

**FINDING OF NO SIGNIFICANT IMPACT**

**Anahola Solar Project  
Anahola, Kaua'i, Hawai'i**

**RURAL UTILITIES SERVICE  
U.S. Department of Agriculture**

**Kaua'i Island Utility Cooperative  
Hawai'i 1**

**Prepared by:  
Engineering and Environmental Staff  
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## **A. INTRODUCTION**

The U.S. Department of Agriculture (USDA), Rural Utilities Service (RUS) expects to receive a request for financial assistance from Kaua'i Island Utility Cooperative (KIUC) for the proposed Anahola Solar Project (the proposed Project). The proposed Project involves the construction of a 12 megawatt (MW) photovoltaic facility, a substation, and a service center on Anahola, Kaua'i, Hawai'i. RUS may finance the proposed Project, thereby making it an action subject to review under the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and all applicable federal environmental laws and regulations. In addition, RUS considers the proposed project an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), 16 USC 470(f), and its implementing regulation, "Protection of Historic Properties" (36 CFR Part 800). In accordance with RUS's Environmental Policies and Procedures, 7 CFR Part 1794, RUS determined that the proposed Project would require an Environmental Assessment (EA). KIUC has proposed to construct the proposed Project on a 60-acre parcel owned and administered by the State of Hawai'i Department of Hawaiian Home Lands (DHHL). DHHL may issue a lease for the Project, which requires the preparation of an EA pursuant to Hawai'i Revised Statutes (HRS) § 343-5 and Hawai'i Administrative Rules (HAR) § 11-200-5. The EA was prepared as a joint federal-state document in accordance with 40 CFR § 1506.2.

Consistent with 7 CFR § 1794.41, KIUC prepared an Environmental Report (ER) following RUS Bulletin 1794A-601. RUS conducted an independent evaluation of the ER, and concurred with its scope and content, purpose and need, reasonable alternatives, and potential impacts to the human environment. RUS determined that the ER met the standards for an adequate assessment as specified in the National Environmental Policy Act of 1969 (NEPA) (U.S.C. 4231 et seq.), the Council on Environmental Quality's (CEQ) regulations for implementing NEPA (40 CFR Parts 1500-1508), and RUS's NEPA implementing regulations, Environmental Policies and Procedures (7 CFR Part 1794), and accepted the ER as the agency's draft EA in accordance with 7 CFR § 1794.41. The publication of the Notice of Availability issued in accordance with 7 CFR § 1794.42 initiated a 30-day public review period for the proposed Project; the comments and responses are included in the EA. Based on the content of the EA, including the public comments received, RUS finds that the proposed Project will not have a significant effect on the quality of the human environment and issues this finding of no significant impact (FONSI) in accordance with 7 CFR § 1794.43.

## **B. PROPOSED ACTION**

The proposed Project involves the construction, operation, maintenance, and decommissioning, as appropriate, of a 53 acre 12 megawatt (MW) photovoltaic facility, a 2 acre substation, and a 5 acre service center on approximately 60 acres of a 422 acre parcel owned by the Department of Hawaiian Home Lands (DHHL) in Anahola, Kaua'i, Hawai'i. These actions are interdependent and will be constructed in concert under a single lease from the DHHL, and have therefore been discussed within the same EA because they are connected actions as defined at 40 CFR § 1508.25(a)(1).

KIUC will begin construction of the proposed Project with the installation of a 6 foot high chain-link security fence around the area that will be used as a construction baseyard and laydown area. KIUC will then grub and grade the 60 acre site as needed, and excavate swales and retention basins for storm water runoff. KIUC will then construct access roads throughout the site; the access driveway to the service center will eventually be paved, whereas the secondary interior roads will be composed of all-weather material of gravel, recycled concrete or base rock. Site preparation will conclude with the extension of the security fencing around the entirety of the planned photovoltaic facility and substation footprint.

The photovoltaic facility will consist of 59,000 ground-mounted photovoltaic modules that are approximately 5.5 feet long by 3.25 feet wide by 9 feet above ground level, that are installed on approximately 11,000 foundation piles. The construction contractor will use pile drivers to install the galvanized steel posts, on which the racking frames will be attached to support the photovoltaic modules. The modules will be constructed in 12 - 1 MW groupings that each have a small compound containing inverters to convert the direct current (DC) power generated by the modules into alternating current (AC) power that is transmitted throughout KIUC's electrical grid, transformers to step up the voltage of the power to 12.47 kilovolts (kV) and other requisite equipment. All electrical cable required to interconnect the photovoltaic modules to the electrical grid will be buried in underground conduit within 2 feet deep trenches.

