

**FINDING OF NO SIGNIFICANT IMPACT
FOR
LITHIUM-ION BATTERY RECYCLING TO PRODUCE BATTERY-GRADE RAW
MATERIALS
CIRBA SOLUTIONS
LANCASTER, OHIO
DOE/EA-2213**

RESPONSIBLE AGENCY: U.S. Department of Energy (DOE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE completed the Final Environmental Assessment (EA) for Cirba Solutions - Lithium-Ion Battery Recycling to Produce Battery-Grade Raw Materials (DOE/EA – 2213). Based on analyses in the EA DOE determined that its Proposed Action - awarding a grant to Cirba Solutions to partially fund the expansion of their existing lithium-ion battery (LiBs) recycling facility - would result in no significant adverse impacts. DOE further determined that there would be beneficial impacts to socioeconomics, environmental justice, greenhouse gas emissions reduction, and electric vehicle (EV) and lithium-ion battery industries from implementation of Cirba Solutions' proposed project.

BACKGROUND: As part of the Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Law; Public Law 111-58), DOE's National Energy Technology Laboratory (NETL), on behalf of the Office of Manufacturing and Energy Supply Chains and the Office of Energy Efficiency and Renewable Energy, jointly issued the Funding Opportunity Announcement (FOA) DE-FOA-0002678 Bipartisan Infrastructure Law (BIL) Battery Materials Processing and Battery Manufacturing. The BIL appropriates more than \$62 billion to the DOE to deliver a more equitable clean energy future to the American people and will invest more than \$7 billion in the battery supply chain over the five-year period encompassing fiscal years (FYs) 2022 through 2026.

Cirba Solutions' expanded facility would support a circular economy in the LiB industry in the U.S. and anticipated growth in the EV and hybrid-electric vehicle industries. If approved, DOE would provide \$74,999,925 in financial assistance in a cost-sharing arrangement with the project proponent, Cirba Solutions, which will provide \$159,970,351 towards the total project cost.

Based on the scope of the Proposed Project, DOE prepared an EA to evaluate potential environmental and socioeconomic consequences of providing financial assistance for the proposed project in accordance with the requirements of the National Environmental Policy Act (NEPA), as amended (42 U.S.C. 4321 et seq.), the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR Parts 1500 to 1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

PURPOSE AND NEED: The overall purpose and need for DOE action pursuant to the Office of Manufacturing and Energy Supply Chains in collaboration with the Office of Energy Efficiency and Renewable Energy and the funding opportunity under the BIL is to accelerate the development and production of a resilient supply chain for high-capacity batteries by increasing investments in battery materials processing and battery manufacturing projects. This and other selected projects are needed to maximize benefits of the clean energy transition as the nation works to curb the climate crisis. These projects would meet the objective of recruiting, training, and retaining a skilled workforce in communities that have lost jobs due to displacement of fossil fuel-based energy jobs. The proposed project will also meaningfully assist in the nation's economic recovery by creating manufacturing jobs in the United States in accordance with the objectives of the BIL. The funding received from BIL will make this project (and others) possible.

DESCRIPTION OF THE PROPOSED ACTION: DOE's Proposed Action is to provide a grant to Cirba Solutions in a cost-shared arrangement to partially fund Cirba Solutions' proposed project to expand their industrial scale spent lithium-ion battery (LiB) recycling facility in Lancaster, Ohio ('proposed project' or 'Facility'). The Facility expansion would consist of retrofitting an existing building at the current Cirba Solutions Facility to increase LiB processing capacity, as well as developing new buildings to house advanced hydrometallurgical processing lines, which will allow for more refined processing of spent LiBs. Once expanded, the Facility would produce enough battery precursor materials to supply over 100,000 EVs annually.

The facility expansion would occur within Cirba Solutions' existing industrial facility, which is located in an existing industrial neighborhood of Lancaster, Ohio. The overall Facility footprint on the property would be expanded from 10.9 acres to 31.7 acres and include new buildings, parking areas and other paved surfaces, a rail spur, stormwater management infrastructure, and landscape plantings. The proposed project would create approximately 100 construction jobs and up to 100 new full-time jobs with benefits, increasing the full-time workforce at the facility to 150 employees during operations.

