



Fulcrum Centerpoint Project – Gary, Indiana

Q&A from November 3, 2021 Public Information Session

1. *Has an Environmental Impact Study been completed? If so, can it be shared with the public?*

Answer: The project is not required to produce an Environmental Impact Assessment or Statement (EIS). This type of environmental assessment is required for large-scale federal projects such as airports, federal buildings, military complexes, highways, etc. under a federal law entitled the National Environmental Policy Act, 42 U.S.C. § 4321-4370m. However, we appreciate that the community would like to understand the full scope of potential environmental impacts. Fulcrum will continue to hold community information sessions for residents of Gary and the next one will be scheduled before the end of 2021 to provide further information on the project's environmental impacts and benefits. Details for the meeting are being finalized and a meeting notice will be provided on the City's website and to interested stakeholders.

2. *Does this project have the blessing of the Dept of Sustainability & Environmental Affairs?*

Answer: Fulcrum has spoken with the City of Gary's Department of Sustainability & Environmental Affairs, and we are engaged with them and all other applicable City Departments to ensure Fulcrum is meeting all its obligations with regarding to environmental permits and approvals.

3. *What is the status of the Reno, NV operation?*

Answer: Fulcrum's facility near Reno, NV (the Sierra BioFuels Plant – or "Sierra") is in the process of starting up operations right now. We are expecting to produce fuel by the end of 2021. Fulcrum will continue to share updates regarding the status of Sierra's operations with the City officials and the community.

4. *What impact will the facility have on the environment, air and water? What by-products are associated with production and how are they handled?*

Answer: The environmental impacts, including waste and by-products, and how they will be managed are summarized on slide 11 of the presentation (attached). The facility will be regulated and monitored under a number of permits, including an air permit, solid waste permit, wastewater discharge permit (to Gary Sanitary District), storm water permit and City building permits.

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project's environmental impacts and benefits. Details for the meeting are being finalized and a meeting notice will be provided on the City's website and to interested stakeholders.

5. *Have you prepared a hazard analysis of the waste to fuel process for the city of Gary? Do you intend to ask IDEM for an incineration permit? What kind of specialized training would be required for workers in this facility?*

Answer 1: A very detailed Hazard and Operability Study (HAZOP) analysis will be conducted for the Centerpoint BioFuels Plant (Centerpoint) during the detailed engineering phase and prior to the completion of construction. This has been conducted for Fulcrum's Sierra facility and it analyzes every part of the process to determine where deviations from the designed operation can occur as well as what those causes and consequences might be. Improvements are then made to the process in order to improve the safety and operation of the facility. These learnings from the Sierra facility will be incorporated into the design for Centerpoint.

Answer 2: The Centerpoint biorefinery WILL NOT be incinerating anything – feedstock or waste. It is not a waste incinerator and therefore an incinerator permit is not applicable.

Answer 3: The Centerpoint biorefinery will require a range of skilled workers including heavy equipment operators (front end loaders, forklifts, etc.), process operators, maintenance technicians and truck drivers. Given the existing industrial facilities in the area, some Gary residents may possess suitable skills/qualifications. For those who don't, Fulcrum has committed to working with local technical colleges (e.g. Ivy Tech Community College) on upskilling and training opportunities and we have started to develop a plan with the City for this.

6. *Where is the Illinois facility located? Proximity to residential housing?*

Answer: A site for the Illinois Feedstock Processing Facility (FPF) has been identified in the Hampshire area adjacent to I-90. The closest residences are under half a mile away, which is closer than the nearest residents to the Centerpoint biorefinery site in Buffington Harbor, where the closest houses are nearly three-quarters of a mile away (Indiana Harbor) and the nearest Gary residents are roughly two miles away (south of the airport and I-90).

7. *Will Fulcrum be able to provide the public with a complete Environmental Impact Study which is necessary to gauge ALL environmental impacts? And what phase will you be providing this document?*

Answer: As noted above in response to Question #1, the project is not required to produce an EIS. However, we appreciate that the community would like to understand the full scope of potential environmental impacts. Fulcrum will continue to hold community information sessions for residents of Gary and the next one will be scheduled before the end of 2021 to provide further information on the project's environmental impacts and benefits. Details for the meeting are being finalized and a meeting notice will be provided on the City's website and to interested stakeholders.

