



Department of Energy

Golden Field Office
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DOE/EA 1789

FINDING OF NO SIGNIFICANT IMPACT
CONSTRUCTION AND OPERATION OF A PROPOSED CELLULOSIC
BIOREFINERY
ALPENA PROTOTYPE BIOREFINERY
ALPENA, MICHIGAN

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 American Recovery and Reinvestment Act of 2009 funding to American Process, Inc. (API) to complete final design, construction and initial operation of the Alpena Prototype Biorefinery (APB) in Alpena, Michigan. The biorefinery, which would be constructed in an existing industrial facility, would convert wood sugars from the adjacent Decorative Panels International (DPI) hardwood manufacturing plant's wastewater into ethanol. The maximum production of the facility would be 900,000 gallons per year of anhydrous (200-proof) ethanol or up to 1.2 million gallons per year of 70-percent ethanol (E-70), an automotive fuel. API would purchase a total of 28 acres of the existing industrial facility from DPI; one acre for construction of the biorefinery and the existing 27 acre wastewater treatment facility.

All discussion, analysis and findings related to the potential impacts of constructing and operating the proposed biorefinery, including the API-committed environmental protection measures, are documented in the Final EA. The Final EA is hereby incorporated by reference.

This FONSI was prepared 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.

ENVIRONMENTAL IMPACTS: In compliance with NEPA and the DOE NEPA implementing regulations, the EA examined the potential impacts of DOE's decision to authorize API to expend Recovery Act 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 by API and API would not design, construct or operate the proposed biorefinery.

The EA describes and analyzes potential impacts on the environment that could result from construction and operation of the proposed biorefinery. However, not all resource areas were evaluated at the same level of detail. For the following resource areas--noise, visual and aesthetic resources, geology and soils, biological resources (including wetlands), and cultural resources--DOE determined early in the analysis there would be no impacts or that the potential impacts would be negligible, temporary, or both, and therefore did not carry these areas forward for further analysis in the EA.



DOE analyzed in more detail land use, air quality; utilities and energy, water resources, socioeconomics, environmental justice, public and occupational safety and health, waste management and hazardous materials, and transportation, as well as cumulative impacts of the proposed project. Based on the more detailed analysis of these resources areas, DOE has determined as well that there would be no impacts or that the potential impacts would be negligible, temporary, or both. As described below, the following resource areas would require applicant-committed measures, in compliance with required permits, to ensure environmental impacts would be minimal: air quality; water resources; and waste management and hazardous material handling.

The construction and operation of the proposed APB project would result in an increase in the amount of air pollutants emitted primarily from dust generated by site grading and exhaust emission from construction vehicles. During construction, API would minimize fugitive dust emissions by using appropriate control measures, such as road watering, temporary vegetative cover, or dust suppressants, as needed to ensure that impacts to air quality during the construction phase of the proposed project would be minor and temporary.

Potential emissions during operations would come from several sources including fugitive dust (PM₁₀ and PM_{2.5}) from new vehicle hauling traffic and lime handling activities. The fugitive dust would be minimized by using a 10 mile per hour speed limit and maintaining the roads as needed. No other criteria air pollutants would be emitted by stationary sources. The fermentation and ethanol distillation systems would generate emissions of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs), including acetaldehyde, formaldehyde, and methanol. API would control these pollutants by venting the exhaust gases from these processes through a wet scrubber that would remove approximately 98 percent of the VOCs and 50 percent of the HAPs. Ethanol storage and loadout operations would also generate emissions of VOCs and HAPs. API would store the ethanol in fixed-roof tanks that would prevent emissions. API has submitted a Draft Permit to Install application for the proposed APB project to the MDNRE. The permit application is for a minor source because the controlled potential to emit PM₁₀ and PM_{2.5}, VOCs and HAPs for the APB would be below major source thresholds.

The APB project would have potential volatile organic compound (VOC) odors from the fermentation system, the pressed lignin and gypsum, and the wastewater treatment plant. API would use wet scrubbers to reduce the VOC emissions from the process by at least 97 percent, similar to a conventional ethanol facility. The lignin would be landspread as a soil amendment or sold as kiln fuel to a local cement manufacturer. Routine transport of the lignin would reduce the potential for odors to develop.