The substation will integrate the photovoltaic facility into KIUC's electrical grid by stepping up the 12.47 kV power to 69 kV and connecting with the existing electric transmission lines along Kūhiō Highway. Construction of the substation will require the pouring of concrete footings to anchor major structures and laying of coarse gravel to facilitate drainage. No new poles will be constructed; the substation will connect to the existing poles by overhead conductor and two underground 12.47 kV circuits. In addition to the typical substation equipment, including switchgear, transformers, voltage regulators etc., the substation will contain a 16 foot by 90 foot by 12 foot control building to protect control, monitoring, and communications equipment. The substation will also have a Battery Energy Storage System (BESS) that will regulate fluctuations in power output resulting from the intermittent nature of solar generating facilities, therefore improving the predictability of the flow of power from the facility to the electrical grid.

The service center will consist of an approximately 4,230 square foot new structure that will include a 1,400 square foot community meeting room and office space, a public and employee parking lot, a 4,500 square foot warehouse and garage space, a baseyard for outdoor storage of weather resistant materials such as poles, and a 20 foot wide access driveway. Construction of the service center will involve the installation of structural walls and roofing, water, sewer, electrical, communications, and fire control infrastructure. The construction contractor will also pave the parking lot and perform landscaping with native plants.

Maintenance activities for the photovoltaic facility and substation will include cleaning of the modules by spraying with demineralized water, monitoring and replacement of electrical

equipment, and clearing of vegetation through hand cutting, mowing, and localized herbicides. Maintenance associated with the service center will include those activities typical for office buildings, including inspections, cleaning, and care for the surrounding landscape. Performance of the photovoltaic modules is guaranteed for a 25 years, though it is anticipated that they will continue to perform adequately beyond this timeline. KIUC anticipates replacing panels as needed, but eventually may decommission the entirety of the photovoltaic facility. Once all equipment related to the operation of the solar facility is removed, the site will be returned to a state suitable for agricultural use. The substation and service center do not have a limit on their lifespan and therefore will not be decommissioned in the foreseeable future.

### **C. PURPOSE AND NEED**

KIUC is a not-for-profit, ratepayer-owned cooperative association responsible for the production, purchase, transmission, distribution, and sale of electricity on the Island of Kaua'i, Hawai'i. KIUC owns and operates a variety of electric utility installations throughout the island, including numerous generating facilities, thousands of miles of distribution and transmission lines, and support facilities including service centers, baseyards, offices, and warehouses. The cooperative is regulated by the Hawai'i Public Utilities Commission, and is required by law to provide and ensure the availability of reliable electrical service.

#### Photovoltaic Facility and Service Center

KIUC has proposed the photovoltaic facility to make progress towards meeting the requirements of the State of Hawai'i's Renewable Portfolio Standards (RPS), which require that 40 percent of generation be met by renewable resources by 2030. KIUC's Strategic Plan sets a more ambitious goal of generating 50 percent of its electricity by renewable resources by 2023. To meet these goals, KIUC has undertaken numerous efforts to supplement their portfolio, including Power Purchase Agreements (PPAs) with independent power producers (IPPs) for biomass and solar facilities, constructing hundreds of small residential and commercial solar installations throughout the island, pursuing and investigating other renewable energy resources (biomass, hydro, and wind). Failing to identify sufficient IPP-developed projects to meet the RPS requirements, and acknowledging the protracted permitting timelines associated with the development of biomass, hydro and wind facilities in Hawaii, KIUC determined that self-built solar facility would make a significant step forward to meeting the RPS and strategic plan goals.

