DOE/EA-1797

FINDING OF NO SIGNIFICANT IMPACT DEPARTMENT OF ENERGY LOAN GUARANTEE TO AGUA CALIENTE SOLAR, LLC FOR THE AGUA CALIENTE PHOTOVOLTAIC SOLAR POWER PROJECT IN YUMA COUNTY, ARIZONA

AGENCY: U.S. Department of Energy, Loan Programs Office

ACTION: Finding of No Significant Impact

SUMMARY: The U.S. Department of Energy (DOE) has conducted an environmental assessment (EA) that analyzed the reasonably foreseeable environmental impacts associated with the 290 Megawatt (MW) gross output photovoltaic solar power project and associated interconnection transmission line proposed by Agua Caliente Solar, LLC (Agua Caliente) in Yuma County, Arizona. DOE, through its Loan Programs Office (LPO), proposes to provide a Federal loan guarantee pursuant to Title XVII of the Energy Policy Act of 2005 (EPAct 2005) to Agua Caliente to support the construction and startup of the proposed project.[1] The purpose and need for agency action is to comply with DOE's mandate under EPAct 2005 by selecting eligible projects that meet the goals of the Act. DOE is using the NEPA process to assist in determining whether to issue a loan guarantee to Agua Caliente to support the proposed project.

The proposed project would utilize a photovoltaic (PV) technology using cadmium telluride (CdTe) solar panels that converts sunlight into direct current (DC) electricity at a predicted conversion efficiency up to 11 percent. The DC output of multiple rows of PV modules is collected and inverters convert the DC power to alternating current (AC) power, and the AC power then flows to transformers where it is stepped up and the power is delivered to the grid. The project would occupy approximately 2,400 acres of a 3,800 acre private property that is currently in agricultural use and known as the Whitewing Ranch.

The power generated by the project would be connected into the existing Palo Verde – North Gila #1 500 kilovolt transmission line adjacent to the southern boundary of the site. The number of hours this 290 MW project is expected to generate electricity each year would yield 690,298 gross megawatt hours per year of output or 20,708 gigawatt hours of electricity over the 30 year life of the project. The solar energy generated by the project would have potential beneficial impacts on global climate change and air quality because it would off-set the need for energy produced by burning fossil fuels. In addition, the project would utilize an estimated less than 20 acre-feet of water annually on the 2,400-acre site during operations for panel washes and other non-potable uses.

All discussion and analysis related to the potential impacts of construction and operation of the proposed Agua Caliente project are contained in the Final EA (DOE/EA-1797), which is

[1] The amount requested for the loan guarantee is not being disclosed at this time because it is business sensitive. Moreover, should DOE approve a loan guarantee, the amount may differ from the original request.

incorporated here by reference. DOE examined potential impacts on the following resources and found none to be significant: land use; visual resources; noise; air quality; geology and soils; water resources, including floodplains; biological resources; cultural resources; socioeconomics and environmental justice; public health and safety, including impacts related to intentionally destructive acts; transportation; and cumulative effects, including global climate change.

In compliance with Executive Order 11988, Floodplain Management and DOE's implementing regulations found in the Code of Federal Regulations Title 10 Part 1022, a notice of floodplain action was published in the *Yuma Sun* on June 27, 2010, and a floodplain assessment was conducted for the proposed project and incorporated into the EA. The floodplain statement of findings is attached, and its availability will be announced in the *Yuma Sun*.

In accordance with applicable regulations and policies, DOE sent a notification letter regarding the Department's determination to prepare an EA to the Arizona Department of Environmental Quality on June 18, 2010. The letter described the proposed action and stated that a draft EA would be sent to the state for review. On October 6, 2010, DOE sent the draft EA and solicited comments from the Arizona Department of Environmental Quality and the Native American Indian Tribes with a potential interest in the project area. The draft EA was also posted on the Loan Programs Office website and a notice of availability was published in the *Yuma Sun*. DOE received three electronic mail comments on the draft EA. The first comment was received on October 7, 2010, and the commenter stated that although he had raised concerns to Yuma County about the safety of the proposed project, his concerns had been addressed and solved at the time the draft EA was out for public comment.