Potential impacts to the surficial aquifer could result from accidental releases of hazardous materials from facility operations. API would use facility designs that include secondary containment and would have operational policies and procedures to manage and store such materials, so releases should not occur.

Soil disturbance during construction activities could result in modified surface water runoff patterns from the site. Impacts on hydrology could result from land clearing, loss of vegetation,

and associated accelerated runoff from impervious surfaces following precipitation events. Although erosion could affect water quality, the use of construction and post construction Best Management Practices (BMPs) would minimize surface water runoff to negligible levels following construction and operation of the proposed APB.

Impacts to surface-water quality could occur from accidental releases of hazardous materials from facility operations. API would use facility designs that include secondary containment and operational policies and procedures to manage and store such materials, so releases should not occur.

The chemicals and chemical processes used to produce ethanol create a potential for health and safety hazards. To prevent a catastrophic accident from affecting the public, API would design and construct storage tanks outside a building with secondary containment structures large enough to hold the contents of the largest tank plus sufficient additional volume for precipitation (rain or snow). The secondary containment would limit the movement of a spilled liquid.

API would use the genetically engineered Ho-Purdue yeast for fermentation under the *Toxic Substances Control Act* (TSCA); the EPA Biotechnology Program regulates commercially used microorganisms. API would apply for a Tier 1 exemption from the EPA for the Ho-Purdue yeast which would allow API to commence operations. API would implement specific physical containment and control technologies to meet the Tier 1 exception requirements.

The proposed APB project would be a small-quantity generator of hazardous waste, which would consist primarily of flammable liquids and laboratory chemicals. A licensed hazardous waste transportation company would transport hazardous wastes to a licensed hazardous waste treatment, storage, and disposal facility. API would neutralize spent acids and acidic waste it could not reuse on site. It would dispose of neutralized solid waste off site with other nonhazardous waste.

PUBLIC PARTICIPATION IN THE EA PROCESS: In accordance with applicable regulations and policies, DOE sent a scoping notice on June 16, 2010, to federal, state, and local agencies; tribal governments; elected officials; businesses; organizations and special interest groups; and members of the general public providing 30 days to submit comments regarding the EA's scope. DOE published the Scoping Notice online at the DOE Golden Field Office Public Reading Room. No public comments were received on the Scoping Notice.

In addition, DOE initiated consultation with the U.S. Fish and Wildlife Service, the Michigan Department of Natural Resources and Environment, and the Michigan State Historic Preservation Office, the Inter-Tribal Council of Michigan, Inc., and the sovereign nations of the Sault Tribe of Chippewa Indians and the Little Traverse Bay Bands of Odawa Indians. Appendix B of the EA contains copies of the consultation letters and responses.

DOE published the Draft EA online at the DOE Golden Field Office Public Reading Room for a 15-day review period which ended September 13, 2010. A Notice of Availability was mailed to identified stakeholders and published online at the Golden Field Office Public Reading Room. DOE received no comments during the comment period.

DETERMINATION: DOE determines that authorizing the expenditures of Federal funds to American Process, Inc. to facilitate final design, construction, and operation of the proposed Alpena Prototype Biorefinery would not constitute a major federal action significantly affecting the human or natural environment, as defined by NEPA.

API'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 detailed in the Final EA, shall be incorporated and enforceable through DOE's financial assistance agreement.

Therefore, the preparation of an Environmental Impact Statement is not required, and DOE is issuing this Finding of No Significant Impact (FONSI). Subject to any other conditional provisions, this FONSI informs DOE's decision to authorize release of its cost-shared funding for the design, construction, and operation of the biorefinery in Alpena, Michigan.

Copies of the Final EA are available at the DOE Golden Field Office Public Reading Room website at: http://www.eere.energy.gov/golden/Reading_Room.aspx.

For questions about this FONSI, please contact:

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