State of Hawai`i
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife (DOFAW)
Honolulu, Hawaii 96813

December 16, 2014

Endangered Species Recovery Committee
State of Hawaii
Honolulu, Hawaii

Committee Members:

SUBJECT: Request for comments from the Endangered Species Recovery Committee on interim downed wildlife monitoring at First Wind facilities on O'ahu and Maui

BACKGROUND:

Downed wildlife monitoring is conducted at all facilities in possession of an Incidental Take License (ITL) in the State of Hawai'i. First Wind currently has four facilities in operation with State approved ITLs and Habitat Conservation Plans (HCP): Kaheawa Pastures Wind Energy Generation Facility (KWP I), Maui; Kaheawa Wind Power II Wind Energy Generation Facility (KWP II), Maui; Kahuku Wind Power (Kahuku), O'ahu; Kawailoa Wind Power (Kawailoa), O'ahu. The purpose of conducting downed wildlife monitoring is to develop a species mortality estimate that is as accurate as possible.

The HCPs for all these facilities outline requirements for intensive periods of downed wildlife monitoring interspersed with less intensive interim monitoring periods. Although the HCPs provide guidelines for this interim monitoring, they do not outline specific protocols. First Wind will present a proposal for interim monitoring and is seeking comments from the ESRC per the specifications in the HCPs.

For reference, relevant text from each HCP is provided below:

Kahuku:

Intensive searches will be conducted for the first two years under the direction of a qualified biologist, after which it is expected that the approach will be reduced to a sampling method based on the results obtained up to that point; Systematic searches of 50% reduced effort will subsequently be conducted at 5-year intervals and a further reduced but regular sampling method conducted during the interim years. In subsequent years, monitoring may consist of a reduced level of effort, consisting of smaller search plots at a subset of turbines, with plots being relocated periodically to sample a variety of locations. Depending upon the findings, the location and focus of the ongoing effort can be modified, with the concurrence of the USFWS and DLNR, to target areas or times of particular interest.

The initial period of fatality monitoring at Kahuku Wind Power will entail frequent, systematic searches of the area beneath each turbine by trained technicians. Carcass removal and searcher efficiency trials will be conducted within this period. Subsequently, systematic sampling at a pre-determined reduced effort will be conducted for one year at 5-year intervals with attendant SEEF trials and carcass removal trials. A regular rapid assessment technique will be developed for the interim years to determine direct take occurring between years of systematic monitoring.

Spatial and temporal trends on site should also be well understood at the end of the two-year intensive sampling period, enabling correction factors to be appropriately applied. Depending on findings, the correction factors may enable a decrease or modification of sampling effort (e.g. increase in search intervals or decrease in the number of turbines searched), identify specific turbines or times of the year when sampling effort should be concentrated, and inform adaptive management considerations. Discussion with ESRC, USFWS and DLNR has indicated a preference for the reallocation of effort whereby mitigation efforts are increased in exchange for a reduction in fatality monitoring. It is expected that the systematic monitoring effort will be scaled back by about 50%. It is also proposed that systematic fatality monitoring after the post two-year intensive sampling period be conducted at the beginning of 5-year bins; years 6, 11 and 16, resulting in a total of 5 years of systematic monitoring during the life of the project. SEEF trials and carcass removal trials will be repeated during these years to determine if any of the variables have changed over time.

In addition to this reduced monitoring effort, regular rapid assessment (RRA) of each search plot will be conducted in the interim years. This may consist of personnel searching each plot to 75% turbine height on an ATV. The frequency at which the surveys take place will be determined at the conclusion of the carcass removal trials for that 5-year period. SEEF trials will also be conducted to determine the searcher efficiency of the chosen RRA method. All adjustments to direct take found in the interim years will use the estimates from the SEEF and carcass removal trials for that 5-year time period. The systematic monitoring during the first year of the 5-year period and the subsequent 4-year rapid assessment is designed to inform the Applicant if the take is still occurring at Baseline levels or whether take has moved to a Higher or Lower tier based on 5-year and 20- year take limits outlined in the HCP. Five-year total direct take levels will be determined for each 5-year bin while 20-year total direct take levels will be a cumulative total from the start of project operation

Kawailoa:

The 3-year time period will begin after the search protocol has been finalized and approved by USFWS and DOFAW. However, intensive searches may continue beyond three years until DOFAW, USFWS and ESRC have agreed that a sufficient basis has been established for reducing search intensity. The intensive years of monitoring are proposed to be subsequently conducted at 5 year intervals at Years 6, 11 and 16. New technologies or search methods may be incorporated under adaptive management in

consultation with USFWS and DOFAW if they are demonstrated to increase the efficiency of the monitoring or enable more accurate take estimates to be obtained. Any change in monitoring measures will require the approval of USFWS and DOFAW prior to implementation.