ALTERNATIVES CONSIDERED: In addition to the Proposed Action, DOE considered the No-Action Alternative as required under NEPA. Under the No-Action Alternative, DOE would not provide funds for the Proposed Project. It is Cirba Solutions' intent to proceed in the absence of DOE funding, and DOE recognizes that this project might continue if DOE decides not to provide financial assistance. If DOE's selected projects proceed without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's action alternative. To allow a comparison between the potential impacts of the projects to be implemented and the impacts of not proceeding with the projects, for purposes of the EA, DOE assumed that the proposed project would likely not proceed without DOE assistance. The baseline of potential impacts in this case would involve Cirba Solutions continuing to operate their existing Lancaster facility with no new construction or modifications to the facility's scope, size, footprint, or operational outputs.

ENVIRONMENTAL CONSEQUENCES: DOE considered the potential effects of the Proposed Action and No-Action alternative on 18 environmental resource areas in preparation of the EA; however, not all resource areas were evaluated at the same level of detail. DOE determined that community services, parks and recreation, aesthetics and visual resources, and land use were resource areas that would either not be affected or would sustain negligible impacts from the proposed project and thus were dismissed from detailed analysis in the EA. The areas that DOE evaluated in more detail included socioeconomics, environmental justice, wetlands and floodplains, cultural resources, air quality, greenhouse gases, noise and vibration, geology, topography, and soils, surface water and groundwater, vegetation and wildlife, regulated wastes (solid and hazardous wastes), utilities and energy use, transportation and traffic, and human health and safety. For these areas, DOE determined there would be negligible or minor potential environmental impacts.

Socioeconomics: The Proposed Project would provide approximately 100 jobs during the construction period, which would be hired from the local population, and Cirba Solutions would demonstrate a preference for contracting with local companies. Once operational, the Proposed Project would initially create approximately 100 new FTE jobs, increasing the workforce to approximately 150 permanent jobs at full capacity. Labor requirements for the Facility are not expected to change drastically as most jobs would be in advanced manufacturing operations, which is already represented in the region. No substantial influx in population is expected, therefore the impact to housing demand, public services, and resources would be expected to be minor and beneficial.

Environmental Justice: The proposed project supports DOE's stated EJ policy priority to increase clean energy jobs, the job pipeline, and job training for individuals from disadvantaged communities. While the Proposed Project site is not within a disadvantaged community, Cirba Solutions is committed to promoting benefits for communities in the greater Lancaster, Ohio area. Through Equity Plans developed by Cirba Solutions that include development of a Community Engagement Plan organizing various existing and planned community outreach activities that support the City of Lancaster and surrounding area, the proposed project is anticipated to provide short and long-term benefits to disadvantaged communities in the vicinity, and therefore have both a short and long-term beneficial impact on environmental justice and equity.

Wetlands and Floodplains: Due to the absence of regulated sensitive aquatic resources, including jurisdictional wetlands, waters, and floodplains within the proposed project site, construction and operations are anticipated to have negligible impacts on wetlands and floodplains.

Cultural Resources: The proposed project site lies within the cultural area of five federally recognized Tribes including the Delaware Nation of Oklahoma, the Delaware Tribe of Indians, the Eastern Shawnee Tribe of Oklahoma, the Miami Tribe of Oklahoma, and the Seneca-Cayuga Nation. The nearest site listed on the National Register of Historic Places (NRHP) is the Fairfield County Children's Home, located approximately 0.75 miles northwest from the site

boundary. Consultation with the Ohio State Historic Preservation Office (SHPO) and federally recognized tribes on April 27, May 6, May 10, May 22, and May 22, 2023, resulted in responses from both the Ohio SHPO and Delaware Nation of Oklahoma indicating that the proposed project would have no effect on properties listed in or eligible for listing in the NRHP and that the proposed project should have no adverse effect on known cultural resource sites of interest to the Delaware Nation. Due to the absence of sensitive resources of historic, cultural or tribal interest at the site, the Proposed Project would have negligible impact on cultural and historic resources.

