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**MEMORANDUM**

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**THROUGH:** Mary Boomgard, D/OIP

**FROM:** Diane Brown, SEA/OIP  
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**SUBJECT:** Environmental and Social Assessment  
Kipeto Energy Limited/Kenya  
615-2012-672-IG

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**PROJECT AND COMPANY:** Kipeto Energy Limited (“KEL” and/or the “Borrower”) is seeking a \$232.56 million OPIC Investment Guaranty to construct and operate a 100 MW wind power generating facility located about 18 kilometers northwest of the town of Kajiado, Kenya and about 70 kilometers southwest of Nairobi (the “Project”). Total project costs are \$323 million.

KEL is a Kenyan registered project SPV that was established to develop the Kipeto Wind Farm. Other major shareholders in the Project include the African Infrastructure Investment Managers (AIIM), which has a 55% ownership share, the International Finance Corporation (IFC) and Craftskills Wind Energy, which each have a 20% ownership. KEL will allocate 5% of the Project’s profits to the local Maasai community.

AIIM is the manager of two Funds investing in the Project; African Infrastructure Investment Fund Mauritius (“AIIF”) and African Infrastructure Investment Fund 2 (“AIIF2”). Both are equity capital funds designed to invest in infrastructure throughout Sub-Saharan Africa. AIIM was established in 2000 as a joint venture between the Macquarie Group and Old Mutual Investment Group (Pty) Ltd. As of June 30, 2014 AIIM has \$1.21 billion of Funds under management.

Craftskills is a Kenyan wind energy company whose core business is the manufacture of affordable wind power generators, direct current LED fittings, and solar bulbs.

**Project Description**

The project will consist of 60 General Electric (GE) 1.7-103 model wind turbines, which will be located on a 70km<sup>2</sup> site in Kajiado County, Kenya. Turbines will be erected on foundations with a diameter of about 16 m and extend to a depth of 2 m. The turbine hub height is 80 m, blade length 51.5m, and rotor diameter 103 m. The 60 turbines represent a decrease of 7 turbines evaluated in the initial Social and Environmental Impact Assessment (SEIA) as the Project has moved to a

larger turbine most suited for the site. The Borrower represents that this model turbine has been selected due to its optimum yield and its ability to meet environmental constraints, such as noise.

The plots where the turbines will be constructed are owned by local Maasai families who primarily use the land for grazing sheep and cattle. The site is disturbed in many areas due to continued farming and grazing over the years and is comprised mostly of grassland, small bush and some trees, primarily in ravine areas, which are sometimes wet. In addition to the grazing animals, the site has occasional herds of zebra and impala. There are also occasional rock outcrops on site.

For the purposes of this Project, the Maasai are considered to meet the criteria for Indigenous Peoples as described in IFC Performance Standard 7 due primarily to their self-identification as a distinct group, the recognition of that identity within Kenyan society, and their customary institutions including a distinct Maasai language. Additionally, the 2012 Kenyan Constitution include the Maasai among a number of vulnerable and marginalized communities within Kenya, and the World Bank cites the Constitutional recognition of Maasai as vulnerable and marginalized as the basis for applying their Indigenous Peoples policy for their Vulnerable and Marginalized Group Framework (VMGF).

The Project will also include the construction of a 17 km 220 kV transmission line to evacuate power from the wind farm into the Kenyan electric grid. The line will run southeast from an 18 hectare substation to be built on the wind farm site to the Isinya switching substation. It will be constructed in a 60m way leave that will be leased from local landowners along the route. The vegetation along the transmission line is similar to the site, with the exception of the southeastern area of the proposed transmission line where the diversity of plant species is relatively high. Here the vegetation is more diverse and contains the best habitat for wildlife in the area. The transmission line will be constructed as part of the Project; however, once completed it will be transferred to Kenya Power and Light Company (KPLC) who will operate and maintain it.

Finally, the project also requires the construction of approximately 30 km of internal roads to provide access to the turbines and to facilitate the movement of equipment during construction. About two-thirds of the road construction will be in the southern area of the site. In total 24 hectares will be cleared for roads. In addition to the onsite access roads, there will be a need to upgrade and widen the road from Kajiado town to the site in order to allow the turbines to access the site.

Iberdrola, a major power and infrastructure development, engineering and construction company based in Spain, will serve as the EPC contractor for the Project. Iberdrola will provide a fixed-price, turnkey engineering, procurement and construction (“EPC”) contract into which the turbine supply agreement (“TSA”) with General Electric (“GE”) and a balance of plant construction contract will be wrapped. GE will subsequently operate the facility via a 10-year Full Service Agreement (“FSA”) with a renewal option.

**SCREENING:** The Project has been reviewed against OPIC’s categorical prohibitions and determined to be categorically eligible. The Project is screened as Category A because the Project represents a large greenfield wind development project with the potential for significant impacts to Indigenous Peoples is located in a migratory flyway, and could have significant adverse environmental and social impacts that are diverse and irreversible. The major environmental and

social concerns related to the Project include its potential impacts on resident and migrating birds and bats, potential for significant habitat alteration, visual and noise impacts, appropriate management of land acquisition and disturbance, and the potential for significant disturbance to the lifestyle and cultural practices of Maasai households.

