

**FINDING OF NO SIGNIFICANT IMPACT  
FOR  
ARCHER DANIELS MIDLAND COMPANY'S "CO<sub>2</sub> CAPTURE FROM BIOFUELS  
PRODUCTION AND SEQUESTRATION INTO THE MT. SIMON SANDSTONE"  
DECATUR, ILLINOIS**

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

**ACTION:** Finding of No Significant Impact (FONSI)

**SUMMARY:** DOE completed the Final Environmental Assessment for Industrial Carbon Capture and Sequestration (ICCS), Area 1 Project, "*CO<sub>2</sub> Capture from Biofuels Production and Sequestration into the Mt. Simon Sandstone,*" Decatur, Illinois (DOE/EA-1828). Based on the analyses in the Environmental Assessment (EA), DOE determined that its proposed action-- awarding a grant to Archer Daniels Midland Company (ADM) to demonstrate an integrated system of carbon dioxide (CO<sub>2</sub>) capture in an industrial setting and geologic sequestration in a sandstone reservoir -- would result in no significant adverse impacts. In addition, beneficial local socioeconomic impacts would occur from increased employment opportunities and spending in nearby communities.

**BACKGROUND:** Congress appropriated funding for ICCS in the American Recovery and Reinvestment Act of 2009, Public Law 111-5 (Recovery Act), in order to stimulate the economy and reduce unemployment in addition to furthering DOE's ICCS program. DOE solicited applications for this funding by issuing a competitive funding opportunity announcement (DE-FOA-0000015), *Carbon Capture and Sequestration from Industrial Sources and Innovative Concepts for Beneficial CO<sub>2</sub> Use* on June 8, 2009. The announcement invited applications in two areas of interest: (1) large-scale carbon capture and sequestration projects from industrial sources, and (2) innovative concepts for beneficial CO<sub>2</sub> use.

This project, *CO<sub>2</sub> Capture from Biofuels Production and Sequestration into the Mount (Mt.) Simon Sandstone*, was one of the projects DOE selected for Phase I funding in Area of Interest 1. In Phase I, awardees received funding to complete a Phase II proposal. Phase II projects were then competitively selected from the pool of Phase I awardees. This project was one of nine selected for a Phase II award. One part of the Phase II selection process considered potential environmental impacts of all responsive applications pursuant to 10 Code of Federal Regulations (CFR) § 1021.216.

The federal action of providing funding for these ICCS projects 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). DOE prepared an EA to evaluate the potential environmental consequences of providing financial assistance to this proposed project under the ICCS program.

**PURPOSE AND NEED:** The overall purpose for DOE action pursuant to the ICCS program and the funding opportunity under the Recovery Act are to demonstrate the ability of the Mt. Simon Sandstone to accept and retain one million tons per year (approximately 2.5 million tons (2.26 million metric tons) of CO<sub>2</sub> injected over a period of 2.5 years); thus demonstrating large-scale sequestration sooner than might otherwise be possible. There is a need for additional research and demonstration to fill gaps in our understanding of carbon sequestration; to ensure protection of human health and the environment; to reduce costs; and to facilitate the full-scale deployment of this technology.

**DESCRIPTION OF THE PROPOSED ACTION:** DOE's proposed action is to provide partial funding for an integrated system of CO<sub>2</sub> capture in an industrial setting and geologic sequestration in a sandstone reservoir. The CO<sub>2</sub> that would be sequestered is currently a by-product in ADM's Decatur fuel-grade ethanol production facility. ADM would capture approximately one million tons of CO<sub>2</sub> per year using dehydration and compression. The compressed CO<sub>2</sub> would be piped to an injection well and sequestered in the Mt. Simon sandstone formation. The proposed project would include construction of a compression/dehydration facility, 8-inch pipeline, 24-inch pipeline, electrical substation, electrical power line, an injection well with associated equipment, and a verification well for monitoring the sequestered CO<sub>2</sub>. DOE would provide \$141.4 million in financial assistance in a cost sharing arrangement with ADM. The total cost of the project is estimated at \$207.9 million.

**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 ADM's Proposed Project. For the purposes of the EA, DOE assumed that the project would not proceed without DOE funding. This assumption established a baseline against which the potential environmental impacts of the proposed project were compared.

**ENVIRONMENTAL CONSEQUENCES:** DOE evaluated the potential environmental consequences of the proposed project and the no-action alternative. This project would be constructed within approximately one mile of the injection well for the existing DOE Regional Carbon Sequestration Partnership project. Cumulative impacts from both projects were analyzed in the EA.

DOE considered seventeen 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; geology and soils; noise; waste management; and human health and safety. For these areas, DOE determined there would be minimal potential adverse environmental impacts. Air emissions and underground injection may require modifications to existing permits or new permits, but the changes would be minor and not trigger major impacts or controversy.

DOE also evaluated socioeconomics to determine the potential positive benefits of the proposed project on the affected communities. The proposed project is anticipated to result in small increases in local employment opportunities and local spending, potentially providing a minor beneficial impact to these communities.

The other environmental areas DOE evaluated for potential impacts were water resources, wetlands and floodplains; terrestrial vegetation; wildlife; threatened and endangered species; land use; infrastructure; environmental justice; and cultural resources. DOE determined that there would be no potential for adverse impacts for these resource areas, or that the impacts would be minimal, temporary, or both. The EA provides more detail on the reasons DOE did not conduct more detailed evaluations in these areas.

Under the no-action alternative, the project would either be delayed, as ADM sought other funding sources, or abandoned altogether. The potential environmental consequences of a delayed project would either be the same as the current project, or might change with the project scope. If abandoned, the potential environmental consequences would not occur. Furthermore, the potential beneficial impacts would change or not occur.

**PUBLIC AVAILABILITY:** DOE issued the Draft EA on January 30, 2011, and advertised its release in *The Decatur Herald and Review* on January 30 and 31, and February 1, 2011. In addition, the Department sent copies for public review to the Decatur Public Library in Decatur, IL. The Department established a 30-day public comment period that began January 30, 2011, and ended March 1, 2011. The Department announced it would accept comments by mail, e-mail, and facsimile.

The Draft EA was distributed to various state agencies. DOE conducted formal consultations by mail with the responsible U.S. Fish and Wildlife Service field office, State Historic Preservation Office, Illinois Environmental Protection Agency, and Tribal contacts. In each case, DOE received correspondence supporting a determination of no potential impacts to threatened or endangered species, and no potential impacts to properties of archeological significance or listed on or eligible for inclusion on the National Register of Historic Places. Region 5 of the U. S. Environmental Protection Agency commented on the Draft EA. DOE responded to the comments and added clarifying information to the Final EA.

Copies of the Final EA and this FONSI are available at DOE's National Energy Technology Laboratory web site at <http://www.netl.doe.gov/publications/others/nepa/ea.html> or by sending a request to:

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**DETERMINATION:** On the basis of the evaluations in the Final EA, DOE determined that its proposed action – to provide a \$141.4 million in cost-shared funding – and ADM's proposed project – to demonstrate an integrated system of CO<sub>2</sub> capture in an industrial setting and geologic sequestration in a sandstone reservoir – would have no significant impact on the human environment. All potential environmental impacts identified and analyzed in the EA would not

be significant. Therefore, preparation of an environmental impact statement is not required, and DOE is issuing this Finding of No Significant Impact.

Issued in Pittsburgh, PA, this 3 day of May 2011.



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