to the public. Each type of plastic is made of different chemicals, including petrochemicals. Each different type of plastic may produce different pollutants when heated to 1,200°F in a low-oxygen environment during gasification.

60. Similarly, the category of "Textiles" could include such synthetic fabrics as polyester, acrylic, nylon, rayon, acetate, spandex, and latex. Each of these fabrics are made from different synthetic polymers derived from coal or petroleum.

61. The categories of "Inerts" and "Fines" are not defined at all so there is no means to calculate the emissions they are generating.

62. The content of Fulcrum's Feedstock will directly impact the makeup of syngas at various emission sources at the Fulcrum plant, including at the utility boiler, flares, and equipment leaks, as well as the makeup of slag, ash, and wastewater.

63. Without a clearly defined Feedstock, IDEM cannot accurately calculate and verify emissions, regulate emissions, or ensure compliance with the Construction Permit's emission limits, as required by 326 IAC 2-8-3(c)(3).

64. Nor does Fulcrum’s FESOP application include a certification by an authorized individual as to the truth, accuracy, and completeness of the content, characterization, or relative makeup of its so-called “Feedstock,” as required by 326 IAC 2-8-3(d).

SECOND DEFICIENCY

Fulcrum’s Permit Application Does Not Provide the Bases on Which  
Emission Rates Are Based Sufficient to Determine or Regulate Emissions  
as Required by 326 IAC 2-8-3(c)

65. IDEM issued a new source construction and FESOP to Fulcrum without any reasoned basis for some of its emissions rates and calculations, as required by Indiana’s permitting regulations. Instead, IDEM simply accepted the rates and calculations Fulcrum provided, typically without question, to support its decision. The basis for some of these emissions calculations are wholly unsupported, while others are based on incomplete manufacturer’s guarantees, or generic emission factors that may not be applicable. Such unsupported emissions calculations include, but are not limited to:

***Wholly Unsupported Emissions Calculations***

66. Bed material and ash silos: The stated basis for the exhaust gas flow rate and the loading rate in the particulate matter emissions calculations in Table 3 of Fulcrum’s application were simply “provided by Fulcrum Centerpoint” without explanation or a basis for the rates.

67. Flare syngas: IDEM accepted Fulcrum’s “design specifications” for all operating parameters serving as the basis of the emissions calculations. In addition, the PM emissions factor was based entirely on Fulcrum’s “estimate.” And the concentration of hazardous air pollutants in the syngas being flared was based on undisclosed “Fulcrum Centerpoint data” purportedly “based on Aspen model.”

68. VOCs from wastewater treatment system: In its initial application, Fulcrum did not identify any potential emissions from the wastewater treatment system. In a Notice of

Deficiency, dated July 8, 2021, IDEM requested a “description of the wastewater treatment system and if it will have any air emissions.” Fulcrum’s response, dated August 11, 2021, describes the wastewater treatment system and calculates its VOC emissions as being 18.59 tpy – just under the 25 tpy threshold that would require installation of best available control technology. 326 IAC 8-1-6(1). Fulcrum’s emissions estimate for its wastewater treatment system is based in part on a VOC concentration of 33 mg/L. Fulcrum’s response provides no explanation or support for the VOC concentration of wastewater.

***Incomplete Vendor Guarantees***

69. Baghouse control efficiency: IDEM accepted Fulcrum’s assertion that the baghouses controlling particulate emissions from various sources, such as Feedstock storage and handling, bed media silo, and the ash silo, would have a control efficiency of 99%. For example, each of the three Feedstock storage buildings has an associated Feedstock dryer expected to handle up to 550 tons of trash each day. Particulate emissions from the Feedstock dryers are controlled by a baghouse and cannot exceed 1.2 lbs/hr. Fulcrum estimates that it will meet this limit with a baghouse that has 99% control efficiency based on “a brief outline of [the contractor’s] design basis for the Fulcrum Sierra BioFuels Plant Dust Collection System” prepared in 2019. IDEM did not receive confirmation that the “Dust Collection System” for the Fulcrum Sierra plant is comparable to any of the various baghouses to be installed at the Fulcrum Centerpoint trash ovens. If the systems are comparable, there is no explanation why actual emissions data or control efficiency data from the Sierra plant could not have been used to verify the basis for these emissions calculations.

70. Boilers and Heaters Emission Rates: Several of the emissions sources at the Fulcrum plant are machinery that produce heat. These include the utility boiler used to burn

purge gas and other wastes, the dryers at the Feedstock storage buildings, and the twelve pulse combustor burners that indirectly heat the Feedstock. Fulcrum's application contains estimated emissions based on "guarantees" from unidentified vendors for unspecified equipment. For example, NOx emissions from the utility boiler are to be controlled by a selective catalytic reduction ("SCR") system. Fulcrum's NOx emissions calculations for the boiler apply an 83% control efficiency for the SCR based upon a manufacturer that has yet to be selected. Moreover, IDEM had no information to conclude that the purported manufacturer's guarantee was based on equipment with an airflow velocity and temperature similar to what would be used at the Centerpoint facility. An SCR unit's NOx control efficiency are reported to vary widely depending on airflow velocity and temperature.