**SCOPE OF REVIEW:** OPIC's review of this project consisted of reviewing the following documents:

- Request for Clearance;
- OPIC Finance Application;
- Kipeto Wind Farm Information Memorandum. April 30, 2013;
- Environment Impact Assessment (EIA) Study for a Proposed 100 MW Wind Energy Project, Kajiado District, Kenya and appendices. March 2012;
- ESIA Supplementary Report. September 2013;
- Bird Survey 2012, March 2013;
- Bat Survey 2012, March 2013;
- ESIA Supplementary Report, September 2014;
- Environmental Impact Assessment (EIA) Study for the Proposed 220kv Transmission Line Project and associated appendices, August 2013;
- Wind Farm Environment and Social Management Plan;
- Environmental and Social Action Plan posted by the IFC;
- Transmission Line Environmental and Social Management Plan (prepared as part of the SEIA) and;
- Wind Farm Environmental and Social Management Plan (prepared as part of the SEIA);
- Draft Stakeholder Engagement Plan (no date);
- Indigenous Peoples Plan, December 2012;
- Public meeting minutes with affected communities and stakeholders; and
- Leases and household movement agreements.

Additionally, OPIC staff undertook an environmental and social due diligence site visit from April 22 through April 25, 2013. The site visit involved visits to the wind farm site and the transmission line route, meetings with the affected communities, meetings with government officials, National Museum of Kenya staff conducting the bird studies, and Bird Life International. During due diligence, OPIC commissioned support from an Independent Engineer (IE) to assess engineering feasibility of the Project as well as to review environmental, health and safety aspects of the Project. Additionally, OPIC commissioned an Independent Consultant (IC) that specializes in social safeguards to evaluate the consultation and consent process undertaken by the Project in its engagement with the Maasai community members and other affected stakeholders and to provide an assessment of the Project's compliance with IFC Performance Standard 5, 7 and 8. Results of both the IE and IC reports will be referenced in the appropriate sections below.

**APPLICABLE STANDARDS:** OPIC's environmental and social due diligence indicates that the Project will have impacts that must be managed in a manner consistent with the following Performance Standards (PS):

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS 2: Labor and Working Conditions;
- PS 3: Resource Efficiency and Pollution Prevention;
- PS 4: Community Health, Safety and Security;
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- PS 7: Indigenous Peoples
- PS 8: Cultural Heritage.

Performance Standard 5 is not triggered by the Project because the Borrower represents that they do not have the ability to resort to expropriation for Project-related land acquisition. As such, land acquisition, restrictions on future construction within the buffer zone of the turbines, or resettlement taking place as part of the project is voluntary and the product of negotiated settlements. However, due to the sensitivity of the affected population, OPIC is requiring all land acquisition policies and processes be captured in documentation that demonstrates compliance with the requirements of PS 5.

In addition to the Performance Standards listed above, the IFC's April 30, 2007 Environmental, Health, and Safety (EHS) Guidelines for Wind Energy, the 2007 Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution, and the IFC's April 30, 2007 Environmental, Health, and Safety General Guidelines are applicable to this project.

### **National Environmental Legal Framework**

Currently, environmental legislation in Kenya is provided in over 77 statutes. In order to provide a structured approach to environmental management, the Environmental Management and Coordination Act (EMCA) was enacted on January 14, 2000, as a framework law. It contains provisions for the Environmental and Social Management of proposed and ongoing Projects. The EMCA does not supersede environmental provision within sectorial laws. Instead the environmental provisions within those laws were reinforced to better manage Kenya's environment.

In July 2002, the Government established The National Environment Management Authority (NEMA) to administer the EMCA. NEMA is housed within the Ministry of Environment. The EMCA makes the submission of an Environmental Impact Assessment mandatory for the Project and ESIA's for the wind farm and transmission line have been carried out in line with National standards. NEMA granted the Project a license in July of 2012 and renewed it in July 2014 for an additional 24 months. The license includes a number of conditions including the requirement to develop an environmental management system and organizational structure to achieve compliance with the environmental, health and safety conditions in the license.

### **ENVIRONMENTAL AND SOCIAL ISSUES AND MITIGATION**

## **PS 1: Assessment and Management of Environmental and Social Risks and Impacts**

*Environmental and Social Management System (ESMS).* The ESMS for the Project has not yet been fully developed, but is required as part of the Action Plan (attached to this clearance as Appendix A) and must be developed for OPIC's review prior to construction. The ESMS requirements will apply to the EPC contractor and subcontractors and must include the following for both the construction and operational phases of the Project:

- An environmental policy;
- The Project's organizational structure;
- An updated environmental and social management plan;
- An updated Stakeholder Engagement Plan (SEP);
- Enhanced Grievance Mechanism; and
- An Occupational Health and Safety Plan;

While the EPC contractor, Iberdrola, does not have a formally certified environmental management system in place, it has developed a "Global Management System" which the Borrower represents is implemented at all project sites and which is aligned with the ISO 14001:2004 standard. Iberdrola has also developed a number of policies with regard to environmental and social issues, including: General Corporate Social Responsibility Policy; Environmental Policy; Biodiversity Policy; Policy Against Climate Change; Sustainability Policy; Recruitment and Selection Policy; Equal Opportunity; Reconciliation Policy Occupational Risk Prevention Policy; and a Quality Policy. Iberdrola's General Corporate Social Responsibility Policy commits the company to comply with the applicable country laws; advance the sustainable use of resources and the protection of biodiversity; and encourage communication and dialogue.