When considering the siting of the photovoltaic facility and substation, KIUC identified two additional needs that could be met by the proposed Project; improving reliability of electrical service on the North Shore area, and fulfilling their commitments to community and sustainable development. The siting photovoltaic facility and substation are inextricably linked such that the substation is required to connect the generated energy to the electrical grid. The North Shore area is currently experiencing significant growth and accordingly an increasing demand for electricity. The area is served by a single circuit transmission line, the 69 kV Cross-Island Line from Hanahanapuni Tap to the Princeville substation, and a 69 kV-capable line that is

operated at 12.47 kV. Other populous regions of the island are served by a double circuit transmission line, which protects those areas in the event of an outage on one of the transmission lines. The North Shore must rely on the 12.47 kV line in the event of an outage on the 69 kV Cross-Island Line, adversely affecting power quality and leading to service disruptions for customers. Construction of a photovoltaic facility and its substation within the North Shore would provide the opportunity for KIUC to improve service in an underserved area of the electrical grid. The development of a photovoltaic facility and substation also provided an opportunity to fulfill the Energy Charter signed between KIUC and DHHL in 2009, which committed them to siting renewable energy projects on DHHL's available lands that would benefit the trust lands and native Hawaiian community. KIUC therefore determined that siting of the solar facility and substation, which could provide revenue to the local economy and engage the native community in sustainable development efforts would be preferred, though sites off of DHHL lands would be considered.

#### Service Center

In 2005, KIUC conducted an assessment of their customer existing support facilities. The assessment identified customer service issues associated with the inaccessibility of the existing facilities for the growing communities of the North and Eastern Shores. The assessment also identified operational issues at the existing Kapa'a Service Center, the service center closest to the North Shore, including inaccessibility across the Kūhiō Highway, where left turns are not permissible. The Kapa'a Service Center's equipment storage capacity is also limited, such that the warehouse and storage areas are currently located within the tsunami inundation zone, and KIUC will need to complete significant upgrades to the storage facilities to meet latest U.S. Environmental Protection Agency's Spill Prevention Controls and Countermeasures (SPCC) regulations. KIUC determined that a site for a new service center closer to the North Shore area would lead to improved customer service and overcome the operational safety issues at the Kapa'a Service Center.

### **D. ALTERNATIVES EVALUATED**

The EA's alternatives analysis discusses the no action alternative, along with numerous action alternatives comparing potential sizes, locations, and timing for the construction and operation of the photovoltaic facility, substation, and service center. For the reasons discussed in Section 3.1 of the EA with respect to permitting timelines and the deadlines of the RPS requirements, KIUC determined that the consideration of alternative generation sources was within the reasonable range of alternatives of EA.

#### Photovoltaic Facility and Substation

Under the no action alternative, RUS would not provide financing assisting to KIUC, who would therefore not construct the photovoltaic facility and service center. If the photovoltaic facility and substation are not constructed, KIUC would be unable to meet the RPS requirements or the goals set in their Strategic Plan. Further, KIUC would lose the opportunity to provide service to

the growing community of the North Shore, exposing the area to further outages and increasingly unreliable service.

When considering the desired wattage of the proposed facility, KIUC took into consideration their RPS targets and Strategic Plan goals, the potential impacts on system reliability given the intermittent nature of solar generation, and potential financial considerations. KIUC ultimately determined that a 12 MW facility, representing approximately 5% of KIUC's generated energy, would take a significant step towards meeting their goals without threatening the reliability of the system if there were significant fluctuations in the generated energy at the facility. This size would also allow KIUC to take advantage of tax credits that would provide for reduced costs to consumers. KIUC determined that a 12 MW facility would require a 45 to 63 acre site accommodate the required infrastructure.

KIUC conducted a review of potential locations that could accommodate the facility's size, taking into consideration solar resource maps, land ownership and land use classification information, proximity to substations and transmission lines, the needs for the electric grid, and the potential benefit to the community. KIUC identified three potential areas through this preliminary vetting process, including Wailua, Kekaha, and Anahola.

- Wailua was a desirable area given its proximity to KIUC's load center and potential reliability benefits. KIUC identified a privately owned site within Wailua with adequate solar resources, but it was eliminated due to its high groundwater conditions, topographical location that limited sun exposure, distance from existing transmission infrastructure, and cost.
- Kekaha was investigated because it has been identified as among the most desirable areas on the island for solar development; however, the two sites identified were limited by environmental factors (i.e. topography and silty soil conditions), distance from existing transmission infrastructure, and competition with IIP-developed projects.
- The Anahola site (the proposed Project) was selected due to its suitability for solar development, easy integration into the electrical grid, potential reliability benefits to the grid, and potential benefits to the community through the cooperation with DHHL.

