


October 4, 2011

MEMORANDUM FOR ANTHONY V. CUGINI
DIRECTOR, NATIONAL ENERGY TECHNOLOGY LABORATORY

FROM: RICHARD A. HARGIS, JR. 
DIRECTOR, ENVIRONMENTAL COMPLIANCE DIVISION

SUBJECT: Finding of No Significant Impact and Final Environmental Assessment
for Houston Advanced Research Center, Battleground Energy Recovery
Project, Deer Park, Harris County, Texas (DOE/EA-1769)

The National Energy Technology Laboratory (NETL) prepared an environmental assessment (EA) under the U.S. Department of Energy's (DOE's) National Environmental Policy Act implementing procedures to analyze the potential environmental impacts of its proposed action and this proposed project. DOE would provide cost-shared funding to the Houston Advanced Research Center (HARC) to advance research on and demonstration of energy efficiency and renewable energy technologies. The proposed project would produce 8 megawatts (MWs) of electricity from high pressure steam generated by capturing heat that is currently lost at the Clean Harbors Deer Park (CHDP) facility in Harris County, Texas.

DOE's proposed action would provide \$1.94 million in cost-shared funding to HARC for the Battleground Energy Recovery Project from funds authorized in the *American Recovery and Reinvestment Act of 2009* (Public Law 111-5, 123 Statute 115). Private industry partners would provide the remaining funding for an estimated total project cost of \$3.94 million. The project would have a minimum 30-year operating life and would be considered a permanent installation. The 8 MWs of electricity generated by the steam turbine would be used by the CHDP facility to offset purchased power; any excess power would be transmitted to the electric grid by Center Point Energy.

The draft EA was distributed to the appropriate federal and state agencies. In addition, DOE accepted public comments on the draft EA during a 30-day comment period from February 2, 2011, through March 3, 2011. DOE received a request for a cultural survey by the State Historic Preservation Office representing the Texas Historical Commission. HARC retained a consulting firm to conduct this survey. The results concluded that no artifacts of either historic or prehistoric origin exist in the proposed project area. DOE received no other comments requiring resolution.

Based on the analyses in the EA, DOE determined its proposed action and HARC's proposed project would result in no significant adverse impacts. The attached Finding of No Significant Impact (FONSI) documents this determination, which is supported by the final EA.

The proposed project would have only very minor impacts to wildlife and water quality during construction. All other potential environmental impacts would be negligible. Therefore, preparation of an environmental impact statement is not required and the Environmental Compliance Division recommends that NETL issue a FONSI for DOE's proposed action.

RECOMMENDATION: Sign and issue the attached FONSI.

Attachments

DISTRIBUTION:

S. Klara
B. Tomer
R. Detwiler
C. Zeh
H. Hinkle
A. Yocum
W. Gwilliam

**FINDING OF NO SIGNIFICANT IMPACT
FOR
BATTLEGROUND ENERGY RECOVERY PROJECT
DEER PARK, HARRIS COUNTY, TEXAS**

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

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE completed the *Final Environmental Assessment for the Battleground Energy Recovery Project, Deer Park, Harris County, Texas* (DOE/EA-1769). Based on the analyses in the environmental assessment (EA), DOE determined that its proposed action, providing \$1.94 million in cost-shared funding to the Houston Advanced Research Center (HARC) for the Battleground Energy Recovery Project, would result in no significant adverse impacts. DOE further determined that HARC's proposed project would have beneficial local socioeconomic impacts from increased employment opportunities and spending in the project area. Beneficial local utility impacts would occur due to the reduction of natural gas consumption and the potential for creating electric power from heat that is currently generated and lost.

BACKGROUND: DOE's proposed action is to provide \$1.94 million in cost-shared funding to the HARC for the Battleground Energy Recovery Project. The DOE Office of Energy Efficiency and Renewable Energy selected the proposed project to advance research on and demonstration of energy efficiency and renewable energy technologies. The federal action of providing funding for this project requires compliance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [U.S.C.] 4231 *et seq.*), the Council on Environmental Quality's regulations (Chapter 40, Parts 1500 through 1508, Code of Federal Regulations [CFR]), and DOE's NEPA implementing procedures (10 CFR Part 1021). DOE prepared this EA to analyze the potential environmental consequences of providing financial assistance for this proposed project.