The second comment was received on November 2, 2010, from the Arizona Department of Environmental Quality (ADEQ). ADEQ stated that if water from solar panel washing resulted in a discharge to a surface water, a permit is required under the Arizona Pollutant Discharge Elimination System (AZPDES) program. The EA states that if water is used to wash the panels, it will fall to the ground and evaporate without being discharged into a surface water. Agua Caliente is aware that if any water from panel washing is discharged into a surface water, a permit is required under the AZPDES program and coverage can be applied for under the AZPDES De Minimus General Permit.

The third comment was received on November 12, 2010, from the Gila River Indian Community, Tribal Historic Preservation Office (GRIC-THPO). The GRIC-THPO stated that they agree with the DOE determination of No Adverse Effects, but they do not agree with the statement that there are no known significant Native American tribal/cultural resources in the area. The GRIC-THPO recommended continued consultation with the Tribes in the area, and stated that GRIC-THPO would defer to the Tribes in the area as leads for continued consultation. Prior to publishing the draft EA, DOE consulted with the Tribes in the area and no concerns were raised at that time. As previously stated, DOE sent copies of the draft EA to the Tribes in the area and no comments were received on the document. Since the GRIC-THPO agreed with DOE's No Adverse Effect determination and the Tribes that the GRIC-THPO deferred to with respect to consultation did not raise any issues prior to the draft EA nor did they comment on the draft EA, DOE determined that no additional Tribal consultation was necessary.

DETERMINATION: On the basis of the final EA, DOE has determined that providing a Federal loan guarantee to Agua Caliente for construction and startup of the 290MW photovoltaic solar power project and its associated connection to the Palo Verde – North Gila transmission line in Yuma County, Arizona, will not have a significant affect on the human environment. The preparation of an environmental impact statement is therefore not required, and DOE is issuing this Finding of No Significant Impact.

Copies of the Final EA are available at the DOE Loan Programs Office website at http://www.lgprogram.energy.gov/NEPA_EA.html or from

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Additional information on the DOE NEPA process is available from:

Carol M. Borgstrom, Director
Office of NEPA Policy and Compliance (GC-54)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
202-586-4600 or 1-800-472-2756

Issued in Washington, DC on the 24 day of November in the year 2010.

Jonathan M. Silver
Executive Director, Office of Loan Programs

ATTACHMENT
FLOODPLAIN STATEMENT OF FINDINGS
FOR DEPARTMENT OF ENERGY LOAN GUARANTEE TO AGUA CALIENTE SOLAR, LLC FOR THE AGUA CALIENTE PHOTOVOLTAIC SOLAR POWER PROJECT IN YUMA COUNTY, ARIZONA

The U.S. Department of Energy (DOE) proposed action is to issue a loan guarantee to Agua Caliente Solar, LLC (Agua Caliente) to support the design and construction of the 290 Megawatt (MW) photovoltaic solar power project. The proposed project would utilize a photovoltaic (PV) technology using cadmium telluride solar panels that converts sunlight into direct current electricity. The project would occupy approximately 2,400 acres of a 3,800 acre private property that is currently in agricultural use and known as the Whitewing Ranch. The power generated at the proposed facility would be connected into the existing Palo Verde – North Gila #1 500 kilovolt transmission line adjacent to the southern boundary of the site. Figure 1 is a map showing the location of the Agua Caliente solar power project.

Agua Caliente considered a number of criteria in selecting the most suitable site for the proposed project. Key factors considered for siting and selection were:

- A high degree of direct solar insolation
- Transmission access to customers with minimal transmission upgrades required for interconnection
- Land use and property ownership
- Available, high quality water
- Environmental compatibility and avoidance of environmental impacts through use of previously disturbed lands

After the siting areas were narrowed to potentially viable parcels, property transactions were advanced with landowners willing to sell their property. Negotiations for other sites failed either because other developers gained control of the property or because permitting and construction delays restricted the availability of transmission facilities needed to deliver power to utility customers. The result of this intensive siting effort was the selection of the proposed site for development.

A very small portion of the proposed project is located within a designated 100-year floodplain according to the Federal Emergency Management Agency Flood Insurance Rate Map (FIRM Yuma County, Arizona and Incorporated Areas, Panel 1175E, August 28, 2008). PV panels would be placed within the area of the 100-year floodplain in the southeast corner of the site as shown in Figure 2. The portion of the floodplain area containing panels would cover approximately 40 acres of the 2,400-acre Site and approximately 12,000 of the panel support structures would be located within this area. The individual support structures are planned to be 6x7-inch I-beams so the small size of each individual support structure would not impede water flows. Also, the collective 12,000 supports would only have a total area of approximately 4,200

square feet over the 40-acre area (1,742,400 square feet) which represents only 0.24 percent of the 40-acre area and would not result in measurably different flows compared to existing conditions.