KIUC also considered a delayed action alternative, through which they would wait to construct the solar facility at a later date. Taking into consideration the demands of RPS requirements, the existing tax credits offered through the American Recovery and Reinvestment Act of 2009 (ARRA), and the potential cost savings to their consumers associated with solar generation rather than fossil fuels, KIUC determined that there was no potential benefit to delayed action.

#### Service Center

Under the no action alternative, RUS would not provide financing assistance to KIUC, who would therefore not construct the service center. Without the construction of the service center, service to the northern and eastern shores would continue to be based at the inadequate facilities at Kapa'a. The 2005 customer service assessment evaluated six potential sites based on land availability and cost, highway access, proximity to northern and eastern

shore customer base, proximity to existing or planned KIUC infrastructure, and the availability of municipal water supply. Based on their preliminary vetting, KIUC identified four sites for final consideration, including the proposed Project site. The Keālia site was eliminated due to topographical constraints and the existence of a historic property on the site. The Old Līhu'e Plantation mill site was eliminated because of cost. The Makai Anahola site was eliminated in favor of the proposed Project site to better conform to DHHL's 2009 regional plan. The proposed Project site was offered at a reasonable price, has easy highway access for customers and staff, and is close to the northern and eastern shore customer base and to existing and planned KIUC infrastructure. The site is also adjacent to the Anahola water system.

## **E. SUMMARY OF ENVIRONMENTAL IMPACTS**

The EA determined that the proposed Project would have no significant impacts, either directly, indirectly, or cumulatively, on topography, geology, soils, hydrology, climate and micro-climate, air quality, biota, noise, cultural resources and historic properties, natural hazards, scenic and aesthetic resources, public infrastructure, hazardous materials, transportation facilities, socioeconomics and environmental justice, and recreation and shoreline access. Threatened and endangered species and cultural resources required field surveys and consultation with other agencies to determine the potential effects, the details of which are included below.

### Threatened and Endangered Species

KIUC's acquired Rana Biological Consulting, Inc. to conduct a biological survey of the proposed Project site to determine the presence of candidate, threatened, and endangered species and critical habitat within the proposed project site. The survey, conducted on January 16, 2012, identified four species as likely present within the proposed Project site, including the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), and three listed avian species, the threatened Newell's shearwater (*Puffinus auricularis newellii*), the endangered Hawaiian petrel (*Pterodroma sandwichensis*), and the candidate band-rumped storm-petrel (*Oceanodroma castro*), collectively referred to as Hawaiian seabirds. The survey did not identify any federally delineated Critical Habitat for any species present on or adjacent to the proposed Project site. KIUC submitted the survey and proposed determination of effect to the U.S. Fish and Wildlife Service (USFWS) in January 2013. To avoid effects to the Hawaiian seabirds, KIUC will minimize external facility lighting during the seabird fall out season (September 15 to December 15) and shield lighting year round to minimize disorientation. To avoid effects to the Hawaiian hoary bat, KIUC will refrain from trimming wood vegetation taller than 15 feet that could serve as potential roosting habitat between June 1 and September 15. In accordance with Section 7 of the Endangered Species Act and based on the biological survey and consultation with the USFWS, RUS has determined that the proposed Project may affect, but is not likely to adversely affect threatened and endangered species. There will be no effect on critical habitat.

### Cultural and Historic Resources

KIUC acquired T.S. Dye & Colleagues, Archeologists, Inc. (T.S. Dye) to conduct an archeological inventory survey (AIS) of the proposed Project site, which consisted of background resource,