*Environmental and Social Impact Assessment (ESIA) and Management Plan.* ESIA's were undertaken for both the wind farm and the transmission line. The ESIA for the wind farm included a number of specialist studies: archaeology and cultural heritage; ecology; geology and soils; hydrology; hydrogeology; noise assessment; ornithology; social impact assessment; transport assessment; landscape and visual assessment; and shadow flicker assessment.

OPIC required the Borrower to supplement information related to birds and bats and subsequently, additional bird and bat studies were undertaken by a bat specialist and ornithologist from the National Museums of Kenya using Scottish National Heritage Guidelines. OPIC also required the Borrower to document the community consultation carried out to date with the affected community and other stakeholders and a draft Stakeholder Engagement Plan was submitted.

To address technical and layout change since the original ESIA, two supplemental documents have been produced: one in 2013 and another in 2014. These documents update noise and shadow flicker studies and address other gaps in the original ESIA such as ecology, access roads, hydrology, visual impacts and cumulative impacts.

The transmission line ESIA was completed in August 2013. It also includes a number of specialist studies including; bird and bat impacts, ecological impact, social impact assessment, stakeholder engagement plan, landscape and visual impact assessment and an Indigenous Peoples Plan.

The ESIA's for the wind farm and transmission line each include an Environmental and Social Management Plan (ESMP) with key management and mitigation measures for the identified environmental and social impacts identified in the respective ESIA's. These will be updated to include OPIC and IFC additional requirements and studies. During construction, it will be the responsibility of the EPC contractor to implement the ESMPs with oversight from KEL. The Borrower represents that Iberdrola, will develop a consolidated ESMP prior to construction which will compile all the regulatory, international and project requirements into a consolidated document. This will include all measures from the ESIA ESMPs and any additional management plans and measures as required according to the EPC contract. This will be done in consultation with KEL management so that the local context and requirements are adequately understood. Responsibilities for implementation are allocated in accordance with the ESMP, which is then provided to all subcontractors for implementation.

Additionally, Iberdrola represents that all of its subcontractors have safety, health and environment supervisors on site to oversee the implementation of environmental, health and safety requirements. Iberdrola reviews the CVs of these personnel prior to contracting and undertakes regular internal audits. KEL will approve Iberdrola's selection of contractors and ensure that they have the systems and capacity to meet the relevant E&S requirements for the project. KEL represents that it will also ensure ongoing monitoring of Iberdrola's performance and that of its subcontractors.

*Disclosure and Dissemination of Information.* NEMA approved the terms of reference for the ESIA study, based on scoping activities, in December 2011. Through NEMA, the completed ESIA is shared with 10 government agencies involved in the Project for their review and comment. Additionally the Sponsor is required to place advertisements in the national newspaper and Kenya Gazette for two weeks to notify the public of the ESIA and its location, should they wish to review it.

The English version of the full ESIA (and Appendices) and the Executive Summary is available for review at the Kajiado County offices. The Maa language translation of the Executive Summary was made available at the Esilanke Primary School and the church near the Esilanke market center. The documents were posted on the OPIC website from October 1, 2013 to December 1, 2013 and can still be found at <http://www.opic.gov/doing-business-us/OPIC-policies/environment/documents>. Further, the Borrower has established a local community liaison office adjacent to the Esilanke market which is currently staffed part-time and will be staffed daily during pre-construction and construction phases.

*Community Consultation and Stakeholder Engagement.* According to Project documents, consultation with stakeholders including the Maasai community began in 2009, continued through the ESIA process and is still ongoing today. Throughout 2009 and 2010 Craftsills held several community meetings in the Project area with the local Maasai landowners and leaders, under the stewardship of the provincial administration. The minutes and evidence of these meetings is found throughout the Project documentation, mostly in the ESIA and appendices for the wind farm and the transmission line. The Borrower keeps meeting minutes for all encounters occurring since the ESIA submission, but these are captured on the Project's data site and not within any specific document.

Identifications of needs and interests for the Maasai were done in consultation with the Project Sponsor and the Affected Population. Community leaders identified the following key areas of interest which informed the scope of the specialist studies and the environmental assessment, and will be required to be addressed in ongoing community engagement and support activities:

- Employment and sub-contracting;
- Health care;
- Education facilities and opportunities;
- Vocational, business, and cultural training;
- Community infrastructure: roads, electricity;
- Environmental protections; and
- Promotion of Maasai culture and indigenous interests.

OPIC's visit, and subsequently IFC's visit, confirmed extensive consultation activities among landowners (heads of household) and elder leaders of the Maasai community. However, activities specific to other groups within the community that might be differentially affected, were less well-developed. Based on meeting minutes and OPIC and IFC's consultation activities, the youth specifically have expressed dissatisfaction with their level of involvement for the lease negotiations. However, as a group, they remain supportive of the Project generally and have been subsequently engaged by the Project to a more fulsome degree.

The Draft SEP developed by the Borrower is a high-level framework document with limited information on specific, appropriate consultation strategies for differentiated groups; some baseline information; and a basic grievance mechanism. Information is provided regarding mitigation measures for Project impacts and the Project's Indigenous Peoples Plan, but does not explain how these elements relate to one another. OPIC will require that the SEP be updated to include:

- More detailed stakeholder mapping;
- Detailed plans for appropriate consultation activities for construction and operations, taking into account Maasai culture and institutions, specific activities to engage non-landowners, women, and youth;
- Resources, responsible parties, oversight, and timelines for consultation activities; and
- Updated and improved grievance mechanism.

