

**FINDING OF NO SIGNIFICANT IMPACT
FOR
ELECTRIC DRIVE VEHICLE BATTERY AND COMPONENT MANUFACTURING
INITIATIVE PROJECT
ENERG2, INCORPORATED
ALBANY, OREGON**

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

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE completed the *Final Environmental Assessment for EnerG2, Incorporated, Electric Drive Vehicle Battery and Component Manufacturing Initiative Project, Albany, OR* (DOE/EA-1718). Based on the analyses in the Environmental Assessment (EA), DOE determined that its proposed action - awarding a federal grant to EnerG2 for the reconfiguration of an existing warehouse into a manufacturing facility - would result in no significant adverse impacts. DOE further determined that there could be beneficial impacts to the local economy and to the nation's air quality and transportation industry from implementation of EnerG2'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, on behalf of the Office of Energy Efficiency and Renewable Energy's Vehicle Technologies Program, is providing up to \$2 billion in Federal funding for 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's regulations (40 CFR Parts 1500 to 1508) and DOE's NEPA implementing procedures (10 CFR Part 1021). 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 are to accelerate the development and production of various electric drive vehicle systems by building or increasing domestic manufacturing capacity for advanced automotive batteries, their components, recycling facilities, and electric drive vehicle components, and stimulating the U.S. economy. This and the other selected projects are needed to reduce U.S. petroleum consumption by investing in alternative vehicle technologies. The proposed project would also assist 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 a grant to partially fund EnerG2's proposed project -- establishment of a commercial-size plant

that would produce nano-structured carbon powder that could be used in manufacturing ultracapacitors and battery anodes. The plant would be setup in Albany, Oregon, and would support the anticipated growth in the electric-drive vehicles industry and hybrid-electric vehicle industry. The existing plant is a 72,000 square foot steel warehouse owned and operated by Oregon Freeze Dry, Inc. The construction phase of this project would partition 36,000 square feet of the warehouse for intermediate production of ultracapacitor energy storage media. Construction would involve installation of process equipment, including a 24-ton carbon dioxide tank and an 11,000-gallon inert compressed gas tank, concrete pads, and some paving. Raw material would be delivered to and freeze-dried in the new facility. Two kilns, which would operate either on electricity or natural gas, would be located in the new facility where the material would be pyrolyzed and activated.

The process converts a solid, polymerized resin to a fine carbon powder with exceptional surface area and specific nanostructure. The plant would also contain related material transport capabilities, utility interconnects, pollution control devices, a packaging line, and finished product handling facilities.

EnerG2's project would be the only plant dedicated solely to the commercial-scale production of synthetic, high-performance carbon electrode material and the only United States facility to manufacture electrode materials for ultracapacitors (a market currently dominated by Japanese suppliers). EnerG2's NC-Series electrode carbon would result in a new generation ultracapacitor with significantly higher power density and much lower cost per kilowatt. With this new product, ultracapacitors could be combined with batteries in electric drive vehicles to reduce capital and battery replacement costs as well as improve mileage efficiency and vehicle performance. The new plant would produce enough NC-Series electrode carbon to power 60,000 EDVs annually.

This plant would support anticipated growth in the lithium-ion battery industry and, more specifically, the electric drive vehicle industry and hybrid-electric vehicle industry. If approved, DOE would provide \$21 million in financial assistance in a cost-sharing arrangement with the project proponent, EnerG2. The total cost of the project is estimated at \$28 million.

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 project can be 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 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, greenhouse gases, noise, geology and soils, vegetation and wildlife, solid and hazardous

wastes, utilities, transportation and traffic, and human health and safety. For these areas, DOE determined there would be minimal potential environmental impacts.

The EnerG2 facility would not be a major source of air pollutants as defined by the National Ambient Air Quality Standards of the Clean Air Act and Oregon Department of Environmental Quality (DEQ) regulations. EnerG2 has determined, however, that it would be required to obtain a modification of the facility's Simple Air Contaminant Discharge Permit. The proposed project would emit trace levels of the following hazardous air pollutants: formaldehyde, methanol, and methyl acetate. Overall, the EnerG2 facility would have a minor adverse impact on air quality as a result of the proposed project. Although air emissions from the facility are measurable, they would result in minimal consequences because of the facility's operating control devices that would be used to limit emissions, and emissions would remain under the Plant Site Emission Limits.

In relation to greenhouse gas emissions, an increase in the manufacture and use of advanced batteries potentially offers the positive benefits of reduced reliance on fossil fuels and long-term improvement in air quality through reduced emissions of greenhouse gases (and other pollutants).

Typical construction noise would be generated. Operational noises outside the building would come primarily from heating, ventilation, and air conditioning unit fans and from vehicle traffic.