Air Quality: The Proposed Project's operational impacts to air quality are subject to a Clean Air Act Title V Operating Permit issued by the Division of Air Pollution Control of the Ohio Environmental Protection Agency (OEPA). The Title V permit for the proposed project would address increased emissions from operations associated with entire expanded facility, by setting acceptable emissions limits and increasing the monitoring and reporting requirements at the Facility to demonstrate that emissions control devices are continuously operating. Any increase in emissions to ambient air resulting from operations of the Proposed Project would be minor and consistent with current activities performed and permitted at the existing facility.

Greenhouse Gases: The Proposed Project would incur a net-positive, long-term impact to global climate and greenhouse gas emissions through contributions to decarbonizing U.S. transportation, which would markedly outweigh Proposed Project GHG emissions. Cirba Solutions estimates that production levels at the Proposed Project site would produce sufficient raw material to create lithium-ion batteries for 100,000 EVs annually. It is expected that these EVs would primarily replace conventional gasoline and diesel-fueled vehicles, resulting in a proportional reduction in GHG emissions (primarily carbon dioxide [CO₂]). Using estimates generated by the United States Environmental Protection Agency, replacing 100,000 conventionally fueled vehicles with EVs would eliminate an estimated 460,000 metric tons of CO₂ annually for every year that an EV displaced a comparable fossil fuel vehicle. Over the course of the first five years of operation, batteries produced using material generated at the proposed project site would be expected to eliminate 6,900,000 metric tons of CO₂ emissions. The CO₂ emissions figures above assume that the number of EVs on the road made possible from Cirba's facility would be "additive" each year, and that each of those vehicles would remain on the road for five years. 100,000 new EVs would be produced each year and added to the number of EVs still on the road from prior years. This emissions reduction would be expected to far exceed any emissions anticipated from construction and operations of the Proposed Project during its operational lifetime.

Noise and Vibration: Typical construction noise would be generated during the construction phase of the project. Operational noises outside the new buildings would come primarily from ventilation and air conditioning installed externally on facility structures and industrial activities around enclosed facility structures, such as truck and employee-vehicle traffic and a possible incremental increase in rail traffic. As the proposed project is located within an existing industrial area with other industrial tenants with mechanical and traffic-related noises, any

increase in noise from operations of the proposed project over ambient conditions would be minor.

Geology, Topography, and Soils: The proposed project would have minor direct, long-term impacts on geology, topography, and soils. Soil loss and erosion are the major factors for consideration and management during the proposed project, and best management practices would be implemented during construction and operations to effectively prevent effects to soil resources. These include: stormwater training for onsite personnel, use of erosion control blankets where soil would otherwise be exposed, avoidance of excessive soil stockpiling where soil is exposed to wind and rain, a sediment settling basin as part of the stormwater and erosion runoff control program, use of water and dust palliatives on soils that are temporarily exposed to erosive elements, and proper use of temporary or permanent landscaping to hold soils in place and prevent unwanted soil movement. Proposed construction is limited to surface and near-surface activity which is not anticipated to affect minerals and deeper geological strata. Seismic activity in this region is negligible and would be adequately addressed through compliance with local building codes.

Surface Water and Groundwater: Construction and operation of the proposed project would have a minor, temporary and long-term, indirect impacts on surface waters. The site is approximately 30.5% impervious surface, with stormwater runoff directed to a stormwater management basin (approximately 0.86-acre) which directs overflow away from the existing Facility in a south and westerly direction towards Pleasant Run, through offsite drainage culverts and storm water swales. Construction of the proposed project would have a minor, temporary, indirect impact on surface waters, from direct run-off during rain events. Potential impacts to surface waters from direct runoff would be minimized through implementation of a SWPPP and BMPs, required by the Ohio EPA General Permit for Stormwater Discharges Associated with Construction Activities. Operation of the proposed project would include increased production of wastewater, which would have direct, minor long-term impacts on surface waters. Cirba Solutions would also continue to pre-treat certain process wastewaters prior to discharge, using the existing facility wastewater pretreatment system, to further ensure discharge requirements are met. Because all process water would be discharged to the POTW, and effluent discharged from the POTW must meet water quality criteria set out in NPDES Permit No. OH0026026, negligible impacts to the Hocking River would be anticipated from proposed project operations.

