

**FINDING OF NO SIGNIFICANT IMPACT
FOR
ELECTRIC DRIVE VEHICLE BATTERY AND COMPONENT MANUFACTURING
INITIATIVE PROJECT
NOVOLYTE TECHNOLOGIES, INC.
ZACHARY, LOUISIANA**

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

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE completed its final environmental assessment (EA) entitled *Novolyte Technologies, Inc. Electric Drive Vehicle Battery and Component Manufacturing Initiative Project, Zachary, Louisiana* (DOE/EA-1719). Based on the analyses in the EA, DOE determined that there would be no significant adverse impacts from DOE's proposed action of awarding a grant to Novolyte Technologies, Inc. (Novolyte) to partially fund its expansion of a plant in Zachary, Louisiana, thereby increasing the plant's capacity to manufacture lithium electrolytes. This expansion would support the anticipated growth in the lithium-ion battery industry and, more specifically, the electric drive vehicle (EDV) industry and hybrid-electric vehicle (HEV) industry. DOE further determined that there could be beneficial impacts to the local economy and reduction in greenhouse gas (GHG) emissions from implementation of Novolyte's proposed project.

BACKGROUND: As part of the *American Recovery and Reinvestment Act of 2009* (Recovery Act) (Public Law 111-5, 123 Stat. 115), DOE's National Energy Technology Laboratory (NETL), on behalf of the Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Program, is providing up to \$2 billion in federal funding under competitively awarded agreements to facilitate the construction of U.S. manufacturing plants (including increases in production capacity at existing plants) to produce advanced batteries and electric drive components.

The federal action of providing funding for these projects, known as the Electric Drive Vehicle Battery and Component Manufacturing Initiative, requires compliance with the *National Environmental Policy Act of 1969* (NEPA) (42 U.S.C. 4321 et seq.), the Council on Environmental Quality regulations (40 CFR Parts 1500 to 1508) and DOE's NEPA implementing procedures (10 CFR Part 1021). Accordingly, DOE prepared an EA to evaluate the potential environmental consequences of providing a grant for this proposed project under the initiative.

PURPOSE AND NEED: The overall purpose and need for DOE action, pursuant to the Vehicle Technologies Program and the funding opportunity under the Recovery Act, is to accelerate the development and production of various EDV systems through building or increasing domestic manufacturing capacity for advanced automotive batteries, battery components, recycling

facilities, and EDV components, in addition to stimulating the U.S. economy. This and the other selected projects are needed to reduce domestic petroleum consumption through investment in and deployment of alternative vehicle technologies. The proposed project would also assist with the nation's economic recovery by creating manufacturing jobs in the United States in accordance with the objectives of the Recovery Act.

DESCRIPTION OF THE PROPOSED ACTION: DOE's proposed action is to provide partial funding for Novolyte's proposed expansion of its current manufacturing plant to increase the plant's production of lithium electrolytes. The expansion would occur in two phases. Phase 1 would expand the existing facility by 3,100 square feet for production and warehouse facilities that will contain a humidity-controlled room; additional process equipment (gas chromatograph/mass spectrometer, ion chromatograph, weigh scales and pumps for a new larger reactor and solvent blend tank, vessel cleaning station, packaged steam boiler, new cooling tower), two 3,000-gallon above-ground process vessels (solvent blend tank, reactor vessel), two 8,000-gallon finished raw material above-ground storage tanks (ASTs) (ethylene carbonate, propylene carbonate), stainless steel shipping vessels, and upgrades of the pot distillation column and the utility transformer that adjusts electrical power for the new equipment. Phase 2 involves construction of 60,000 square feet of new production and laboratory facilities and warehouse space, with a maximum height of 40 feet distillation skids approximately 50 feet high. Additionally, new equipment would include a vessel cleaning station, drum filling station, packaged steam boiler, new cooling tower, salt reactor, salt dryer, nitrogen generation unit, environmental control technology such as a scrubber and thermal oxidizer, five 8,000-gallon ASTs for storage of purified raw materials (ethylene carbonate, propylene carbonate, dimethyl carbonate, diethyl carbonate, ethyl methyl carbonate), five 8,000-gallon solvent blend ASTs, six new reactors, and stainless steel shipping vessels.

The basic manufacturing process involves (1) purification of liquid organic solvents by distillation; (2) blending of liquid organic solvents; (3) blending of a solid inorganic powder into the solvents; and (4) packaging of the product in returnable stainless steel shipping vessels. There are no specific hazards associated with the processing techniques other than those common in working with organic solvents, inorganic powders, and rotating machinery.

