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DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

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March 17, 2015

Mr. Raymond Young
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Subject: Kawaiiloa Solar Farm Project, Application for a Special Use Permit; Response to Agency Comments (2014/SUP-6)

Dear Mr. Young,

Based on the application for a Special Use Permit for the proposed Kawaiiloa Solar Farm, the City and County of Honolulu Department of Planning and Permitting (DPP) has requested comments and recommendations from various public agencies, neighborhood boards and the public. This letter is intended to provide responses to the additional comments received subsequent to our last correspondence on 3/10/15.

Comments received from the State of Hawaii Division of Forestry and Wildlife (DOFAW) and Commission on Water Resource Management (CWRM) are replicated below (according to the comment numbers, as indicated on the attached copies), followed by SunEdison's response to each.

State of Hawaii Division of Forestry and Wildlife (DOFAW)

Comment #1:

It is not known how Hawaiian waterbirds interact with solar panels, but solar projects on the mainland have documented impacts to waterfowl and shorebirds. DOFAW recommends a wildlife education program that informs site personnel of species that may occur in the vicinity and could potentially be harmed by solar panels. Site personnel should document sightings of threatened or endangered species, as well as immediately report any mortality or injury of these species to DOFAW so that we may assist in avoiding and minimizing impacts.

Operations personnel at the site will be trained to document and report any downed wildlife (i.e., birds and bats) encountered during routine (ca. bi-weekly) site inspections. Training will include recognizing protected species, and establishing standardized protocols for documenting and reporting occurrences of downed wildlife. Protocols will include contacting USFWS and DOFAW if protected species are found to determine appropriate measures for avoiding and minimizing further impacts.

Comment #2:

*The Hawaiian hoary bat (*Lasiurus cinereus semotus*) also has the potential to occur in the vicinity of the proposed project. Hawaiian hoary bats roost in both exotic and native trees. If any trees are planned for removal during the bat breeding season there is a risk of injury or mortality to juvenile bats. To minimize impact the potential for impacts to this species, removal of woody plants greater than 15 feet in height should not occur between June 1 and September 15, which encompasses the bat birthing and pupping season. Although bat collisions with solar panels have not been documented in Hawaii, there has been some literature generated on the mainland that indicates that bats may perceive all smooth surfaces as water (Greif and Siemers 2010), which indicates a potential for bats to view the smooth, reflective surface of solar panels as resembling water. Any observations of Hawaiian hoary bats in the project area should be reported to DOFAW. DOFAW also recommends avoiding use of barbed wire, as Hawaiian hoary bat mortalities have been documented as a result of becoming entangled on barbed wire during flight.*

SunEdison concurs with USFWS' recommendation and agrees to not disturb, remove or trim woody plants greater than 15 feet (4.6 meters) tall during the bat birthing and pup rearing season (June 1 through September 15). As part of the training program described in response to Comment #1 (above), observations of Hawaiian hoary bats will be reported to DOFAW. In addition, the perimeter fence will not include barbed wire to avoid the potential for bats to be inadvertently snagged.

Comment #3:

DOFAW recommends that Kawailoa Solar consult with DOFAW and the US Fish & Wildlife Service (USFWS) throughout the planning process to determine if a threatened or endangered species is likely to be impacted by this project.

SunEdison will keep USFWS and DOFAW apprised of any changes in the proposed project, as needed to determine if there could be potential impacts to a threatened or endangered species.

Commission on Water Resource Management

Comment #1:

A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

No ground water will be developed as a source of supply for the proposed project.

Comment #2:

Planning: The application states that water needs will be met from either a rainwater catchment system, onsite irrigation ponds, or transported via truck. What is the source of water for the onsite irrigation ponds? The application should provide estimates of water quantities needed to support the proposed solar farm and sheep watering systems.

The onsite irrigation ponds that are referenced in the Special Use Permit application are existing features that are managed by Kamehameha Schools. As noted in Section 3.2 of the Special Use Permit application, a minimal amount water would be required for the solar farm operation, primarily for washing the panels. It is expected that rain will minimize the need for washing the panels, but if required, washing would likely occur no more than once per year and would use roughly 50,000 gallons of water. The exact requirements of the agricultural operation are not yet known, but the rancher would be responsible for obtaining any permits needed to support the operation, including those needed for water use.

Comment #3:

Ground Water: Our records shown there is an existing deep monitor well, Well No. 3604-001, located at TMK 6-1-005:001. It was drilled in 1994 by the U.S. Geological Survey. There is no pump installed in the well. No pump may be installed and the well may not be used for water production purposes unless the proper permits are obtained from the Commission. If this well will be impacted in any way by the proposed construction or operational activities, a plan to protect the well head or abandon/seal this well should be developed.

The existing well is not expected to be impacted by the proposed project.

We appreciate your efforts in support of processing the Special Use Permit application for the Kawaioloa Solar Farm project. Please contact me if you have any questions regarding the responses provided above, or if you require further information.