8. *How far is the plant from a water source? Has IDEM approved a permit to allow the discharging of chemicals into a water source?*

Answer: American Indiana Water supplies the City of Gary with potable water from a Lake Michigan intake located near Ogden Dunes. The water extracted from the lake is treated at a plant near Borman Park in Gary to meet requirements of the federal Safe Drinking Water Act before it is distributed. American Indiana Water regularly tests its water, publishes those results, and submits those results to IDEM. It is important to note that the Centerpoint biorefinery WILL NOT directly discharge anything into Lake Michigan or any other water source. All the wastewater from the facility will be treated in an onsite wastewater pre-treatment plant, before being sent to the Gary Sanitary District's (GSD) wastewater treatment plant for further treatment pursuant to GSDs NPDES permit. Furthermore, the facility will receive treated effluent/recycled water from GSD for its process water (instead of potable water). This should result in a net decrease in the amount of treated effluent discharged from the GSD treatment plant.

9. *If your Reno facility is not operational now, how can you say that you can process garbage safely and with no negative environmental outcomes (toxins, explosions, etc)? We need to have facts that support your statements.*

Answer: The Centerpoint biorefinery WILL NOT be processing any garbage. Garbage, also referred to as Municipal Solid Waste (MSW) will be processed into a high spec feedstock for the biorefinery elsewhere at two dedicated FPFs. One FPF will be located in Illinois and the other about 20-30 miles south of Gary. The Centerpoint biorefinery WILL NOT incinerate or burn any feedstock or waste. The biorefinery is being designed with several control technologies to minimize and control emissions of NOX, VOCs, CO and PM, which are the main categories of air emissions (as the facility does not incinerate feedstock or waste, it will not emit dioxins). Air emissions will be below "major source" thresholds, which is why the facility is eligible for a "synthetic minor" air permit.

Operations at Sierra are starting up now and first fuel is expected to be produced by the end of this year (2021). A detailed Hazard and Operability Study ("HAZOP") has been conducted for Sierra, which evaluates the process and identifies improvements for safety and operation of the facility. Those improvements identified for Sierra will be incorporated into the design for Centerpoint. An additional HAZOP will be conducted for Centerpoint during the detailed engineering phase.

Construction of the Centerpoint biorefinery facility will not start until well after Sierra has been operating. Fulcrum will not finance or construct Centerpoint if there are operational issues or concerns regarding Sierra. Lenders/investors would not take that risk, nor would Fulcrum.

10. *Your Technical Overview chart is theoretical right now, is it not?*

Answer: Fulcrum's process was demonstrated and proven in 2014 using a process demonstration unit, which demonstrated the process for 120 days continuously.

All of the equipment used in the process (gasification, etc.) is commercially proven at scale and each comes with vendor performance guarantees.

The Sierra BioFuels Plant was also debt financed in 2017, which raised over \$250 million for the construction of the facility. This would not have been possible if the process was theoretical or experimental.

11. *How will the harbor and Lake Michigan be impacted by this process? We are tired of industry dumping toxins into the lake and exceeding variances violating the Clean Water Act. More industry on the lakefront could be a tipping point for our most precious resource. Why give up on tech possibilities jobs for more of the same in an environmental justice hot spot? There's no plan for a plant in Carmel or Fishers, only Gary, a community of color. Jobs in tech or to clean up the existing blight and pollution in Gary is much more preferable for the Region!*

Answer: Centerpoint WILL NOT be directly discharging anything into Lake Michigan or any other water source. All the wastewater from the facility will be treated in an onsite wastewater pre-treatment plant, before being discharged to the Gary Sanitary District's (GSD) wastewater treatment plant for further treatment. The Facility will then receive treated effluent/recycled water from GSD for the process (instead of potable water). This should result in a net decrease in the amount of treated effluent discharged from the GSD treatment plant.

The facility will be regulated and monitored under a number of environmental permits, including an air permit, solid waste permit, wastewater discharge permit (to Gary Sanitary District), storm water permit and City building permits.

