U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax: (808) 973-2941

February 28, 2011

Mr. Allen G. Kam
AICP, HIREP EIS Manager
State of Hawai'i, Department of Business, Economic Development
and Tourism, Renewable Energy Branch, State Energy Office
P.O. Box 2359
Honolulu, HI 96804

Dear Mr. Kam,

The Protected Resources Division (PRD) and the Habitat Conservation Division (HCD) of the NOAA Fisheries Pacific Islands Region (PIRO) provides the following comments on the Hawaii Interisland Renewable Energy Project proposal for an interisland power cable connecting the islands of Lana'i, Maui, Moloka'i, and O'ahu.

PRD is the division of PIRO that is responsible for the management and conservation of protected marine species throughout the Pacific Islands Region. In Hawaii, PRD manages many marine species protected under the Endangered Species Act (ESA) and the Marine Mammal Protection ACT (MMPA), including one pinniped species, five sea turtle species, and twenty three cetacean species.

Species protected under the ESA that are found within the proposed project area include the humpback whale (*Megaptera novaeangliae*), Hawaiian monk seal (*Monachus schauinslandi*), green sea turtle (*Chelonia mydas*), and hawksbill turtle (*Eretmochelys imbricata*). In addition to these species, several ESA-listed pelagic species are found within Hawaiian waters and may occur within the project area. These are the sperm whale (*Physeter macrocephalus*), fin whale (*Balaenoptera physalus*), sei whale (*Balaenoptera borealis*), olive ridley turtle (*Lepidochelys olivacea*), loggerhead turtle (*Caretta caretta*), and leatherback turtle (*Dermochelys coriacea*).

All marine mammals are protected under the MMPA and many species are known to occur within the project area. Some more commonly sighted species in this area include the bottlenose dolphin (*Tursiops truncatus*), spinner dolphin (*Stenella longirostris*), spotted dolphin (*Stenella attenuata*), rough-toothed dolphin (*Steno bredanensis*), short-finned pilot whale (*Globicephala macrorhynchus*), melon-headed whale (*Peponocephala electra*), and false killer whale (*Pseudorca crassidens*). Of particular relevance to this proposed project, please note that the distinct population segment of Hawaiian insular false killer whales is currently proposed to be listed as an endangered species under the ESA.

In addition to these protected species, PRD is responsible for critical habitat designated for the Hawaiian monk seal. The monk seal's designated critical habitat is currently located solely within the Northwestern Hawaiian Islands; however, our agency is in the process of re-designating critical habitat for the monk seal to include waters surrounding the main Hawaiian Islands, including those within the project area.

NOAA Fisheries was also recently petitioned to list 82 species of coral under the ESA; nine of these species are found within Hawaiian waters. Our agency is currently evaluating the petition to determine whether any of these species warrant ESA listing.

The impact of the proposed power cable on protected marine species is a concern for our agency, both from the short- and long-term impacts of the cable installation, as well as the potential long-term effects of high-level electromagnetic fields emanating from the cable on the seafloor. These concerns are outlined below.

The acoustic impacts from installing the cable would occur from the proposal to bury it in the seafloor rather than laying it along the bottom. This method would likely require significant amounts of dredging through softer substrates as well as blasting through harder substrates such as rock or coral. Because the cable would be located in an area of the Hawaiian Islands Humpback Whale Sanctuary where densities of whales are the highest, impacts to humpback whales and the potential for disrupting their breeding, calving, and rearing their young may be significant.

The acoustic impacts could also disrupt the foraging behaviors of the Hawaiian monk seal, a critically endangered species whose population numbers are still declining. Penguin Bank is known to be a primary foraging area for the seal, and many seals have been documented to use the shoreline areas of nearby La'au Point and 'Ilio Point on the island of Moloka'i to haul out and rest after foraging. Pupping and rearing of young may also occur at these sites and these behaviors could be disrupted by the installation of the power cable at the shoreline landing sites.

In addition to the short-term acoustic impacts, PRD is concerned about the potential for long-term impacts from high electromagnetic fields. These impacts are not well understood and it is unclear exactly what effect these fields may have on protected marine species, their prey, and on their predators such as sharks. Studies conducted on a similar power cable installation in the waters off of Scotland demonstrated that certain species of fish were attracted to the power cable. Sharks, rays, and skates are known be particularly sensitive to electromagnetic fields, and could be attracted to the cable in higher densities than normal, resulting in the potential for increased predation on protected species in the project area. Other species of fish may be repelled by the electromagnetic fields, including prey species that protected marine species depend upon for food. It is also possible that the power cable could affect the navigational and homing abilities of sea turtles, which use Earth's electromagnetic field to locate and return to their natal nesting sites.

