**Department of Energy**
Golden Field Office
1617 Cole Boulevard
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**DOE/EA-1786**

# FINDING OF NO SIGNIFICANT IMPACT

# ALGENOL INTEGRATED BIOREFINERY FOR PRODUCING ETHANOL FROM HYBRID ALGAE FORT MEYERS, FLORIDA

**AGENCY:** U.S. Department of Energy, Golden Field Office

**ACTION:** Finding of No Significant Impact

**SUMMARY:** The U.S. Department of Energy (DOE) is proposing to authorize expenditure of federal funding by Algenol Biofuels, Inc. (Algenol) to design, construct and start-up a Direct to Ethanol pilot-scale integrated biorefinery (biorefinery or proposed project). Two potential sites were analyzed in the EA for the location of the biorefinery; the Dow Chemical Company's (Dow) plastics and chemical manufacturing facility in Freeport, Brazoria County, Texas and an industrial site in the Alico Road Business Park in Fort Myers, Florida. Algenol has since selected the site in Fort Myers, Florida, in part due to the time necessary to meet wetland requirements for the Texas site. The Florida property, which is approximately 40 acres owned by Alico Road Business Park, is fairly isolated from the general public and is already zoned for heavy industrial use. The biorefinery would produce approximately 100,000 gallons of ethanol per year, distill onsite the ethanol-water mixture to fuel-grade quality, and produce the ethanol from $CO_2$ and saline water using hybrid algae to actively carry out photosynthesis in sealed, clear-plastic photobioreactors (that is, closed-system translucent containers).

The purpose of the proposed project is to refine systems, equipment, and processes to maximize ethanol production with minimal costs to ensure the economic and technical viability of commercialization. The ultimate goal is to develop this technology for use in a commercial biorefinery. Funding of the proposed project would be consistent with DOE's goals under the objectives outlined in The Energy Policy Act of 2005, The Energy Independence and Security Act of 2007, and the American Recovery and Reinvestment Act of 2009, and would partially satisfy DOE's need to accelerate the construction and operation of pilot biorefinery facilities as well as validate refining technologies and help lay the foundation for full commercial-scale development of the biomass industry in the U.S. and reduce U.S. dependence on foreign oil.

This FONSI supports DOE's funding of the design, permitting, and construction of the Direct to Ethanol pilot-scale integrated biorefinery. All discussion, analysis, and findings related to the potential impacts of construction and operation of the Algenol project at both locations, including the Algenol committed mitigation measures, are contained in the Final *Environmental Assessment for the Algenol Integrated Biorefinery for Producing Ethanol From Hybrid Algae Freeport, Texas or Fort Meyers, Florida* (EA). All information related to the analysis of the



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Texas site remains in the final EA to maintain the integrity of the NEPA decision-making process and the EA record. The final EA is hereby incorporated by reference.

DOE prepared this Finding of No Significant Impact (FONSI) in accordance with the *National Environmental Policy Act of 1969* (NEPA), the Council on Environmental Quality regulations for implementing NEPA, as amended, 40 CFR 1500 to 1508, and DOE NEPA regulations: 10 CFR 1021.322. **Although the EA analyzes both sites, this FONSI applies *only* to the Florida location and therefore, only discusses the analysis of the Florida site.**

**ENVIRONMENTAL IMPACTS:** In compliance with NEPA and DOE NEPA implementing regulations (10 CFR Part 1021) and procedures, the Final EA examined the potential impacts of DOE's proposed decision to authorize Algenol to expend federal funds for the proposed project and also examined a No-Action Alternative. Under the No-Action Alternative, DOE would not authorize expenditure of Recovery Act funds for the proposed project and Algenol would not design, construct, or start-up the proposed biorefinery.

The Final EA describes and analyzes potential impacts on the environment that could result from construction and start-up of the proposed biorefinery on the following resources: land use; visual and aesthetic resources; cultural resources; air quality; noise; geology and soils; water resources; biological resources; waste management and hazardous materials; utilities and energy; transportation and traffic; public and occupational health and safety; socioeconomics; and environmental justice, as well as any cumulative impacts of the proposed project. DOE determined that for the Florida location, there would be no adverse impacts or that the impacts would be small, temporary, or both for all resources.