Fulcrum selected the site in Gary due to its existing heavy industrial zoning, road and rail connections, and the infrastructure available in close proximity to the site – utilities, industrial gas pipelines and wastewater treatment.

12. *When do you expect IDEM to finalize your air permit?*

Answer: Fulcrum is expecting IDEM to publish a draft permit for public comment in early December 2021.

13. *Does your system control volatile organic compounds? Do you have VOC emission sources? If so, which ones?*

Answer: Yes. VOCs are controlled by the boiler and the flare, which have a destruction efficiency of greater than 96%. Our main VOC emission sources are the boiler, heaters for gasification, flare, and product storage tanks.

14. Are the wetlands considered dune and swale habitat? Also, please explain again why this does not require Major New Source review for air? Also, why is there no National Pollution Distribution Elimination System required for wastewater?

Answer: There are approximately 2.3 acres of wetlands on the eastern end of the property, which will not be disturbed. These wetlands are not dune and swale habitat.

A National Pollution Distribution Elimination System (NPDES) permit is not required for the wastewater discharge under the federal Clean Water Act as the facility's wastewater will be pre-treated on site and then sent via City sewer to the Gary Sanitary District's wastewater treatment plant. The Facility will then receive treated effluent/recycled water from GSD for the process (instead of potable water). This should result in a net decrease in the amount of treated effluent discharged from the GSD treatment plant.

The GSD's wastewater treatment plant is subject to a NPDES permit.

15. What is the proximity to residential water sources or residential life in Reno, or at the proposed Illinois facility?

Answer: The Sierra FPF and biorefinery are both located relatively close to the Truckee River, which connects Lake Tahoe and Pyramid Lake in Nevada. The Sierra FPF is also located close to the community of Lockwood, NV.

The proposed FPF in Illinois will likely be located next to I-90 in the Hampshire, IL area. The closest residents are just under 2,000 feet from the property.

16. How long would construction of said facility take?

Answer: Approximately 24 months.

17. What is the permitting/oversight process? IDEM? What would their role be in enforcement of EPA standards around air and water quality issues?

Answer: The permitting/oversight process is outlined on slide 12 of the attached presentation. IDEM will be responsible for enforcing EPA standards.

The facility will be regulated and monitored under a number of permits, including an air permit, solid waste permit, wastewater discharge permit (to Gary Sanitary District), storm water permit and City building permits.

18. Why did you decide to cancel plans for a similar plant in Ohio?

Answer: Fulcrum has never had plans for a project in Ohio.

19. *The price of biofuels will see a significant spike when you calculate the cost of research and future installation into the equation. As of now, biofuel prices are comparable with gasoline – constantly rising prices may make the use of biofuels as harsh on the economy as the rising gas prices are doing right now. So what economic impact do you see and when?*

Answer: The fuel produced by Fulcrum will be sold to its customers at comparable prices to traditional jet fuel.

20. *Where is the process demo unit?*

Answer: The process demonstration unit was located in Raleigh, NC. It was established to demonstrate and prove the reliability and safety of the process and was operated continuously for 120 days. It was then disassembled following the successful demonstration.

21. *You called your operations "contaminant free" - no matter what way you brand it, you're still refining poisonous trash, which releases pollutants. Gary has already long suffered the impacts of pollution and environmental injustice. Can you walk us through all the pollution controls you will deploy to safeguard communities and workers against the impacts of your operations?*

Answer: The Centerpoint biorefinery will convert a pre-processed feedstock into fuel. The feedstock is made up of the non-hazardous organic, carbon-based components of household waste, including paper, cardboard, textiles, timber, and some plastics. The processing of waste into feedstock will occur outside of Gary at two dedicated FPFs – one in Illinois and one 20-30 miles south of Gary.

Gasification of the feedstock into a synthesis gas (syngas) does not release pollutants from the feedstock into the air. The syngas is cleaned to remove contaminants such as sulfur, chlorine, and metals – all of which are captured and appropriately handled and treated. For instance, sulfur is removed as sulfur cake and sold. Chlorine and metals are removed from the syngas in a wastewater stream and sent to the wastewater pre-treatment plant, which then connects to the Gary Sanitary District's wastewater treatment plant for further treatment.