In order to address the needs of the wider Maasai population in the Project area, the Borrower has committed to establishing a Community Trust, with 5% equity from the wind generation of the Project. The Borrower will be required to develop and implement a Community Development Plan that details the focus and management of the trust. The trust will be discussed in further detail under PS 7, as it in part serves as the benefits-sharing mechanism required of Projects affecting Indigenous Peoples.

*Grievance Mechanism:* The affected community of Indigenous Peoples and the Sponsor have agreed to develop a grievance mechanism collaboratively. As mentioned above the current mechanism is not robust enough to satisfy the condition of PS 1, especially as in this case it must serve as the procedure for feedback during construction activities, land allocation and house movement, and for issues arising out of cultural incompatibility or disturbances of the Maasai

community. OPIC will require the Borrower to update and improve the existing grievance mechanism for the Affected Community, including the internal process, timelines, and responsible parties; communication of the mechanism itself and relevant results; and avenues for appeal.

### **PS 2<sup>1</sup>: Labor and Working Conditions.**

*Occupational Health and Safety (OHS):* No formal Occupational Health and Safety Plan has been provided for either construction or operation of the wind farm or transmission line, although, Iberdrola does represent that it is committed to implementing appropriate Occupational Health and Safety policies and programs. The Action Plan will require an OHS plan for both construction and operation of the wind farm and for construction of the transmission line in accordance with section 2.0 of the 2007 IFC General Guidelines. It will be required to include procedures for working at heights, working in confined spaces, handling of electric and heavy construction equipment, details of employee training, provision of appropriate personal protective equipment (PPE), and reporting procedures for accidents including follow-up corrective actions.

*Worker Accommodations:* The Borrower has represented that it anticipates approximately 100 workers will be housed on site and perhaps an additional 100 on the transmission line site; however, no details of these accommodations have been provided. OPIC will require the Borrower to provide the details prior to construction. All worker accommodations will be required to adhere to the guidelines in the EBRD/IFC guidance note on worker accommodations.

### **PS 3: Resource Efficiency and Pollution Prevention**

**Water Supply:** During construction the wind farm will produce concrete for the turbine foundations (5000m<sup>3</sup>), road construction (21.3m<sup>3</sup>) and road maintenance (60m<sup>3</sup> per day). The Kajiado area, in general, faces acute water shortages due to low and unreliable rainfall. In the Kipeto area rivers/streams tend to be seasonal, however, during the rainy season large volumes of water can be present in streams and galleys. During the dry season, some water can remain standing in the riverbeds, but this is mostly used for livestock. While water requirements for the wind farm are expected to be minimal during construction and even less during operation, given the sensitivity to water and the ongoing needs of the community for drinking and livestock, it is important that the source of water for construction and operations be carefully considered.

In the supplemental SEIA, the Borrower has represented that they are exploring three options for sourcing water for the Project; 1) extracting water from existing boreholes; 2) use of water trucks to bring water onto the site and potentially store it in on-site water in tanks; and 3) digging new boreholes to supply water. The Borrower has not yet determined which option they plan to pursue. Additionally, permitting for water needed during construction will be the responsibility

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<sup>1</sup> While OIP's Worker Rights clearances requires that the Project implement a management system that applies standards in a manner consistent with PS 2, OIP's Environmental and Social Assessment addresses the Occupational Health and Safety provision of PS 2 (Paragraph 16).

of the EPC contractor. To assure proper water management, the Borrower will be required to prepare a water management plan that describes the options available, demonstrates that the option chosen will not impact residents on the wind farm site or in nearby villages, and determine whether or not the water is appropriate for drinking. Water will need to be tested to assure compliance with the WHO drinking water quality standards before being used as potable water. Should the selected option impact on the community or wildlife water supply, mitigation will be required.

**Solid Wastes and Wastewater:** Erosion control and appropriate drainage have been addressed in the Project ESMP. It includes measures such as installation of silt fences and silt traps, proper siting of stockpiles of excavated materials, and mitigation measures such as construction of settlement ponds and covering stockpiles.

Sanitary wastes are also addressed in the SEMP and require the EPC contractor to provide an adequate number of portable toilets, separate for male and female workers. An outside contractor will service the portable toilets. Plans for treating sewage during operations have not yet been determined, but as the number of people on site during operation is small, installation of appropriate sewage is not anticipated to be problematic.

The EPC contractor for both the transmission line and the wind farm site will be responsible for solid waste management during construction and will prepare a site-specific waste collection and disposal management plan. The plan will describe good site practices such as systematic collection of waste, waste separation, waste reduction, recycling, and the requirement to arrange for disposal only through NEMA approved waste handlers. Burning of solid waste is prohibited.

Hazardous materials will be disposed of also in accordance with the SEMP for both the site and transmission line which includes procedures for proper storage, i.e. away from surface water, and with appropriate containment; the requirement to provide appropriate spill kits on site, and the use of specially licensed contractors to remove wastes.

**Air Emissions and avoided emissions:** Air emissions during construction will be restricted to dust and emissions from construction vehicles. Proper management measures to minimize dust and vehicle emissions such as watering and proper maintenance is included in the ESMP for both the transmission line and site. The Project has applied for CDM approval and as part of this documentation has calculated avoided emissions. The project, once operational is expected to achieve annual emission reductions of about 254,125 tons CO<sub>2</sub>/ year.