Phase 1 would increase production capacity to 4,500 tons per year of electrolyte material; Phase 2 would increase the plant capacity from 4,500 tons to 10,000 tons per year. After completion of the expansion project, Novolyte's facility could supply the amount of electrolytes necessary to produce a minimum of 100,000 plug-in HEV batteries (or an equivalent amount of EDV batteries) per year.

This plant would support anticipated growth in the lithium battery industry and, more specifically, the EDV industry and HEV industry. DOE would provide \$20.6 million in financial assistance in a cost-sharing arrangement with the project proponent, Novolyte. The cost of the project is estimated at \$41.2 million. It is anticipated that 18 permanent jobs would be created.

ALTERNATIVES CONSIDERED: In addition to the proposed project, DOE considered the No Action Alternative as required under NEPA. Under the No Action Alternative, DOE would not provide funds for the proposed project. For the purposes of the EA, DOE assumed that the project would not proceed without DOE funding. This assumption establishes a baseline against which the potential environmental impacts of the proposed project are compared.

ENVIRONMENTAL CONSEQUENCES: DOE evaluated the potential environmental consequences of the proposed project and the No Action Alternative. DOE considered 17 environmental resource areas in the preparation of the EA. However, not all areas were evaluated at the same level of detail. DOE focused more detailed analysis on areas that would require new or revised permits, have the potential for significant adverse environmental impacts, or have the potential for controversy. The areas DOE evaluated in more detail included air quality and GHGs, noise, geology and soils, surface water and groundwater, vegetation and wildlife, solid and hazardous wastes, transportation and traffic, and human health and safety. For these areas, DOE determined there would be potentially minor environmental impacts.

Novolyte's manufacturing activities would include: processing lithium salts, purification and upgrading of liquid organic solvents, producing electrolyte formulations, storing of materials, and cleaning shipping containers. Based on current and projected operations, Novolyte estimated emissions of carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), volatile organic compounds (VOCs), particulate matter (PM_{2.5}, PM₁₀), lead (Pb), total hazardous air pollutants (HAPs), and carbon dioxide (CO₂). DOE does not expect that emissions would increase significantly beyond the current emissions rates. Potential emissions from the proposed project would be a result of fugitive dust from material handling and CO, NO_x, PM, SO₂, and toxic air pollutants from the process equipment. Routine VOC emissions from storage tanks and other vessels such as mixing/blending vessels would be vented to a flare or thermal oxidizer. Emissions from loading and unloading operations would be recovered and treated in the same way. Particulate emissions from the salt dryers would be controlled by a scrubber, cyclone, or bag filter. The facility has complied with its air operating permit. The permitted air emissions limits were established by the Louisiana Department of Environmental Quality (LDEQ) at levels such that deterioration of the surrounding air quality would not occur. The facility, whether as currently operated or as expanded under both phases of the proposed project, is anticipated to remain in compliance. Overall, no measureable adverse impacts to air quality are expected near the Novolyte facility as a result of the Phase 1 or Phase 2 of the proposed project.

In relation to GHG emissions, an increase in the use of advanced batteries would result in reduced reliance on fossil fuels and long-term improvement in air quality through reduced emissions of GHGs (and other pollutants).

Construction activities would result in short-term adverse noise impacts. Phase 1 would involve facility expansion of 3,100 square feet and the installation of various storage tanks, a new cooling tower (or chiller unit), utility upgrades, and indoor industrial handling and process equipment. Phase 2 involves the construction of 60,000 square feet of warehouse, production, and laboratory buildings. Phase 2 would include the installation of storage tanks, a new cooling tower (or chiller unit), new and upgraded utilities, and various other industrial handling and

process equipment. Construction trucks and workers' personal vehicles would add to the regional traffic noise. Approximately 25 to 35 workers would be hired to complete the construction of the facility during Phase 1, and the site would be accessed on average by one construction truck every two days. Approximately 60 to 65 workers would be hired to complete the construction during Phase 2, and approximately four trucks per day would access the site during construction. During the construction phase, noise levels would be localized, intermittent, and temporary. Increases in noise levels during construction would mainly result from the use of heavy equipment and delivery trucks. The typical noise levels from construction would be expected to be within the range of 75 to 90 decibels. Construction noise levels onsite would primarily be limited to the immediate vicinity of the site. Because the property is in an industrial area, sufficiently far from any sensitive noise receptors, the temporary impact from increased noise during construction would be minor.