#### ***Inapplicable AP-42 Emissions Factors***

71. The U.S. EPA has published AP-42, a compilation of emission factors, since 1972 to estimate emissions as a tool for air quality management. "An emission factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant." *AP-42: Compilation of Air Pollutant Emission Factors*, EPA/OAQPS (5<sup>th</sup> ed. Jan. 1995) at 1 (emphasis in original). Because the emission factors "essentially represent an average of a range of emission rates," individual sources will have emission rates above and below the AP-42 values. *Id.* at 2.

72. The current edition and its supplements contain emissions factors for more than 200 air pollution source categories, but not every process or source category is listed.

Before simply applying AP-42 emission factors to predict emissions from new or proposed sources, or to make other source-specific emission assessments, the user should review the latest literature and technology to be aware of circumstances that might cause such sources to exhibit emission characteristics different from those of other, typical existing sources. Care should be taken to assure that the subject source type and design, controls, and

raw material input are those of the source(s) analyzed to produce the emission factor. This fact should be considered, as well as the age of the information and the user's knowledge of technology advances.

*Id.* at 4.

73. In issuing this FESOP, IDEM simply accepted Fulcrum's proffered AP-42 estimates without evaluating their applicability to the specific emissions and processes. The most obvious example of the potentially inapplicable use of AP-42 emissions factors is with PM emissions from the three Feedstock storage buildings.

74. According to Fulcrum, the single largest source of PM emissions at its trash ovens is fugitive emissions from the Feedstock storage buildings. These emissions are to be controlled by a dedicated baghouse for each Feedstock storage building. Again, this Feedstock is an ill-defined hodgepodge of residential and commercial trash that has been shredded and partially dried. The shredding of the trash at the Feedstock Processing Facilities is likely to increase the amount of PM entrained in the Feedstock. Those particles will be comprised of a myriad of different materials with different sizes, weights, and aerodynamic properties.

75. In estimating PM emissions from these buildings full of shredded household and commercial trash, Fulcrum used the AP-42 emission factor for "aggregate storage piles." Aggregates include uniform minerals, such as ore, limestone, and coal, and their emissions will vary depending on the age of the stored material, its moisture content, and the proportion of fines. *See* AP-42, Section 13-2-4. Fulcrum's application provided no explanation for why aggregate storage piles would have the same emission factor as its variable, mixed-media, and ill-defined "Feedstock," and IDEM accepted these emissions estimates without any underlying support.

76. Collectively, these examples of IDEM's acceptance of baseless emissions calculations demonstrate its failure to comply with applicable State permitting regulations. Without obtaining a reasoned and verified basis for some of Fulcrum's emissions calculations, IDEM could not have verified the accuracy of emissions estimates or have a sufficient basis to regulate emissions or to ensure compliance with the permit's emission limits, as required by 326 IAC 2-8-3(c).

### THIRD DEFICIENCY

#### IDEM Failed to Satisfy Its Obligations Under Air Pollution Regulations To Adequately Consider and Protect the Public Health

77. IDEM has an affirmative obligation to ensure that new source construction permits and FESOPs are protective of public health. 326 IAC 2-1.1-5 and 2-8-13(c)(8)(C).

78. The public's health that must be protected are the people who are most likely to be exposed to emissions from the proposed facility. The public living in the communities surrounding the proposed Fulcrum trash ovens are already overburdened with numerous other sources of air pollution and have a higher risk of cancer and respiratory illnesses.

79. Having failed to conduct any additional analyses on the potential health impacts of the Fulcrum trash ovens on this public, including the analyses recommended by the U.S. EPA, IDEM failed to fulfill its obligation under Indiana's permit review rules to ensure that the public's health was protected.

80. Due to IDEM's failures to comply with Indiana air permit regulations prior to issuing a new source construction and FESOP to Fulcrum, IDEM failed to comply with applicable statutes and regulations.

### **Relief Requested**

WHEREFORE, to remedy the foregoing legal, factual, and technical deficiencies, Petitioners respectfully request that the Office of Environmental Adjudication:

- (a) Revoke Fulcrum’s new source construction and FESOP and not reissue it unless and until, pursuant to 326 IAC 2-8-3(c)(3), Fulcrum provides complete information regarding each type of plastic or synthetic material and all other constituents in its “Feedstock,” and the relative quantities of each sufficient to calculate the amount of emissions created by heating and processing the Feedstock and to establish enforceable limits;
- (b) Revoke Fulcrum’s new source construction and FESOP and not reissue it unless and until, pursuant to 326 IAC 2-8-3(c), Fulcrum provides complete information regarding the bases for all emissions calculations contained in the FESOP, including full disclosure of prior test results; and
- (c) Revoke Fulcrum’s new source construction and FESOP and not reissue it unless and until, pursuant to 326 IAC 2-1.1-5 and 2-8-13(c)(8)(C), IDEM evaluates the risk to public health of the surrounding communities presented by Fulcrum’s additional emissions and determines that the impact of this permit will not further impair the public health.

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I certify that a copy of the foregoing document and all attachments referenced therein were served upon the following individuals via electronic mail, an accepted form of service in this case, on this 16th day of December, 2022:

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