The cleaned syngas is then converted into a crude oil substitute before being upgraded into jet fuel. This fuel is free of sulfur and particulate matter, making it a far cleaner product than traditional fossil jet fuel in addition to reducing greenhouse gas emissions.

A summary of the pollution controls that will be used in the facility is outlined on slide 11 of the attached presentation. Fulcrum would welcome the opportunity to meet with any interested individuals to discuss this in more detail.

22. *Are plastics and household food waste part of feedstock?*

Answer: There are some plastics and food waste in the feedstock, to the extent they are in household MSW that is collected and sent to landfill.

23. *Is Fulcrum being asked to commit to any environmental projects in Gary (tree planting, green infrastructure projects, green space development, etc.)?*

Answer: Fulcrum would welcome the opportunity to support environmental projects in Gary and encourage anyone with ideas or suggestions to contact us.

24. *What is Fulcrum's position on unions/organizing?*

Answer: Fulcrum has engaged with the Northwestern Indiana Building and Construction Trades Council and will continue to consult with stakeholders in relation to labor-related decisions.

25. *Would like to be sure jobs are available for locals beyond the blue collar level?*

Answer: Fulcrum has made binding commitments to prioritize hiring of Gary residents for operations (long-term) and for construction (short-term). Fulcrum has also committed to working with local technical colleges (e.g. Ivy Tech Community College) to facilitate training and skills development (including beyond the blue collar level) for Gary residents and we are working on a plan for that now with the City.

26. *What was done with the feedstock produced at the Nevada FPF?*

Answer: Prior to the biorefinery starting operations, any feedstock that was produced at the Sierra FPF was sent to landfill. It was not stored or stockpiled.

27. *In the event of an accident, what is Fulcrum's liability to the City and communities of Gary? What is your emergency plan for when your operations go wrong?*

Answer: Fulcrum will be responsible for accidents that occur at the facility it causes and will have appropriate insurance for such unlikely events. An Emergency Response Plan has been developed and will be publicly available when the solid waste permit application is filed with IDEM (expected in November 2021).

28. *Is there any information on the jet fuel emissions from this source as opposed to other jet fuel sources?*

Answer: The following link provides a good overview on the emissions of sustainable aviation fuel relative to fossil jet fuel:

https://aviationbenefits.org/media/166152/beginners-guide-to-saf_web.pdf

The sustainable aviation fuel that Fulcrum produces achieves a greater than 80 percent reduction in greenhouse gas emissions over the lifecycle compared to traditional fossil jet fuel. This reduction has been certified by the California Air Resources Board.

29. *So the feedstock produced since 2018 has been stored to be processed by the Reno fuel facility when it goes online at the end of this year?*

Answer: No. Any feedstock produced at the Sierra FPF was sent to landfill. No feedstock was stored or stockpiled. As the biorefinery starts up operations, the FPF will begin producing feedstock.

30. *What about stormwater run-off on the site? How will that be handled? Does that go to GSD as well?*

Answer: Centerpoint will have a storm water management plan and a storm water permit from the City of Gary. Storm water will be collected in a storm water detention pond on site.

31. *Jet fuel is fungible. Can you swap your contracted fuel with other providers so the fuel you produce goes to the Gary airport rather than being sent via train somewhere else? This would reduce train traffic, which is already a problem, and the associated environmental impacts.*

Answer: Fulcrum will have to discuss this with its offtake customers. Ultimately, the fuel will be sent to where they need it. If the fuel is sent offsite via rail, it will be a relatively small volume and frequency (~4 tank cars a day) so the cumulative impact on the rail system in NWI will be minimal.

32. *What can Fulcrum contribute to our Gary greenspaces to combat the effects of the hazardous pollutants that our residents will endure... what can Fulcrum offer to our greenspaces?*

Answer: Fulcrum would welcome the opportunity to support environmental projects in Gary, and in particular greenspaces. Anyone with ideas or suggestions are encouraged to contact Fulcrum at fvanewijk@fulcrum-bioenergy.com.