excavation of ten test trenches, and stratigraphic testing. The survey identified two historic-era raised agricultural ditches and areas of sugar cane field, which were collectively defined as Site No. 50-30-08-2160. The survey recommended the site as eligible for listing on the National Register of Historic Places under Criterion D (informational value); but proposed that the site no longer possessed sufficient integrity and had been sufficiently documented. KIUC also retained the firm, Native Kaua'i, LLC, to perform a Cultural Impact Assessment (CIA) pursuant to the requirements of Hawai'i Revised Statutes § 343. The CIA did not identify any ongoing Native Hawaiian cultural resources or practices within or near the proposed Project site. In October 2012, RUS submitted the surveys and a proposed finding of effect to the State Historic Preservation Officer (SHPO) and sixteen Native Hawaiian Organizations (NHOs). RUS did not receive any responses from the NHOs. The SHPO responded to RUS's submittal in November 2012, finding the AIS inadequate and offering comments, questions, and suggested additions to the AIS. Based on these comments and further consultation between RUS and the SHPO, T.S. Dye revised and resubmitted the AIS and resubmitted to the SHPO in March 2013. The SHPO responded on March 25, and concurred with the proposed finding of no adverse effect to historic properties. In accordance Section 106 of the National Historic Preservation Act and based on a review of the surveys and consultation with the SHPO and NHOs, RUS has determined that a finding of no adverse effect to historic properties is appropriate for the proposed Project.

#### **F. AGENCY AND PUBLIC INVOLVEMENT**

The availability of the draft EA for public review was announced in *The Garden Isle*, on May 19 and 26, 2013. The draft EA was made publicly available electronically on the RUS Website, <http://www.rurdev.usda.gov/UWP-EA.html>, and in hard copy at the Kapa'a Public Library, the Lihu'e Public Library, the Hawai'i State Library Hawai'i Documents Center, and the KIUC Headquarters. The thirty-day public comment period concluded on June 18, 2013, during which time RUS and DHHL received twenty-five comments, including seventeen comments from government agencies and eight comments from private citizens. The EA identifies thirteen of the comments as substantive; however they did not result in any changes to the content of the draft EA. Copies of the comments and responses are included in Chapter 9 of the EA.

#### **G. FINDING OF NO SIGNIFICANT IMPACT**

Based on its EA, RUS has concluded that the proposed Project would have no significant impacts to the human environment. RUS has concluded that the proposed Project may affect, but will not adversely affect federally listed threatened and endangered species and will have no effect on designated critical habitat. The proposed Project will have no adverse effect on historic properties listed or eligible for listing on the National Register of Historic Properties, and will not adversely or disproportionately affect minority populations and low-income populations.

In accordance with NEPA, as amended (42 U.S.C. § 4321 et seq.), the CEQ's regulations for implementing NEPA (40 CFR §§ 1500-1508), and RUS's Environmental Policies and Procedures,



as amended (7 CFR Part 1794), RUS has determined that the environmental impacts of the proposed Project have been adequately addressed and that no significant impacts to the quality of the human environment would result from construction and operation of the proposed Project. RUS's action will not result in significant impacts to the quality of the human environment; therefore, RUS will not prepare an Environmental Impact Statement. Any final action by RUS related to the proposed Project will be subject to, and contingent upon, compliance with all relevant federal and state environmental laws and regulations.

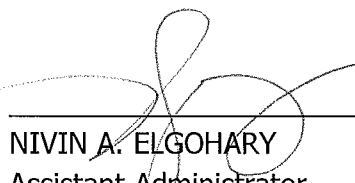
#### **H. RUS LOAN REVIEW AND RIGHT OF ADMINISTRATIVE REVIEW**

This FONSI is not a decision on KIUC's expected loan application and therefore not an approval of the expenditure of federal funds. Issuance of the FONSI and its notices concludes RUS's environmental review process in accordance with NEPA and RUS's Environmental Policies and Procedures. Final loan approval is dependent on the conclusion of the environmental review process in addition to financial and engineering review of the proposed Project. Issuance of the FONSI and publication of notices will allow for these reviews to proceed. There are no provisions to appeal this decision; legal challenges to the FONSI may be filed in federal district court under the Administrative Procedures Act (5 U.S.C. § 500 et seq.).

#### **I. APPROVAL**

This Finding of No Significant Impact is effective on signature.

Dated:

 10/30/13  
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NIVIN A. ELGOHARY  
Assistant Administrator  
Electric Programs  
Rural Utilities Service

#### **Contact Information**

For additional information on this FONSI and EA, please contact Ms. Emily Orler, Environmental Protection Specialist, at USDA, Rural Utilities Service, 1400 Independence Avenue, SW., Stop 1571, Washington DC 20250-1571, (202) 720-1414, or [emily.orler@wdc.usda.gov](mailto:emily.orler@wdc.usda.gov).