The search effort during the non-intensive years will be reduced based on results obtained during the intensive search years and subject to approval from USFWS and DOFAW. Similarly, new technologies or search methods may be incorporated under adaptive management in consultation with USFWS and DOFAW if they increase the efficiency of the monitoring. Any change in monitoring measures will require the approval of USFWS and DOFAW prior to implementation.

After the initial 3-year intensive sampling period, intensive sampling with SEEF and CARE trials will occur at 5-year intervals, to determine if conditions have changed over time. Intensive sampling protocols may be modified over the life of the project to make searches more efficient as data and new technologies become available. All modifications will be made with the concurrence of USFWS and DOFAW. A reduced, periodic sampling regime will be conducted in the interim years.

The goal of the intensive monitoring period is to provide a robust estimate of the ongoing mortality rates of the covered species, determine whether take is occurring at or below the Baseline level, and in turn whether mitigation is sufficient to offset take over the life of the project. Spatial and temporal variation on site should also be well understood at the end of the second or third year of intensive sampling, enabling reasonable correction factors to be appropriately applied. Depending on findings, the correction factors may enable a decrease or modification of sampling effort (e.g., increase in search intervals or decrease in the number of turbines searched), identify specific turbines or times of the year when sampling effort should be concentrated, and inform adaptive management considerations. As a general goal, it is expected that the systematic monitoring effort will be scaled back by about 50%. It is also proposed that intensive fatality monitoring be repeated after the three year intensive sampling period be conducted at the beginning of 5-year bins; e.g., years 6, 11 and 16, resulting in a total of 6 years of intensive monitoring during the life of the project. SEEF trials and carcass removal trials will be repeated during these years to determine if any of the variables have changed over time. All adjustments to direct take will use the most recent estimates from the SEEF and carcass removal trials.

In addition to this reduced monitoring effort, regular rapid assessments (RRA) of each search plot will be conducted in the interim years. The frequency at which the surveys take place will be determined at the conclusion of the carcass removal trials for that 5-year period. SEEF trials will also be conducted to determine the searcher efficiency of the chosen RRA method. All adjustments to direct take found in the interim years will use the estimates from the SEEF and carcass removal trials for that 5-year time period.

Starting from Year 6, the intensive monitoring during the first year of the 5-year period and the subsequent 4-year rapid assessment is designed to inform the Applicant if the

take is still occurring at Baseline levels or whether take has moved to a Higher or Lower tier based on 5- year and 20-year take limits outlined in the HCP. Five-year total direct take levels will be determined for each 5-year bin while 20-year total direct take levels will be a cumulative total from the start of project operation. This long-term sampling regime will be refined by Kawailoa Wind Power in consultation with ESRC, USFWS, DLNR, statisticians and wind energy experts after the initial 3-year intensive sampling period.

KWPI:

Intensive searches will be conducted for the first two years, after which the approach may be modified based on the results obtained up to that point;

In subsequent years, if less intensive monitoring measures are agreed to by USFWS and DLNR, monitoring will consist of a reduced level of effort, consisting of smaller search plots at a subset of turbines, with plots and turbines being relocated periodically to sample a variety of locations. Depending upon the findings, the location and focus of the ongoing effort can be modified, with the concurrence of the USFWS and DLNR, to target areas or times of particular interest.

Intensive sampling will be conducted during the first two years of operation, and will include the peak fledging periods of the subject species (seabirds in October-November and Nene in May-June). Depending upon the results, and subject to the review and approval of USFWS and DOFAW, intensive monitoring may be extended beyond this initial period, modified and extended, or replaced with a less intensive monitoring protocol that has been developed based on the results of intensive monitoring.

The resulting take determination will provide a basis for establishing the appropriate level of monitoring and mitigation for future years of operation, as approved by USFWS and DLNR.