**Noise.** During construction, noise will be generated from land clearing and installation of the turbines. During operations noise is generated by wind turbines as they rotate to generate power, as the blades pass through the air, and by the mechanical noise generated by the components inside a turbine. Kenya has noise regulations that are stricter than those of the IFC with a nighttime noise requirement of 35 dB(A), however, these limits are currently under review and expected to be amended. The Borrower has represented that they have successfully lobbied NEMA for a variation to Kenyan noise requirements for this Project and are permitted a maximum of 55 dB(A) during the day time and 50 dB(A) at night. As these values are less

stringent than those of the IFC for residential areas, the Project will be required to meet the IFC requirements of 55dB(A) during the day and 45 dB(A) at night.

Noise generated during turbine rotation only occurs above the “cut in” wind speed and below the ‘cut-out” wind speed. Below the cut-in wind speed there is insufficient strength in the wind to generate efficiently and above the cut-out wind speed the turbine automatically shut down to prevent any malfunction from occurring. The cut-in speed at turbine height is normally 3m/sec and the cut out wind speed is normally around 25 m/sec at the 80 m hub height. Aerodynamic noise is caused by blades passing through the air and is generally broadband in nature, which can have a swishing character. This noise is a factor of many things including blade design and rotational speed. Aerodynamic noise has been greatly reduced over time by changes in turbine design. The turbines that are being proposed for this project, the GE 1.7-103, are supposed to be the quietest of the turbines with respect to aerodynamic noise. Mechanical noise is generated by the components inside the turbine nacelle, i.e. the gearbox and generator. Advanced gearbox design has also significantly cut down on mechanical noise.

There are 62 households located within a kilometer of the proposed turbines (10 rotor diameters). Noise emissions were predicted for these residences using WindPRO software. The model results indicate that noise levels never exceed 45 dB(A) at any of the affected residences. The Borrower represents that it has adopted a noise maximum of 43dB LA90 (for non-involved households) and 45 dB LA90 (for involved households) in all cases for proposed house locations.

The project will be required to monitor for noise once operational to assure that noise limits are not exceeded. Should this occur, mitigation will be required.

**Shadow flicker.** The Borrower conducted a shadow flicker analysis to determine potential impacts on nearby homes. The results show that only one household within the 10 rotor diameter of a proposed turbine will exceed the guidance of 30 hours maximum per annum. The assumptions of the model, however, assume a worst case scenario, i.e. that the entire house is made from glass and that the entire house is a receptor. In reality the location of the windows of the house are the receptors and need to be imputed into the model to ascertain the exact level of shadow flicker that will occur. In the unlikely event that shadow flicker should exceed 30 hours per year at a particular receptor, the operation of the turbine will be curtailed to keep flicker below 30 hours per year.

**Visual Impact:** A visual impact assessment was conducted for the Project assuming a worst-case scenario of up to 75 wind turbines at a 100m hub height; 50m blade length; and 150m overall height. Roads were assumed to be 5 m wide and the wind turbines connected via underground cabling. The study concludes that the visual impacts are slight, with a few exceptions. While the turbines are located on ridge tops, most major population centers are far enough away that while visible, the turbines are not dominant in the view shed. For those few small villages that are located closer to the turbines, impacts are not thought to be major since the topography is such that only small parts of the wind farm are visible from the residences.

**PS 4: Community Health and Security.** The primary disruption to the nearby residents and community will be from noise and dust associated with construction, safety as trucks transport

materials during construction, and responses from the Project during unforeseen emergencies. With respect to emergencies, the Borrower has not yet prepared an Emergency Response Plan, but will be required to submit one to OPIC for its review and approval prior to construction. The Borrower has outlined possible areas of inclusion in the Plan including:

- Emergency response organization;
- An emergency notification system;
- Evacuation procedures;
- Emergency response plan activation;
- Contingency plans;
- Emergency management resources and logistics;
- Crisis control center;
- Deactivation and recovery plan; and
- Training

*Transportation and Traffic:* The Project requires the transport to the site of large pieces of equipment, both for the transmission line and wind turbine construction on site. To transport the turbines and cranes to the site, the Borrower has estimated approximately 810 round trips of abnormal loads will be required. This number is a slight overestimate as the number of turbines has decreased from 68 to 60. It is anticipated that the turbines will come into the port in Mombasa and then be transported via the A109 from Mombasa to Nairobi. From Nairobi the turbines will be transported along the A104 before proceeding to the site. While these are well maintained roads, it will most likely be necessary to reinforce and/or widen some bridges. This assessment will be carried out by the Kenyan National Highways Authority when the Borrower applies for its permits. The Borrower intends to hire a transport and logistics operator in the region with the required experience to transport the turbines and cranes.

Once reaching Kajiado town, the trucks will travel along a small rural road (E407) to the site. This section of the road will require significant upgrading. There are three bridges along this segment that will need to be reconstructed or reinforced to allow access for the trucks and the road will likely need to be widened. The upgrade of this road will be done by the Borrower, but will require the approval of the Kenya Rural Roads Administration (KERRA).

Details for transporting components for the transmission line have not been provided.