PURPOSE AND NEED: The overall purpose and need for DOE action is to advance research on and demonstration of energy efficiency and renewable energy technologies. On a national level, there is a need for projects to demonstrate energy generation through more efficient and environmentally preferable means. These projects support innovative technologies that provide fuel flexibility for manufacturers and consumers and reduce fossil fuel requirements. The proposed project would use waste heat, which is considered a green energy fuel. Sharing in the funding of this proposed project also furthers the objectives set forth in the *Energy Independence and Security Act of 2007* by increasing national energy security through improved industrial energy efficiency (Title IV, Subtitle D).

DESCRIPTION OF THE PROPOSED PROJECT: DOE's proposed action is to provide \$1.94 million in cost-shared funding to HARC for its Battleground Energy Recovery Project. Private industry partners would provide the remaining funding. The proposed project would produce 8 megawatts (MWs) of electricity from high pressure

steam generated by capturing heat that is currently lost at the Clean Harbors Deer Park (CHDP) facility. The proposed project is consistent with DOE's goal of increased use of energy efficiency and renewable energy generation projects.

The proposed project involves installation of a specifically designed waste heat recovery boiler on the existing kiln afterburner of an incineration unit at the CHDP facility. This boiler would use heat from the incinerator flue gases to generate high-pressure superheated steam. The adjacent Dow Chemical plant would periodically consume part of the steam for process needs, replacing natural gas firing of existing boilers. The majority of the steam, however, would be piped to a new turbine generator (TG). The TG would be installed in a new building adjacent to the existing CHDP facility. Additional waste heat steam from the neighboring Dow Chemical plant would be routed to the TG when available. A cooling tower would be installed adjacent to the new building in the northwest corner of the facility.

The 8 MWs of electricity generated by the TG would be used by the CHDP facility to offset purchased power; any excess power generated would be transmitted to the electric grid. Construction and installation activities associated with the proposed project would occur entirely within private industrial property. The project would require a construction permit and a minor amendment to the facility's air emissions permit. Additionally, modification to the facility's hazardous waste processing and disposal permit would be necessary. However, no significant adverse impacts are anticipated to result from implementation of this proposed project. The project would have a minimum 30-year operating life and would be considered a permanent installation.

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 HARC's 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 all 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, cultural and historic resources, and noise. For these areas, DOE determined that there would be minimal impacts.

DOE also determined that there would be positive benefits from the proposed project on local communities. The project is anticipated to result in small increases in local employment opportunities and spending, potentially providing minor benefits.

The other environmental areas DOE evaluated for potential impacts were water resources; wetlands and floodplains; terrestrial vegetation; wildlife; threatened and

endangered species; land use and infrastructure; environmental justice; and cultural resources. DOE determined that there would be no potential for adverse impacts on 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.

Under the No Action Alternative, the project would either be delayed, as HARC seeks other funding sources, or abandoned altogether. The potential environmental consequences, if the project were delayed, could be different if the project were modified. 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 February 2, 2011, and advertised its release in the *Houston Press* and the *Deer Park Broadcaster* on February 2, 3, and 4, 2011. In addition, DOE sent copies for public review to the Harris County Public Library in Houston, Texas. DOE established a 30-day public comment period that began February 2, 2011, and ended March 3, 2011. DOE announced that it would accept comments by mail, e-mail, and facsimile.

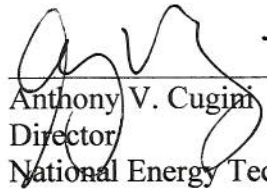
The draft EA was distributed to various state agencies. DOE conducted formal consultations by mail with the responsible U.S. Fish and Wildlife Service field office, Texas Historical Commission, the Bureau of Indian Affairs, and Tribal contacts. DOE received correspondence supporting determinations of no potential impacts to threatened or endangered species and no potential impacts to properties listed on or eligible for inclusion to the *National Register of Historic Places*.

Copies of the final EA and this FONSI are available on DOE's NETL web site at <http://www.netl.doe.gov/publications/others/nepa/index.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 the proposed action, to provide \$1.94 million in cost-shared funding to the HARC for the Battleground Energy Recovery Project, would have no significant impact on the human environment. All potential environmental impacts identified and analyzed in the EA would be less than significant. Therefore, preparation of an environmental impact statement is not required, and DOE is issuing this FONSI.

Issued in Pittsburgh, Pennsylvania, this 28 day of October 2011.



Anthony V. Cugini
Director
National Energy Technology Laboratory