A majority of the proposed construction would occur within an existing building, minimizing adverse impacts to soils. Localized soil disturbance may occur from the construction of support structures outside of the existing building (e.g., concrete pads, above-ground storage tank, paving). Overall, construction would not result in adverse impacts to geology and soils. Best management practices such as sediment control devices and seeding or sodding of temporarily disturbed areas following construction would minimize the potential for adverse indirect impacts such as soil erosion.

Operations of the site would have no impacts to vegetation or wildlife resources. Construction would occur within an existing building, minimizing adverse impacts to vegetation and wildlife. Potential staging areas for construction equipment and materials would not likely cause adverse impacts to vegetation as staging areas would occur on existing areas of impervious surface (i.e., parking lots).

During plant operations, EnerG2 would likely generate hazardous waste and would require an Environmental Protection Agency (EPA) Identification Number. Potential hazardous wastes include used oil (from the refrigeration system and from vacuum pumps) that would be recycled, used aerosol cans, used batteries (alkaline, nickel cadmium) and possibly waste ink from product labeling. The quantity of these hazardous wastes generated would not be known until the facility is operational. The process would not generate nano-fibers or nano-tubes, which could be deemed a hazardous waste. The facility would have to submit a Site Identification Form to the Oregon DEQ to notify the DEQ of the quantity and type of hazardous waste the facility would generate on a monthly basis. DEQ is authorized by the EPA to regulate hazardous waste in Oregon. As a generator of hazardous waste, the facility would have to adhere to Oregon DEQ's

regulations as well as applicable Federal regulations under 40 CFR 260-268, 273, 279, and 29 CFR 1910.

Construction and operation of the EnerG2 facility would have a minor impact on the municipal water system (Albany Water System), the municipal wastewater system (Albany-Millersburg Water Reclamation Facility), and the electric power utility (Pacific Power). All of these utility providers have adequate capacity to meet the demands of the proposed project.

Short-term but measurable adverse impacts to traffic are expected during the construction phase of the proposed project. Once operational, the project is expected to result in an overall decrease in the amount of trucks entering and leaving the site, compared to the current Oregon Freeze Dry warehouse activities. A small increase in personal vehicle traffic is expected, but would have only a minor adverse impact to the surrounding community, and the decrease in truck traffic would have a minor beneficial impact to the immediate vicinity.

The risk of exposure to hazardous materials in the general population would be negligible and would only occur if there were a release beyond the site property (e.g., a spill of a liquid) or possibly through dust if emission control equipment should malfunction. With appropriate implementation of safety procedures and equipment, the impacts on human health and safety are expected to be within OSHA tolerance levels for plant workers and would involve no exposure to the general public. The potential for impacts of an intentional destructive act on human health and safety is not expected to occur and would be reduced through implementation of emergency procedures to be developed by EnerG2.

DOE also evaluated socioeconomics to determine the potential positive benefits of the project on the affected communities. The proposed project is anticipated to result in small increases in local employment (approximately 35 permanent jobs) and local spending, potentially providing a beneficial impact.

The other environmental areas DOE evaluated for potential impacts were: land use, meteorology, socioeconomics, environmental justice, visual resources, surface water, groundwater, wetlands, floodplains, cultural resources, and energy use. DOE determined that there would be no potential for adverse impacts to 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.

Under the No Action Alternative, the project would either be delayed, as EnerG2 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 January 14, 2010, and advertised its release in the Democrat-Herald on January 24, 25 and 26, 2010. In addition, DOE sent copies for public review to the Albany City Library in Albany, Oregon. DOE established a 30-day public comment period that began January 24, 2010, and ended February 24, 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 responsible U.S. Fish


and Wildlife Service's Oregon State Office in Portland; the Natural Heritage Information Center in Portland; and the Oregon Parks and Recreation Department's State Historic Preservation Office in Salem. 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 at DOE's National Energy Technology Laboratory web site at <http://www.netl.doe.gov/publications/others/nepa/ea.html>.

COMMENTS: Comments were received from two entities, the Region 10 Office of EPA, and a private citizen, R. Foster. EPA provided comments on the net benefit of CO2 emissions reduction on a life-cycle basis for electric drive vehicles. Foster commented on the dust control system's ability to capture and remove particulate matter; ammonia condenser and acid/base treatment process; production of nanoscale fibers, balls, and tubes; storage and protection from cross-contamination of material protection; storage, packaging and shipment of material; air emissions and emission control devices; project alternatives; and waste ash and other generated material. DOE and EnerG2 have addressed these comments, and responses to the comments are included in Appendix B of the Final EA.

DETERMINATION: On the basis of the evaluations in the Final EA, DOE determined that its Proposed Action - providing a \$21 million federal grant - and EnerG2's proposed project - renovating an existing plant and operating it for intermediate production of ultracapacitor energy storage media - would have no significant impact on the human environment. Although the proposed project would create manufacturing wastes; cause air emissions; increase demand on local utilities; and generate increased noise and traffic; these impacts would be minor. The project proponent 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 is not required, and DOE is issuing this FONSI.

Issued in Pittsburgh, PA, this 7th day of April 2010.



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