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COMMISSION ON WATER RESOURCE MANAGEMENT

RYAN K.P. KANAKAʻOLE

September 27, 2024

Endangered Species Recovery Committee
State of Hawaiʻi
Honolulu, Hawaiʻi

SUBJECT: Division of Forestry and Wildlife Summary of the Kahuku Wind Power Draft Key Concept of New Proposed Habitat Conservation Plan in the Ahupuaʻa of Kahuku on the island of Oʻahu

Dear Committee Members,

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) is respectfully requesting the Endangered Species Recovery Committee (ESRC) review and provide recommendations regarding the Kahuku Wind Power Draft Key Concept of New Proposed Habitat Conservation Plan ("Kahuku HCP Amendment Concept"). The Kahuku HCP Amendment Concept details the proposed amendments to the Kahuku Wind Power Habitat Conservation Plan dated March 2010 ("Kahuku HCP") and Incidental Take Licenses (ITL-10), expiring June 7, 2030 regarding increasing take of Hawaiian hoary bat (ʻōpeʼapeʼa) and Hawaiian petrel (ʻuaʼu), updating corresponding mitigation for those Covered Species, and extending the term of ITL-10 to 2050.

The Kahuku HCP Amendment Concept was prepared by Terraform on behalf of Kahuku Wind Farm, LLC (licensee) and represents the initial concepts for extending and amending the Kahuku HCP and ITL-10. DOFAW responded to receipt of the Kahuku HCP Amendment Concept and provided comments in coordination with USFWS, and met with both Terraform and Tetra Tech, a consultant for Terraform, to discuss these comments. DOFAW requests the ESRC review and provide recommendations on the Kahuku HCP Amendment Concept.

Summary of Kahuku Wind Power Draft Key Concept of New Proposed Habitat Conservation Plan dated July 2024

I. Background

Kahuku Wind Power LLC constructed the Kahuku Wind Project in 2010 and 2011, and the project became commercially operational on March 23, 2011. The project is a 30-megawatt (MW) commercial wind energy generation facility consisting of 12 wind turbines which sells electricity to the Hawaiian Electric Company (Hawaiian Electric). An Incidental Take License and associated Habitat Conservation Plan (HCP) was approved by Board of Land and Natural Resources on June 7, 2010 for the project. ITL-10 currently covers the incidental take of eight threatened and endangered species, collectively referred to as the Covered Species[1], and will expire on June 7, 2030.

II. Proposed Incidental Take, Avoidance, Minimization, Mitigation, and Adaptive Management Actions

A. The licensee requests an amendment to the Kahuku HCP and ITL-10 to increase permitted incidental take of ʻōpeʻapeʻa by adding 43 ʻōpeʻapeʻa to ITL-10. The licensee requests to extend the license term 20 years beyond the current license term to 2050.

To date, the project has only reported take of ʻōpeʻapeʻa, Hawaiian hoary bat (*Lasiurus semotus*), and there has been no reported take of other Covered Species at the project site. The Kahuku HCP and ITL-10 authorize the higher tier total incidental take of **23 ʻōpeʻapeʻa**[2] and **the project currently has a total estimated incidental take of 25 ʻōpeʻapeʻa**, which means the project exceeded the higher tier for total estimated incidental take before the current license term of June 7, 2030. The licensee is seeking an amendment to the Kahuku HCP and ITL-10 to increase the total permitted incidental take by 43 ʻōpeʻapeʻa for a total of 66 ʻōpeʻapeʻa until 2050. Currently mitigation for Tier 2 is set to start in September 2024 at the Helemano Section of the ʻEwa Forest Reserve and run for 5 years. In addition to the need for increased take coverage for the Hawaiian hoary bat, the license requests to extend the license term until 2050.

B. The licensee requests the incidental take of eight (8) ʻuaʻu be included to their amended incidental take license until the year 2050.