During the April 2014 site visit, the route from Nairobi to the site was driven. While it was confirmed that the major highways are in fact in good condition, it was also observed that there are numerous towns through which trucks will be going along the transport route. Additionally, the impacts to residents along the stretch of road from Kajiado to the site have not been evaluated in detail.

Finally, safety issues on the site itself must be carefully examined. The access roads on site will be dispersed between and amongst local residents. It will be critical that very strict procedures be put in place for any transport or construction vehicles especially as there may be children traversing near the construction sites to and from school.

OPIC will require the Borrower to prepare a transport and traffic management plan prior to construction. This plan will at a minimum be required to verify the exact route that the turbines will follow from the port of Mombasa, provide details on the type of road upgrades, if any that will be required along the major routes 109 and 104, provide the detailed route for accessing the site along rural road E 407, demonstrate that there is no physical or economic displacement as a result of this route, and provide detailed safety procedures for protecting residents along any of the access routes and details of how they will be implemented.

*Buffer Zone:* Initially, the Borrower proposed a 500m buffer zone be established around the turbines, meaning that no household structure can be built within this zone. This distance of 500 meters is included in all the land lease agreements and as a condition of the NEMA license. There are no households within the 500 meter buffer who are not lease-holding households. However, subsequent to the ESIA, the Borrower has revisited the buffer zone requirements in consultation with IFC and local landowners. The Borrower represents that 500 meters was a conservative estimate, and the zone has been resized to 1.1 times the blade length for health and safety concerns (51.5 blade length), or 56.6 meters. OPIC will require the Borrower demonstrate that location of a turbine less than 500 meters from a residence will meet all noise and shadow flicker requirements and that they demonstrate no additional safety risk is present to residents should there be a turbine malfunction.

*Community health:* Community health should be protected via introduction of strict controls on contractor movements, while also enabling peer-to-peer educational opportunities to guard against sexually transmitted diseases and assist with family planning. OPIC will require these issue be addressed in the Community Development Plan (discussed further under PS 7) to the extent they are not addressed elsewhere in the Project's management system.

## **PS 5: Land Acquisition and Involuntary Resettlement**

Land for both the turbines and the transmission line will be leased from individual Massai landowners through a negotiated process. Some of these land leases include house movement agreements, also voluntary, where the Borrower will compensate landowners for any relocation. While the Borrower does have prospecting rights to the land needed for the Project as granted by the Ministry of Energy (in 2009), they do not have the ability to expropriate the land. Under these circumstances, PS 5 does not apply.

However, due to the sensitivity of the affected population and the importance of appropriately managing relocation and potential economic disturbance for vulnerable populations, OPIC is requiring the Borrower to develop a document aligned with PS 5 to ensure that house movements or any economic disturbance is undertaken in a consistent manner and in line with an agreed process, methodology and outcomes. It will include a description of the Project; the aspects and impacts of the project giving rise to the need for relocation of houses and associated structures; the valuation and compensation process; relocation assistance; an implementation plan; the grievance mechanism for land-specific impacts; a budget estimate for allocation to this task, and ongoing monitoring plans. This plan will also include a framework for any individuals or households temporarily impacted, including access to grazing, during the construction phase of

the Project. OPIC will require that the plan and implementation of these tasks be undertaken by a suitably qualified consultant.

Between being granted the prospecting rights in 2009 and early 2011, the Borrower has carried out substantial negotiations that included a lawyer selected by and representing the landowners. As a result, by October 2014, 55 of the 57 land leases required have been registered for the wind farm. The remaining two are subject to 'family consent' which is an agreement entered into with the family when the head of the household has died and transfer of land into the new owner's name has not yet taken place. As soon as the new owner is registered, he/she then becomes the rightful land owner and the lease is then registered in their name. This process is currently underway for the remaining two leases.

The lease structure is divided into a feasibility stage (including construction) and operation stage. Feasibility payments were calculated based on the amount of land required by the Project, and are paid annually. Operational payments are based on a calculation of 1.4% gross revenue per turbine sited on the land. Feasibility payments began in 2011 are being paid directly into the bank accounts of the land owners.

*Voluntary House Relocations:* In April 2011, Kurrent Technologies (KTL) was commissioned to undertake a full inventory of houses in areas likely to be affected by the turbines in an effort to minimize the number of households impacted by the turbines or buffer zone. Negotiations with these landowners has resulted in 83 households across 16 plots (i.e., within 16 homesteads) voluntarily agreeing to move. The household members have given assurances they are aware that they have the right of refusal to relocate and have elected instead to move in order to benefit from project-related mitigation, such as new housing.

As part of this negotiation, the Borrower has agreed to offer replacement houses designed by professional architects constructed of cement with iron sheeting roofs, much like many of the more modern houses already being built in the area. This has been agreed based on substantial consultation with those affected, particularly women, as the houses are usually constructed by women and considered as the responsibility of the women in the Maasai culture. The relocation process will be the responsibility of the Borrower who represents that the process will likely commence at the start of the construction phase though the final timing is subject to planning with the EPC contractor. OPIC will require that all relocation activities and associated compensation occur prior to the commencement of construction activities.

Some non-lease land owners have land (not houses) that falls within the 500 meter buffer area and will thus be subject to certain building restrictions. The Borrower represents that they are still in the process of determining how agreements with these land owners will be structured. OPIC will require that this process be designed in a manner that accounts for any potential adverse impact on the landowners, according to a consistent and transparent methodology, and in consultation with the affected households as required by PS 5. Though this subset of affected landowners differs from the lease holding land owners, it remains voluntary in nature as the Borrower represents that the Project cannot resort to expropriation.