While there have been few definitive studies demonstrating the potential for or extent of these impacts, the uncertainty surrounding the effects of high electromagnetic fields in the marine environment should warrant a precautionary approach until further studies can answer these questions.

The Habitat Conservation Division of the NOAA Fisheries Pacific Islands Region (HCD) has the responsibility to conserve, protect, and restore marine habitat and coastal ecosystems in the Pacific Islands Region. The HCD is mandated to conserve Essential Fish Habitat (EFH) under the Magnuson-Stevens Act (50 CFR 600). EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The Western Pacific Fishery Management Council has identified important species of bottomfish, coral reef ecosystems, crustaceans, pelagics, and precious corals as management unit species (MUS) in the Hawaii Archipelago Ecosystem Plans and Pelagic Ecosystem Plans in accordance with Magnusson-Stevens Act. These species encompass a range of marine habitats including Habitat Areas of Particular Concern (HAPC), some of which superimpose areas where the HIREP Wind Project has proposed the installation of undersea cables. Our agency is concerned with the potential temporary and permanent impacts to coral reef ecosystems and benthic habitats as well as the possibility of behavioral changes in pelagic MUS from the proposed undersea cable laying route and use.

The project has the potential to impact shallow, rocky reef, and near shore slope habitat. Installation of undersea cables may adversely affect coral reef ecosystems in the proposed project areas. An adverse effect is defined as any impact that reduces quality and/or quantity of EFH (50 CFR 600.910). Such a finding will emphasize the need to ensure that the best approach has been developed to avoid and minimize environmental impacts. For those unavoidable impacts, compensatory mitigation to replace the ecosystem functions that have been lost will be required. The current methods for installing underwater cables include dredging, plowing, jetting, blasting, and directional drilling. These methods could permanently damage coral reef ecosystems. Altering the geomorphology of coastal habitats can increase sedimentation and shoreline erosion. Temporary dispersal of suspended sediments from undersea cable installations accumulated with other temporary and permanent in water work, shoreline erosion, and scoring could potentially negatively affect coral reefs in the impacted area, reducing the quality and quantity of EFH. Coral reef ecosystems provide important forage and protection for MUS fish and invertebrates in a variety of their life stages. Installing undersea cables may also result in conversion of benthic EFH. Sea floor disturbance could cause permanent loss of hard bottom, and soft sediment habitats.

A as part of the federal action compliance, the Fish and Wildlife Coordination Act (43 CFR 24.6) requires you coordinate with US Fish and Wildlife Service and the National Marine Fisheries Service. Depending on the scope of work and expected impacts this may requires an assessment by the Services'.

Although NMFS is primarily concerned with potential temporary and permanent impacts to coral reef ecosystems and benthic habitats, we are also concerned with permanent behavioral changes in pelagic MUS from the potentially high electromagnetic fields (EMFs) produced by the undersea cable. Studies indicate that many marine species such as yellowfin tuna, eels, sharks, and skates utilize the earth's natural EMFs for navigation and are particularly sensitive to EMFs. Studies conclude that these species could be attracted to the cable resulting in increased predation. In addition, other species may avoid the high EMFs areas further resulting in species behavioral changes. We advise a precautionary approach until additional research is conducted and more is

known about EMF impacts to MUS and suggest avoidance of species critical migratory paths to ensure the EMFS do not create physical or electromagnetic barriers. It will also be important to provide clarity in the operational and maintenance considerations for this proposal and removal of the system once no longer being used.

We look forward to working with DBEDT and DOE for the HIREP Wind Project to avoid adverse impacts to EFH and federally protected marine species. If it is determined that the project may impact EFH, an EFH Assessment may be required as part of the U.S. Army Corps of Engineers permit evaluation. Likewise, if it is determined that the project may impact ESA- or MMPA-marine protected species, various statutory and regulatory prohibitions and requirements may apply. We would be happy to discuss these processes with you in greater detail, as necessary.

Thank you for the opportunity to comment on the Hawaii Interisland Renewable Energy Project proposal. We hope this information assists your analysis of the potential impacts to protected marine species and essential fish habitat and in developing mitigation measures to reduce these impacts should the project move forward.

Sincerely,

Lisa Van Atta, Assistant Regional Administrator
for Protected Resources

Gerry Davis, Assistant Regional Administrator
for Habitat Conservation

cc: U.S. Fish and Wildlife Service
State of Hawai'i, Department of Land and Natural Resources, Division of Aquatic Resources
U.S.E.P.A Region 9