To date, the project has had no reported take of ʻuaʻu, Hawaiian petrel (*Pterodroma sandwichensis*), but other wind facility projects on Oʻahu have reported take of ʻuaʻu. Currently, the Kahuku HCP and ITL-10 authorize a baseline tier total incidental take of eight (8)

[1] ITL-10 includes the Covered Species Hawaiian petrel (ʻuaʻu), Newell's shearwater (ʻaʻo), Hawaiian duck (koloa maoli), Hawaiian stilt (ʻaeʻo), Hawaiian coot (ʻalae keʻokeʻo), Hawaiian moorhen (ʻalae ʻula), Hawaiian bat (ʻōpeʻapeʻa), and Hawaiian short-earred owl (pueo).

[2] ITL-10 authorizes two tiers of total estimated take of ʻōpeʻapeʻa, baseline and higher. These tiers trigger different mitigation requirements in the Kahuku HCP. The Kahuku HCP describes how the licensee determined that including juveniles in the total estimated take limits actually decreases the total estimated take for each tier below the baseline and higher tier values in ITL-10. Therefore, baseline total estimated take is 21 ʻōpeʻapeʻa, actually equates a total of 15 ʻōpeʻapeʻa in the Kahuku HCP (12 adult ʻōpeʻapeʻa and 9 juvenile ʻōpeʻapeʻa). ITL-10 authorizes higher total estimated take of 32 ʻōpeʻapeʻa, which actually equates a total of 23 ʻōpeʻapeʻa in the Kahuku HCP (18 adult ʻōpeʻapeʻa and 14 juvenile ʻōpeʻapeʻa).

ʻuaʻu and a higher tier total incidental take of 12 ʻuaʻu until June 7, 2030. The licensee wants to amend the Kahuku HCP and ITL-10 to allow for the incidental take of eight (8) ʻuaʻu based on calculations estimating six (6) predicted direct take of ʻuaʻu and two (2) indirect take of ʻuaʻu until the year 2050.

C. The licensee proposes using Smart curtailment and tower mounted bat deterrents to avoid and minimize incidental take of ʻōpeʻapeʻa at the project site.

Research shows that effective population size[3] of Hawaiian Hoary bats on O'ahu is less than 100. The licensee proposes to use "Smart Curtailment" which can include redistributing curtailment based on variables such as time of night and weather variables beyond wind speed which specifically target the periods of risk. The licensee continues to consult with USGS regarding more effective species-specific curtailment hours for this project. Tower mounted bat deterrents will be installed on every turbine (the current GE turbines do not allow for nacelle-based deterrents).

D. The licensee does not propose any changes to the post-construction monitoring methods currently used at the project site.

The licensee does not propose changing any of the post-construction monitoring methods. Currently, the licensee searches all turbines out to 35 m three times per week with vegetation management maintained to high visibility, except at Turbine 3 which has a steep slope. Searcher efficiency trials are conducted throughout the year using surrogates for Covered Species. The license may make changes to the length of the turbine blades, but those changes are not discussed in this document.

E. The licensee proposes to continue acoustic monitoring and implement thermal monitoring for ʻōpeʻapeʻa at the project site.

The licensee proposes to continue annual acoustic monitoring, which currently occurs at four (4) locations (turbines 2, 5, 9, and 12) using Song Meter SM4BAT-FS and SMM-U2 microphones, as well as to install thermal monitors at four (4) turbine locations. Possible objectives of thermal monitoring at the project site include (1) determine flight height of bats within the measurable portion of the rotor swept area, (2) document behavior responses to the bat deterrents, and (3) compare thermal imaging to acoustics for bat activity patterns at the site. DOFAW, with consultation with USGS and the ESRC, advised the licensee that thermal monitoring is critical for monitoring bat behavior around the turbines and with deterrents. DOFAW recommended incorporate acoustic detectors at different heights on the turbine, not just at ground height. Recorded ʻōpeʻapeʻa fatalities at the project site have occurred between March through October.

The licensee intends to request changes in rho (ρ) value which is defined as a relative mortality rate that is used to adjust for operational changes if the level of effect is known or can be determined, if warranted based on the data (e.g., thermal imaging data on bat flight heights, results of post-construction monitoring, etc.).

[3] Effective population size is not necessarily the same as actual population size. The effective population size characterizes the evolutionary processes (inbreeding, genetic drift) in a population based on research and modeling of the species ecology and life history.