The impact of proposed project construction on groundwater would be negligible and operations would have a minor, long term, direct impact on groundwater resources. There are no known or proposed wells on the proposed project Site. Infiltration of a small portion of this precipitation (3 to 16 inches) recharges the groundwater aquifers in the region. No discharges to land are anticipated during construction, and stormwater discharges would comply with the requirements of the Ohio EPA General Permit for Stormwater Discharges Associated with Construction Activities. Given the low potential for discharges during operations to reach groundwater and the limited increase in groundwater resources that Cirba Solutions' water requirements represent

in terms of the City's available water capacity, proposed project operations would have a minor, long term, direct impact on groundwater resources.

Vegetation and Wildlife: The proposed project site contains minimal vegetation, rather it is dominated by developed impervious surface as well as fallow, undeveloped land. Grading and site development during construction would cause localized removal of topsoil and reduce the extent of vegetation at the site; however, the quality of this topsoil has been diminished after years of intensive agricultural cultivation and the magnitude of this loss is small when compared to the extent of vegetated land in the vicinity of the project site. As a result, impacts to vegetation from proposed project construction are anticipated to be direct, minor and long-term, and operations of the proposed project is not anticipated to create any additional impacts to vegetation.

No federally listed endangered or threatened species have been observed or documented on the site, nor does the site contain designated critical habitat for any listed species. The United States Fish and Wildlife Service (USFWS) responded to the DOE's request for consultation stating, "due to project type, size, and location we do not anticipate adverse effects to federally endangered, threatened, or proposed species or designated critical habitat."

Regulated Wastes (Solid and Hazardous Wastes): Construction is expected to generate negligible impacts from regulated waste. Solid waste and sanitary waste generated during construction activities would be limited to common construction-related waste streams which existing landfills or recycling facilities will have the capability and capacity to accept. Operations are expected to incur minor, long-term impacts from regulated wastes, including certain non-hazardous waste streams and oil. The quantity of hazardous waste generated by the proposed project would determine the Facility's updated generator status and which Federal and State regulations related to waste generation, management, and disposal would be applicable. The proposed project would have a negligible impact on the overall quantity of hazardous waste generated and the amount of waste that would require offsite treatment and disposal. Cirba Solutions intends to continue to recycle or reuse byproducts and non-hazardous waste to the extent possible, minimizing the amount of waste disposed of offsite.

Utilities and Energy Use: Construction of the proposed project would have short-term negligible impacts on local utilities and energy use because during construction, the expanded site would rely on portable generators water tanks and portable bathroom rather than local utility connections. Operation of the proposed project would have long-term, direct minor impacts on local utilities, as the expanded industrial processes involved would increase the demand for electricity, potable water, natural gas, and wastewater services at the proposed project site. However, despite the increase in demand, the proposed project is not expected to adversely affect local utilities, as the Cirba Solutions facility would continue to connect to the local electricity provider and publicly owned treatment works, and demand for potable water is not anticipated to have an adverse impact on availability for other users.

Transportation and Traffic: Construction would have short term but measurable minor adverse impacts to traffic lasting up to 24 months. Operations would generate a minor long-term increase in anticipated daily truck and personal-vehicle traffic resulting from the expected 57 additional truck trips per day over existing traffic for delivery and shipments. Trucks would use the established road network to access the Project site, and these roadways are designed for and currently accommodate industrial truck traffic. Once fully operational the Facility would add approximately 150 new employees and there would be a corresponding daily increase in the number of personal vehicles at the site; however, the number of personal vehicles is expected to be distributed throughout the day, as the project would be operated in three shifts, and Facility design includes adequate parking, loading and maneuver space for these vehicles.

Public and Occupational Health and Safety: Risks to public and occupational health and safety from proposed project construction and operations are expected to be minor, direct and indirect, and long-term. Cirba Solutions Facility is subject to numerous regulatory permitting requirements and planned mitigations addressing factors relevant to public and occupational health and safety, and Cirba Solutions' existing corporate policies further address relevant health and safety risk factors and would be followed throughout construction and operations. Materials used during operation of the proposed project would include sulfuric acid, sodium hydroxide, potassium persulfate, sodium phosphate, sodium fluoride, monosodium phosphate, calcium hydroxide, calcium oxide, calcium carbonate, sodium carbonate, sulfur dioxide, hydrogen peroxide, D2EHPA, Versatic 10, Cyanex 272, Orpofom SX, diatomaceous earth filter aid, Metalsorb mixture, clay-based flocculant, and activated carbon. To reduce risk, the materials would be received via railcar and/or truck within the designated receiving area, allowing for strictly controlled and consistent management. Cirba Solutions will continue to incorporate emergency policies and procedures, required health, safety, and security training, and specialized training for individuals handling hazardous materials and wastes at the Facility. Cirba Solutions also maintains a current Contingency Plan for implementation in the event of an unintended release.