A minor impact from an increase in noise during Phase 1 and Phase 2 operations would be expected from the new mechanical equipment, and from the increase in truck and employee-vehicle traffic. Most of the mechanical equipment would be located indoors, although some equipment would be outdoors (cooling tower/chiller unit; electrical transformer, distillation units, vacuum pump, etc). New outdoor equipment would not likely cause noise levels to exceed levels generated by the current facility. Together, Phases 1 and 2 are expected to result in an increase of six trucks trips per day to the property, and additional vehicle trips due to the employment of approximately 18 additional people. Because the property is in an industrial area, the impact from operational noise would be minor.

Impacts to geology and soils would be negligible under Phase 1, as expansion of an existing facility would occur on previously developed land. Under Phase 2, a direct permanent adverse impact would occur to soils from the loss of up to 15 acres due to the establishment of impervious surfaces. These impacts, however, would be localized and minor. Best management practices such as sediment control devices and seeding or sodding of temporarily disturbed areas following construction would reduce the potential for adverse indirect impacts such as soil erosion.

Construction and operational activities would have minor temporary impacts from runoff to surface waters, which would be minimized through adherence to its Stormwater Pollution Prevention Plan. The Novolyte facility currently discharges treated wastewater effluent to the Mississippi River and storm water to an unnamed canal that flows to the Baton Rouge Bayou pursuant to Louisiana Pollutant Discharge Elimination System Permit No. LA0004057. The proposed project would cause a minor increase in the amount of stormwater and treated wastewater effluent (less than a 1.4 percent) generated onsite. Treated wastewater effluent would continue to be discharged to the Mississippi River, and stormwater would continue to be discharged to the canal. These discharges would result in minor impacts to the receiving waters, assuming compliance with all permit conditions.

Construction of the Phase 1 and Phase 2 facilities would not occur in areas of existing groundwater contamination; therefore, no impacts are expected with respect to this contamination. To comply with applicable state and federal regulations, the facility operates under a Spill Prevention, Control, and Countermeasures (SPCC) Plan to guide the avoidance, minimization, and response to spills that could affect groundwater. This plan would be modified to accommodate the proposed facilities, resulting in negligible to minor potential for groundwater contamination during construction and operations.

DOE determined the potential impacts associated with groundwater usage would be minor. Novolyte has an existing onsite groundwater well capable of producing more than 184,000 gallons per day (gpd). The process water requirements of the proposed project would be approximately 19,000 gpd, approximately 10 percent of the well's capacity. In general, groundwater levels have shown declines since 1990 in the Chicot Equivalent Aquifer system, which is tapped by Novolyte's well. DOE determined overall impacts to surface waters and groundwater from the proposed project would be minor.

Negligible impacts to vegetation and wildlife are expected from construction of Phase 1. Under Phase 2, a direct adverse impact would occur to vegetation and wildlife from the loss of up to 15 acres of maintained meadow. Construction activities in Phase 2 would require grading and removal of vegetation. The vegetation community is not considered rare or of high value within the region. In addition, this area already experiences human disturbance from mowing; therefore, overall impacts from construction to wildlife would be minor. Following construction, those areas temporarily disturbed would be either seeded or sodded with grass and maintained as lawn. Operation of Phase 1 and Phase 2 is not anticipated to create additional disturbance to vegetation and wildlife other than the mowing of established grassy areas.

Proposed operations at the facility would increase the amounts of materials currently used. A total of 14 new ASTs would be added to the facility under Phase 1 and 2. The ASTs would contain raw material and finished product and would be contained within dikes. As the ASTs would be equipped with secondary containment and Novolyte has a SPCC Plan and emergency procedures in place, DOE determined the potential for impacts from the new tanks is minor.

Novolyte estimates that 1,224 tons per year (tpy) of solid municipal waste would be generated for an increase of approximately 400 tpy. Non-hazardous waste would be collected in containers, dumpsters, or large cloth bags for offsite disposal or for recycling. Additionally, an increase of 116 tpy of hazardous waste would be generated and would be reclaimed or recycled offsite or treated and disposed of at a permitted landfill. DOE determined the potential for impacts from solid and hazardous wastes would be minor.

Short-term but measurable adverse impacts to traffic are expected during construction of Phases 1 and 2 of the proposed project. Approximately 25 to 35 workers would be hired to complete Phase 1, and approximately 60 to 66 workers would be hired for Phase 2. Further, for Phase 1 and Phase 2, one truck every two days and four trucks per day, respectively, would access the site for construction purposes. Construction worker traffic would occur primarily at the beginning and ending of each workday. Construction-related impacts to existing transportation

resources would be minor, temporary, and localized (i.e., limited to the vicinity of the project site) and would be accommodated by the existing road network. The operation of both Phase 1 and Phase 2 of proposed project would generate a minor long-term increase in personal vehicle traffic due to the employment of approximately 18 additional people. These new workers would be split among the four operation shifts, thus reducing impacts on traffic during shift changes.