F. The licensee seeks to continue mitigation for the additional 43 ōpeʻapeʻa at the Helemano Section of the ʻEwa Forest Reserve. The licensee has completed mitigation for ʻuaʻu in the Kahuku HCP and does not propose additional mitigation in the amendment.

The licensee is currently working through the final steps to implement their habitat restoration in their Tier 2 bat mitigation plan at 176 acres of the Helemano Section of the ʻEwa Forest Reserve (Helemano Mitigation Site) to mitigate for incidental take of eight (8) ōpeʻapeʻa under the Kahuku HCP. Mitigation for Tier 2 is set to start in September 2024 at the Helemano Mitigation Site and run for 5 years (until 2030). The licensee proposes to continue mitigation in the Helemano Mitigation Site until 2050. The licensee explains that continued management in the Helemano Mitigation Site is necessary to ensure the mitigation site is maintained overtime for the benefit of ʻōpeʻapeʻa. The licensee further explains that managing 176 acres until 2050 would support 2.5 generations of bats and equate to mitigation credit of 21.8 ʻōpeʻapeʻa. The licensee proposes to remove 2.1 miles of barbed wire along Plantation Road, which lies adjacent to the Helemano Mitigation Site, and explains that removal of the barbed wire may prevent approximately 2.8 ʻōpeʻapeʻa fatalities through 2050.

For the incidental take of the remaining 18.4 ʻōpeʻapeʻa, the licensee proposes (1) expand habitat restoration actions into 73.34 acres currently used as a control site for the Tier 2 bat mitigation plan, and (2) purchase or protect bat habitat.

The mitigation in the Kahuku HCP for ʻuaʻu has already been completed for the eight (8) ʻuaʻu requested take limit. No additional mitigation is proposed since no additional take is requested.

G. The licensee proposes increasing cut-in speeds at certain times of the years, redistributing curtailment based on acoustic or thermal imaging data, adding additional deterrents, and other measures available as potential adaptive management triggers.

If ʻōpeʻapeʻa fatality estimates are projected to exceed authorized incidental take limits, then the licensee proposes to decrease fatalities at the project site by:

- Increasing cut-in speeds, potentially at certain times of night or year;
- Redistributing curtailment based on acoustic or thermal imaging data on ʻōpeʻapeʻa activity;
- Adding deterrents or testing deterrents at nacelles; or
- Using other measures available.

III. DOFAW Recommendations

Research shows that effective population size of Hawaiian Hoary bats on O'ahu is very low and there are few mitigation options on Oʻahu for ʻōpeʻapeʻa, therefore DOFAW recommends the licensee implement effective avoidance and minimization measures before requesting additional take of ʻōpeʻapeʻa. These recommendations include the use of deterrents on every turbine paired with thermal imaging and “Smart curtailment.”

For mitigation of ʻōpeʻapeʻa, DOFAW recommends following the Hawaiian Hoary Bat Guidance for Wind Energy Projects updated in January 2021. Acreage proxy is but a minimum and should be used in conjunction with actions reflecting high quality habitat restoration that will

enhance roosting habitat, edge habitat, foraging areas and habitat. Since tiers are not being proposed, ESRC and agencies will need to ensure that the mitigation plan that is included in the HCP amendment at the time of voting is fully developed and adequate to provide net environmental benefit, and that there are adequate adaptive management measures HCP goals are not achieved. Mitigation should be done in advance of incidental take to ensure no net loss of the Covered Species. If mitigation occurs after incidental take occurs then there is a temporary decrease in the overall population.

DOFAW recommends the licensee reevaluate their post-construction monitoring methods with the best available science.

DOFAW recommends that changes in rho due to minimization measures be assessed with thermal imaging to document bat activity in regard to deterrents and or curtailment. Assessing the trajectory of take estimates after deterrents are used at wind facilities requires many years of data to rule out interannual variation. A bat deterrent efficacy study with a control should be conducted at the project site to provide the necessary output you need to determine rho.

If you have any questions, please contact Kinsley McEachern, Protected Species Habitat Conservation Planning Associate at laurinda.k.mceachern.researcher@hawaii.gov.

Respectfully submitted,

for DGS Robert Hauff

DAVID G. SMITH
Administrator