Resource areas with minor impacts or that require applicant-committed measures are briefly discussed below. The EPA would regulate the hybrid algae under the *Toxic Substances Control Act* (TSCA) as microbial products of biotechnology. EPA indicated that the project would fall under EPA's "contained structure" exemption; thus, there would be no need to submit a TSCA application for the project. Algenol's development, use, transportation, and disposal of hybrid algae would take place in contained facilities or vessels, consistent with EPA's TSCA regulations.

For the Florida site, the proposed biorefinery would be considered a minor source of air emissions and would qualify for a "permit-by-rule" under Florida regulations, which is reserved for minor sources. Lee County is in attainment for all National Ambient Air Quality Standards (NAAQS). Minor impacts to the local air quality are expected as minimal amounts of emissions would be generated by the proposed biorefinery and associated vehicles.

It is expected that no impacts to state- or federally-protected species would occur due to the generally poor quality of on-site vegetative habitat, overall low diversity of wildlife observed at the site, and the recently disturbed nature of the site. If endangered species are detected prior to or during construction, Algenol would implement the appropriate measures, in consultation with state agencies, to ensure that endangered species and habitats would not be adversely impacted.

Because 96.8 percent of the site is composed of farmland of unique importance, DOE collaborated with the local Natural Resource Conservation Service (NRCS) to complete the required Farmland Conversion Impact Rating form. The NRCS assigned the site a score of 69 out of 260 points. A score of less than 160 points need not be given further consideration for protection and requires no further evaluation. Because the soils at the site are best suited for cultivating pasture grasses and are located in the center of a developing urban area, the impact to the farmland soils is negligible.

In response to the consultation letter DOE sent to the Seminole Tribe of Florida, the tribe deferred further commenting until they could review a Phase I archaeological survey to be conducted by Algenol. Algenol is committed to completing a Phase I archaeological survey and continuing consultation if necessary prior to construction.

DOE evaluated the cumulative impacts of the proposed project and other past, present, and reasonably foreseeable projects in the area. DOE concluded that Algenol's proposed project, in conjunction with other activities considered, would have no or minimal cumulative impacts on the environmental resources considered.

**PUBLIC PARTICIPATION IN THE EA PROCESS:** In accordance with applicable regulations and policies, DOE sent a Notice of Scoping on June 10, 2010, to federal, state, and local agencies; tribal governments; elected officials; businesses; organizations and special interest groups; and members of the general public for comments regarding the EA's scope. DOE published the Notice of Scoping online at the DOE Golden Field Office Public Reading Room. One public comment letter was received in response to the Notice of Scoping. All areas of concern contained in the letter were addressed to the extent practicable in the Final EA. These documents are provided in Appendix A of the Final EA.

For the Florida site, DOE initiated consultation with the Florida Division of Historical Resources, applicable U.S. Fish and Wildlife Service offices, and the Fish and Wildlife Conservation Commission, the Seminole Nation of Oklahoma and the Seminole Indian Tribe of Florida. The consultation letters and responses are provided in Appendix B of the Final EA.

DOE published the Draft EA online at the DOE Golden Field Office Public Reading Room for a 15-day review period ending September 7, 2010. Copies of the Notice of Availability (NOA) were mailed to stakeholders and the NOA was published online at the Golden Field Office Public Reading Room. DOE received no comments during the Draft EA comment period.

**DETERMINATION:** Based on the information presented in the Final EA (DOE/EA 1786), DOE determines that authorizing expenditure of federal funds by Algenol to support final design, construction, and start-up of the proposed biorefinery at the Ft. Myers, Florida location would not constitute a major federal action significantly affecting the quality of the human or natural environment as defined by NEPA. Therefore, the preparation of an Environmental Impact Statement is not required, and DOE is issuing this FONSI for the Fort Meyers, Florida location.

Alengol's commitment to obtain and comply with all appropriate federal, state, and local permits required for construction and operation of the biorefinery, and to minimize potential impacts through the implementation of best management practices and various applicant-committed measures is detailed in the Final EA, shall be incorporated and enforceable through DOE's financial assistance agreement.

The final EA is available for review at: http://www.eere.energy.gov/golden/Reading_Room.aspx.

For questions about this FONSI, contact:

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