PUBLIC AVAILABILITY: DOE issued the Draft EA and advertised its release in the *Lancaster Eagle-Gazette* on July 30 through August 1, 2023. In addition, DOE sent copies for public review to the Fairfield County District Library (Main Branch) in Lancaster, Ohio. DOE established a 30-day public comment period that began on July 30, 2023, and ended August 28, 2023. DOE announced it would accept comments by mail, phone, and email. All comments received are located within the appendices of the Final EA.

The Draft EA was distributed to various federal, state, and local agencies with jurisdiction or special expertise. During development of the Draft EA, and prior to the public comment period, DOE initiated consultations with the responsible USFWS field office in Columbus, Ohio, and the Ohio History Connection, which serves as the Ohio SHPO. DOE also initiated consultations with the Delaware Nation, Delaware Tribe of Indians, Miami Tribe of Oklahoma, Eastern Shawnee Tribe of Oklahoma, and the Seneca-Cayuga Nation through each Tribal Nation's Tribal Historic Preservation Office. Through these consultations, DOE provided information about the

proposed project and solicited input for consideration both prior to finalizing and releasing the Draft EA for public comment and then again concurrent with the public release of the Draft EA.

Consultation with the FWS was completed on May 25, 2023, via a written acknowledgement from the FWS of DOE's determination that the proposed project would have no effect on listed species or their designated critical habitat.

The Ohio SHPO concluded, in a response letter dated May 10, 2023, that based on the information submitted by the DOE the Proposed Project will have no effect on properties listed in or eligible for listing in the NRHP. In a letter dated May 11, 2023, the Delaware Nation Historic Preservation Department stated they "concur with the SHPO that the proposed project should have no adverse effect on any known cultural or religious sites of interest to the Delaware Nation, but there is always the potential for discovery of archaeological resources in this area. Should the scope of the project be amended to include any additional ground-disturbing activity, you will need to reinitiate consultation with our office." Cirba Solutions intends to implement the Project-specific Inadvertent Discovery Plan attached in Appendix 5 of the Final EA to address the potential for inadvertent discovery during project construction of unknown archaeological resources.

PUBLIC COMMENTS: No comments were received from individuals of the general public. As discussed in the "Public Availability" section, comment letters were received directly from the Ohio SHPO (Ohio History Connection), USFWS (Ohio Ecological Services Field Office), and the Delaware Nation. These comments are acknowledged, addressed in the text, and included in Appendix 2 of the Final EA.

MITIGATION REQUIREMENTS: No additional mitigation measures beyond those contained in permits obtained or to be obtained by Cirba Solutions from the appropriate permitting authorities are required.

DETERMINATION: Based on information presented in the Final EA (DOE/EA-2213), DOE finds that the Proposed Action to provide a grant to Cirba Solutions would not significantly affect the quality of the physical, biological, or human environment. Therefore, preparation of an Environmental Impact Statement is not required, and DOE is issuing this FONSI.

Copies of the Final EA and this FONSI are available at DOE's NETL EA website at: <https://netl.doe.gov/node/6939>. The EA and FONSI are also available at DOE's NEPA – EA website at <https://www.energy.gov/nepa/doe-environmental-assessments>.

Copies of the Final EA and FONSI can also be obtained by sending a request to:

Mr. Stephen Witmer
NEPA Compliance Officer
U.S. Department of Energy
National Energy Technology Laboratory
626 Cochran Mill Road
M/S 921-227
Pittsburgh, PA 15236
412-386-7589
stephen.witmer@netl.doe.gov

Sean I. Plasynski, Ph.D.
Director, National Energy Technology Laboratory (Acting)