Sincerely,



CH2M HILL
Paul Luersen, AICP
Agent for SunEdison

Enclosures: Agency comment letters

cc: Wren Wescoatt, SunEdison (Kawaioloa PV, LLC)

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

March 4, 2015

MEMORANDUM

To: Russell Y. Tsuji, Land Administrator
DLNR, Land Division

From: Lisa J. Hadway, Administrator 
DLNR, Division of Forestry and Wildlife (DOFAW)

Subject: Comments on Application for a Special Use Permit, Solar Energy Facility,
Kawailoa, North Shore, Oahu

Thank you for the memo received on January 22, 2015 and the opportunity to comment on the proposed Kawailoa Solar, LLC facility. Apologies for the delayed response to your request. The proposed action includes the construction of a 384.1 acre solar energy facility by SunEdison on land owned by Kamehameha Schools. The project is located on land that is zoned for agricultural use, and is currently a combination of cultivated agricultural land and open space.

#1 There are a few small wetlands within the proposed project area that have been delineated by the National Wetlands Inventory, and we believe that there are more in the project area that have yet to be delineated. Associated with these and other nearby wetlands are known populations of state and federally-listed threatened and endangered waterbirds including the Hawaiian coot (*Fulica alai*), Hawaiian Stilt (*Himantopus mexicanus knudseni*), Hawaiian moorhen (*Gallinula chloropus*), and Hawaiian duck (*Anas wyvilliana*). Additionally, nearby efforts to restore Ukoa Pond and other wetland sites have the potential to increase the local populations of these species. It is not known how Hawaiian waterbirds interact with solar panels, but solar projects on the mainland have documented impacts to waterfowl and shorebirds. DOFAW recommends a wildlife education program that informs site personnel of species that may occur in the vicinity and could potentially be harmed by solar panels. Site personnel should document sightings of threatened or endangered species, as well as immediately report any mortality or injury of these species to DOFAW so that we may assist in avoiding and minimizing impacts.

#2 The Hawaiian hoary bat (*Lasiurus cinereus semotus*) also has the potential to occur in the vicinity of the proposed project. Hawaiian hoary bats roost in both exotic and native trees. If

#2 any trees are planned for removal during the bat breeding season there is a risk of injury or mortality to juvenile bats. To minimize the potential for impacts to this species, removal of woody plants greater than 15 feet in height should not occur between June 1 and September 15, which encompasses the bat birthing and pupping season. Although bat collisions with solar panels have not been documented in Hawaii, there has been some literature generated on the mainland that indicates that bats may perceive all smooth surfaces as water (Greif and Siemers 2010), which indicates a potential for bats to view the smooth, reflective surface of solar panels as resembling water. Any observations of Hawaiian hoary bats in the project area should be reported to DOFAW. DOFAW also recommends avoiding use of barbed wire, as Hawaiian hoary bat mortalities have been documented as a result of becoming entangled on barbed wire during flight.

#3 DOFAW recommends that Kawaiiloa Solar consult with DOFAW and the US Fish & Wildlife Service (USFWS) throughout the planning process to determine if a threatened or endangered species is likely to be impacted by this project. DOFAW appreciates the opportunity to provide comments on this project and requests that Land Division continue to seek input from DOFAW on impacts to wildlife.

If you have any questions, please contact John P. Vetter, Acting Wildlife Program Manager, at 808-587-4158.

cc: Dave Cowan, SunEdison

DAVID Y. IGE
GOVERNOR OF HAWAII



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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

March 4, 2015

REF: RFD.4126.3

TO: Russell Tsuji, Administrator
Land Division

FROM: W. Roy Hardy, Acting Deputy Director 
Commission on Water Resource Management

SUBJECT: Application for a Special Use Permit, Solar Energy Facility, Kawailoa, North Shore

FILE NO.:

TMK NO.: 6-1-005: Portion of 001 and 6-1-006: Portion of 001

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://www.hawaii.gov/dlnr/cwrn>.

Our comments related to water resources are checked off below.

- 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EPA as having high water efficiency can be found at <http://www.epa.gov/watersense/>.
- 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://hawaii.gov/dbedt/czm/initiative/lid.php>.
- 6. We recommend the use of alternative water sources, wherever practicable.
- 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>

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- 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf
- 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

Permits required by CWRM:

Additional information and forms are available at http://hawaii.gov/dlnr/cwrn/info_permits.htm.

- 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- 11. A Well Construction Permit(s) is (are) required before any well construction work begins.
- 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 14. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.
- 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.
- 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

OTHER:

Planning: The application states that water needs will be met from either a rainwater catchment system, onsite irrigation ponds, or transported via truck. What is the source of water for the onsite irrigation ponds? The application should provide estimates of water quantities needed to support the proposed solar farm and sheep watering systems.

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If there are any questions, please contact Lenore Ohye of the Planning Branch at 587-0216 or Ryan Imata of the Ground Water Regulation Branch at 587-0225.