The land agreements for the transmission line are in the form of wayleaves for a corridor of 60 meters, as per Kenyan procedures. Compensation is calculated as a percentage of the value of the land by square meter, as per the KETRACO guidelines. In this case the Borrower is offering compensation of 70% of the value of the land required (based on land valuations made by the land owners) plus another 15% of the value of the land required as disturbance allowance. The Borrower has proposed that compensation be paid in two tranches: 10% upfront into the landowners' bank accounts when the way leave agreement is signed, and 90% at financial close for the Project. The routing of the transmission lines was designed to ensure that no physical displacement is necessary. The Supplementary ESIA, dated September 2014, cites that 15 of 27 required way leave agreements were fully signed and the remainder are in the process of being agreed. Again, the Borrower represents that these leases are not subject to expropriation and thereby are negotiated settlements; however, this process too will be incorporated into the required documentation described above to document compliance with the principles of PS 5.

As part of ongoing monitoring, land acquisition and household relocation activities will be reviewed for compliance and corrective actions recommended as necessary. Throughout the process, the grievance mechanism specific to land activities (described above) will be used to monitor and evaluate the relocation result. The Borrower will be required to report on the grievances received along with evidence of mutually agreed resolution in the annual reporting to OPIC.

## **PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.**

**Biodiversity impacts:** Vegetation on the wind farm site and along the transmission line corridor will be disturbed as a result of the project, but impacts are not anticipated to be significant. Each of the 60 turbines will require clearing for a foundation which has a diameter of about 16m. The transmission line has a 60 m way leave, however, the Borrower represents that only 8 to 10 m of the full right of way will be fully cleared and that only interfering vegetation will be removed on the remainder of the right of way. Both the transmission line and the wind farm site will have fairly extensive lay down areas, but the total area is not yet known. Also, as discussed previously, access roads will result in the clearing of 24 hectares.

The vegetation for both the site and transmission line corridor is primarily open grassland with scattered acacia trees. Bush and woodlands are also present, but primarily in the valleys where water accumulates. The most sensitive part of the transmission line route is in the southern part of the corridor where vegetation is more diverse and the best habitat for wildlife exists. Wildlife found on site are primarily zebra, gazelle, and dik dik. None of the species, either flora or fauna, is endangered, threatened or vulnerable according to IUCN classification. The *Osyris lanceolata* (or the Sandalwood tree) is identified as locally endangered due to its use in the perfume industry. It was not found to be prevalent on site (only one tree observed) or along the transmission line route, however, the NEMA permit requires that land within 500m of a sandalwood tree not be disturbed. Additionally, the Borrower represents that all turbines are located outside of riverine areas that support sensitive habitats and that no construction will occur within 100m of a water body. Finally, the Borrower represents that construction will occur primarily during the day light hours which should help to mitigate impacts. This will provide

time for foraging nocturnal animals to feed during the night. This group is normally sensitive to the presence of human activities and flood lights at night. These measures are all included in the ESMP.

During the dry season the upland is dry of grasses but the lowland will still have grass, herbs and shrubs. Most of the herbivores migrate to this area thus construction activities during the dry season can affect utilization of this area. If possible and practical, the SEMP suggests that construction be scheduled after the onset of rainfall.

**Birds and Bats.** The Borrower engaged a consultant, KTL, who worked in association with the National Museums of Kenya to undertake on-site bird and bat monitoring for both the wind farm site and along the transmission line right of way. Bird Studies on site were conducted monthly from April to December 2011 and again from February to May, 2012 and from September to December, 2012 during the spring and fall migration season. Observations were recorded from 10 vantage points scattered throughout the site. Birds having a flight height ranging between 50 to 150 m were considered at potential collision height from the turbines.

Transect surveys showed that several bird species are common resident birds within the Project footprint; however, these were all relatively small species (primarily passerines) which are considered at low risk of collision with the turbines. Some common resident birds were recorded breeding and included the Rufus sparrows, weaver birds and Kori Bustard. Other birds that showed breeding signs included plovers which are mainly ground dwellers. No raptors were observed to breed and none showed any signs of breeding.

The bird study also confirmed that the site is an important passage and feeding site for migratory birds, both raptors and passerines. The area is used predominantly for feeding. Numerous raptors were recorded at striking height, although, all are identified as Least Concern on the IUCN red list. The most common raptor spotted was the Augur Buzzard. Lesser Kestrels were also abundant and more than 100 were observed during the March to May survey. Observations also varied from one year to another. For example, comparisons of the May 2011 and 2012 data showed significant variation in terms of species diversity, presence and abundance. It is theorized that this may be due to very different weather conditions from one year to the next.

The fall migration also showed notable changes and more passerine birds were recorded compared to raptors, although the Augur Buzzard, Tawny Eagle, Black-chested Snake Eagle, Verraux's Eagle, Lanner Falcon, Montagu's Harrier and Common Kestrel were all observed. The African White-backed vulture, listed as endangered on the IUCN red list, was also observed in small numbers (6) and was observed flying above collision heights. Overall, densities of raptors, the most vulnerable to collisions, were determined to be low. Additionally, the turbines have been sited to avoid the most sensitive areas on the site. Nonetheless, given the rich species diversity and the presence of a number of birds that could strike the turbines, OPIC will require a rigorous bird monitoring study.