DOE has determined that the proposed action would not adversely affect the 100-year floodplain and that the proposed action conforms to applicable floodplain protection standards. DOE/EA-1797 Section 3.7.3.1 contains the floodplain assessment which is incorporated here by reference. Also, the Yuma County Flood Control District has approved a Floodplain Use Permit for the project to develop in the floodplain. This permit requires that all equipment within the flood zone would be water (flood) resistant (as the panel support structures are) or elevated one foot above the base elevation of the 100-year floodplain. In order to further minimize any potential harm, Agua Caliente has a planned detention basin that would retain storm water and further reduce the extent and potential for downstream flooding.

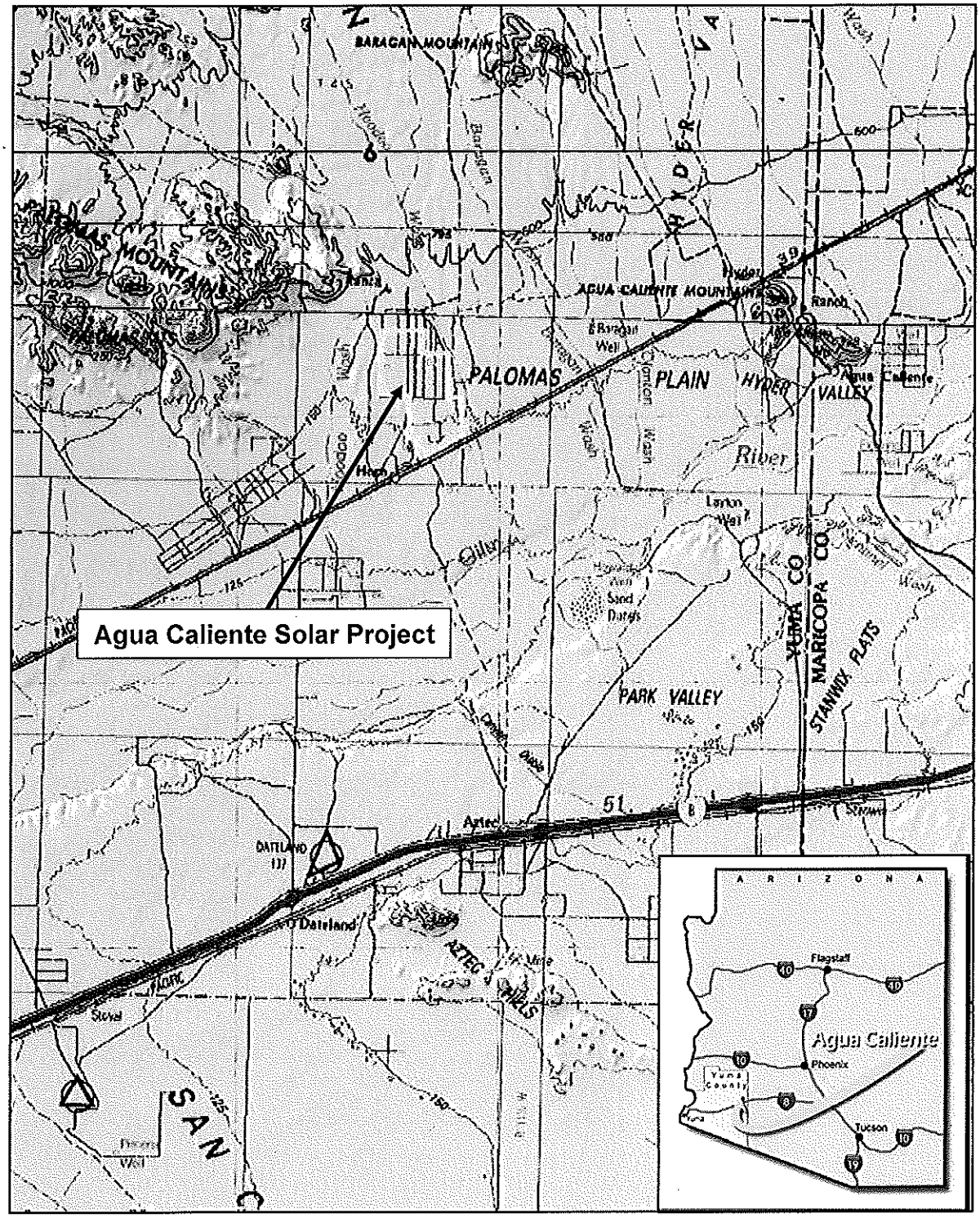

Figure 1
AGUA CALIENTE SOLAR PROJECT
Project Location

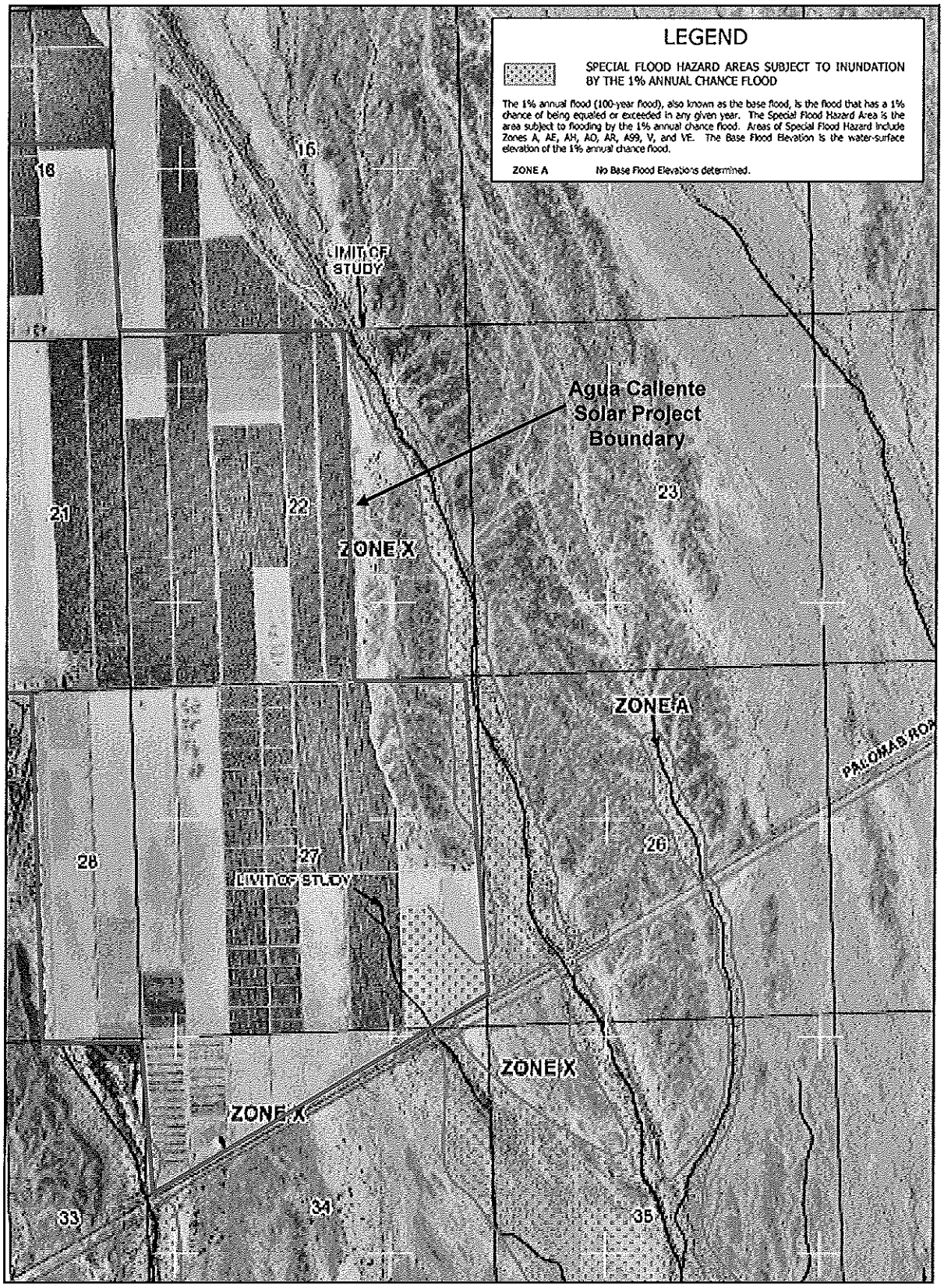

Figure 2

Agua Caliente Solar Project
FEMA 100-Year Floodplain Map