KWPII:

The Applicant proposes to document bird and bat injuries and fatalities, including Covered and non-Covered Species, following methods that have been used effectively at other wind energy generation facilities in Hawai'i and the continental United States. Another alternative is for KWP II to contribute to a cooperative monitoring program led by DOFAW (total costs estimated to be approximately $225,000 to $250,000 per year). In this program, DOFAW will establish the monitoring protocol and provide personnel to conduct the monitoring. If the program is established, KWP II will contribute to DOFAW an amount up to its budget allocation for self performing the monitoring. Additional funding for the program may be provided by DOFAW or obtained by DOFAW through grants or other sources.

Intensive searches will be conducted for the first three years under the direction of a qualified biologist, after which the approach may be reduced to a sampling method based on the results obtained up to that point, subject to the approval of DOFAW and USFWS. For example, systematic searches of 50% reduced effort could subsequently be conducted at five-year intervals and a further reduced but regular sampling method conducted during the interim years Any reduction in searcher effort will first be evaluated using data collected up to that point, and final decisions on searcher effort reduction will require the approval of DOFAW and USFWS, and ESRC, when applicable.

Third party quality control of data analysis and the proctoring of SEEF trials will cost $30,000/yr during intensive monitoring years.

In subsequent years, monitoring may consist of a reduced level of effort, consisting of smaller search plots at a subset of turbines, with plots relocated periodically to sample a variety of locations. Depending upon the findings, the location and focus of the ongoing effort can be modified, with the concurrence of the USFWS and DLNR, to target areas or times of particular interest.

The initial period of fatality monitoring at KWPII will entail frequent, systematic searches of the area beneath each turbine by trained technicians. Carcass removal and searcher efficiency trials will be conducted within this period. Subsequently, intensive sampling at a predetermined reduced effort will be conducted for one year at 5-year intervals with attendant SEEF trials and carcass removal trials. A regular rapid assessment technique will be developed for the interim years to determine direct take occurring between years of intensive monitoring.

If sufficient data is collected in the first year, search plots and search frequencies may be adjusted to enable the most efficient sampling regime. The change in sampling regime will be determined by KWP II in consultation with DLNR, USFWS and members of the ESRC. However, the same sampling regime as Year 1 will be continued if data indicates that more sampling is needed before any change can be made.

Spatial and temporal trends on site should also be well understood at the end of the three year intensive sampling period, enabling correction factors to be appropriately applied. Depending on findings, the correction factors may enable a decrease or modification of sampling effort (e.g. increase in search intervals or decrease in the number of turbines searched), identify specific turbines or times of the year when sampling effort should be concentrated, and inform adaptive management considerations. Discussion with ESRC, USFWS and DLNR has indicated a preference for the reallocation of effort whereby mitigation efforts are increased in exchange for a reduction in fatality monitoring. It is expected that the intensive monitoring effort will be scaled back by about 50%. It is also proposed that intensive fatality monitoring after the post three-year intensive sampling period be conducted at the beginning of 5-year bins; years 6, 11 and 16, resulting in a total of 6 years of intensive monitoring during the life of the project (Table 2). SEEF trials and carcass removal trials will be repeated during these years to determine if any of

the variables have changed over time (Table 2). All adjustments to direct take will use the most recent estimates from the SEEF and carcass removal trials.

In addition to this reduced monitoring effort, regular rapid assessment (RRA) of each search plot will be conducted in the interim years. This may consist of personnel searching each plot to 75% turbine height on an ATV (all terrain vehicle). The frequency at which the surveys take place will be determined at the conclusion of the carcass removal trials for that 5-year period. SEEF trials will also be conducted to determine the searcher efficiency of the chosen RRA method. All adjustments to direct take found in the interim years will use the estimates from the SEEF and carcass removal trials for that 5-year time period. The intensive monitoring during the first year of the 5-year period and the subsequent 4-year rapid assessment is designed to inform the Applicant if the take is still occurring at Tier 1 levels or whether take has moved to a Tier 2 or Lower tier based on 5-year and 20-year take limits outlined in the HCP. Five-year total direct take levels will be determined for each 5-year bin while 20-year total direct take levels will be a cumulative total from the start of project operation.

This long-term sampling regime will be refined by KWPII in consultation with ESRC, USFWS, DLNR, statisticians and wind energy experts after the initial 2-year intensive sampling period.

Respectfully Submitted,

Lisa J. Hadway, Administrator
Division of Forestry and Wildlife