Materials used and stored at the facility would be similar to those currently used there. There is a potential for hydrogen fluoride (corrosive) to form as a by-product of lithium hexafluorophosphate decomposition; however, this is not expected to occur during normal operations and personnel would be trained to properly respond should fluoride form. DOE determined that with appropriate safety procedures in place and the use of personal protective equipment, the potential for an impact to the health and safety of workers would be minor. It is anticipated that no impact related to health and safety would occur during operations in Phases 1 and 2.

The other environmental areas DOE evaluated for potential impacts were: land use, meteorology, socioeconomics, environmental justice, visual resources, wetlands and floodplains, cultural resources, and utilities and energy use. DOE determined that there would be no potential for adverse impacts for these resource areas or that the impacts would be negligible, temporary, or both. The EA gives the reasons DOE did not conduct more detailed evaluations of these areas.

NO ACTION ALTERNATIVE: Under the No Action Alternative, the project would either be delayed, as Novolyte sought other funding sources, or abandoned altogether. If abandoned, the potential environmental consequences and benefits would not occur.

PUBLIC AVAILABILITY: DOE distributed the draft EA on September 5, 2010, and advertised its release in *The Advocate* on September 5, 6, and 7, 2010. In addition, DOE sent copies for public review to the Zachary Public Library, 1900 Church Street, Zachary, Louisiana 70791. DOE established a 30-day public comment period that began September 5, and ended October 4, 2010. DOE announced it would accept comments by mail, e-mail, and facsimile.

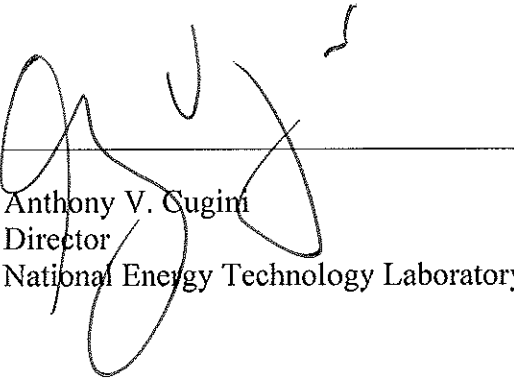
The draft EA was distributed to various federal, state, and local agencies with jurisdiction or special expertise. DOE conducted formal consultations by mail with the Lafayette Ecological Services Field Office of the U.S. Fish and Wildlife Service (USFWS) in Lafayette, Louisiana; the Louisiana Natural Heritage Commission in Baton Rouge, Louisiana; and the Louisiana Historic Preservation Program in Baton Rouge. In each case, DOE received correspondence supporting a determination of no potential impacts to threatened or endangered species and critical habitat, and no potential impacts to properties listed on or eligible for inclusion in the *National Register of Historic Places*.

Copies of the final EA and this FONSI will be sent to stakeholders that provided comments or consultation and will be available on DOE's National Energy Technology Laboratory web site at <http://www.netl.doe.gov/publications/others/nepa/ea.html>.

COMMENTS: Comments were received from the USFWS and the LDEQ on the draft EA. The USFWS commented that the proposed project would have no effect on federal trust resources. The LDEQ requested that the VOC and NO_x emissions calculations be submitted for review. DOE and Novolyte addressed these comments, and responses to the comments are included either in the body of the final EA or in Appendix B.

DETERMINATION: On the basis of the evaluations in the final EA, DOE determined that its proposed action -- to provide a \$20.6 million federal grant for Novolyte's proposed project in Zachery, Louisiana whereby Novolyte would expand its lithium electrolyte manufacturing capacity -- would have no significant impact on the human environment. Although the proposed project would result in air emissions, an increase in noise, loss of soil, use of additional process water, additional wastewater discharge, additional manufacturing wastes, increased traffic, and the use and storage of additional materials, these impacts would be minor. Novolyte would be required to adhere to applicable permit requirements during construction and operations. All other potential environmental impacts identified and analyzed in the EA would be negligible. Therefore, preparation of an Environmental Impact Statement (EIS) is not required, and DOE is issuing this FONSI.

Issued in Pittsburgh, PA, this 21 day of November, 2010.



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