The Bat study was conducted from March to December 2012 and used bat captures and release, walking transects for recordings of bat ultrasound, static automated ultra sound recording and physical search of bat roosts over the proposed wind farm site to determine populations. Further,

standard equipment devices were employed to gather data during the surveys. In particular, mist-nets were used to capture bats while Anabat SD2 ultra sound and Bat box bat detectors were used in the automated static recording and walking transects respectively.

Fifteen species of bats from 8 families were recorded in the general area during the survey. The records include one family of fruit bat, *Epomorphorus wahlbergi*, and seven other families represented by several insect eating bats. The highest densities of bats were recorded near wooded areas and valleys rather than in open grass fields where the turbines are located. In open areas, bats were recorded near man-made water pans while in wooded areas; enhanced bat activity was recorded between trees, bushes, over streams, along dry valleys and over vegetation. Bats were most active early in the night between 1800 and 2100. Seven caves and two tree bat roosts were identified of which one cave situation 500 m NE of turbine location T26 had at least six pregnant Hildebrandt's Horseshoe Bats, *Rhinolophus hildebrandtii*. The rest of the caves appeared to be used by bats only occasionally or at night.

Since all 15 bat species recorded in Kipeto are not listed as of conservation concern in the IUCN Red List, potential risk to the species are considered low. Nonetheless, mitigation measures should be taken and OPIC will require the following as recommended in the bat survey with respect to turbine placement:

- All turbines must be placed at least 50 meters away from bush or tree vegetation that might attract foraging and roosting bats;
- All turbines must be placed away from cliffs and valleys where bats roost and forage;
- Man-made water point near turbines during the dry season (when they dry out) or in the middle of wet season (when water is abundant elsewhere) which could attract bats close to turbine blades, must be concealed;
- Site houses/offices shall be fit with bat barriers to avoid getting house-roosting bats near turbines;
- Woodlots, bushes and water bodies outside the proposed site should be maintained to continue providing rich ground for foraging and roosting resources;

**Transmission line:** Bird and bat studies were also carried out along the transmission line right of way using ten vantage points along the route to determine the likelihood of collision with the transmission line or impacts to species due to electrocution. A total of 63 species were recorded and the results were similar to those observed during the 2011/2012 ESIA study for the wind farm site. Of the species observed, none is classified as endangered in the IUCN Red List of threatened Species. Lesser Kestrel was the key migrating raptor recorded.

An additional bat survey specific to the proposed transmission line was carried out between March and May 2013. As with birds, the major concerns are collision with towers and lines and electrocution. Additionally, there are concerns related to disturbing bat habitat during the construction phase. In each month when the surveys were carried out, two bat specialists were deployed to the field to collect baseline data on bats in the project area. The bat specialists were in the field continuously for five nights each month. Nocturnal bat surveys were conducted up to about 10:00pm at night each night.

Fifteen species of bats from 8 families were recorded in the general area of Kipeto between March and December 2012. This includes bats with low wing load that fly low below transmission cables, medium height fliers and high load, high and fast flying species that are vulnerable to cables. Bats documented are not of critical conservation concern, nationally or regionally.

Nonetheless given the diversity of birds and bats both on site and along the transmission line corridor, OPIC will require detailed post-construction monitoring and should unacceptable impacts be determined, mitigation will be required. Additionally, prior to final placement of towers or turbines, as part of an ecological assessment, the Borrower will be required to survey for nesting or roosting habitat either in the footprint of the structure or nearby. If found, mitigation measures will be required.

Finally, this Project will be subject to the IFC Environmental, Health and Safety guidelines for electric transmission and distribution. Included in these guidelines are recommended prevention and control measures to minimize impacts to birds and bats. The Project will be required to follow these guidelines.

### **PS 7: Indigenous Peoples.**

Maasai belong to the Eastern Nilotic group of languages and migrated from their homeland in what is now the Uganda/Sudan/Kenya border area early in the first millennium AD. They absorbed and displaced Southern Nilotes and Southern Cushites on their way south and at the time of European involvement occupied 155,000 km<sup>2</sup> from Mt. Elgon in the north to Kibaya, in modern Tanzania, to the south. In the 19<sup>th</sup> century this territory was reduced to approximately 40,000km<sup>2</sup> with the signing of the Maasai treaties of 1902 and 1911 that led to their mass movement into the southern reserves to make way for European settlements, now roughly corresponding to Kajiado and Narok Districts According to the Archaeological Impact Assessment (AIA), the Keekonyokie Maasai currently inhabit the Ol Doinyo Narok plateau and according to oral narratives, came from Kinangop. There are five major clans and about 40 sub-clans of Maasai in Kajiado District. The clans are grouped into two moieties, Orok Kiteng and Odomongi, each descended from one of the two first Maasai ancestors.

Maasai are traditionally polygamous but this tradition is shifting as family size is in relation to the amount of cattle or livestock kept. Where it was once reportedly easier to maintain larger herds, and thereby larger families, the shortage of pasture has made keeping traditionally sized herds very difficult. The historical reduction in grazing land due to forced relocations and privatization is not a direct consequence of the Project, but could be exacerbated or mitigated depending on the management of Project activities. In addition to unequal distribution of land, a 2007 UN report from the Special Rapporteur on human rights and indigenous people outlined representations from indigenous communities' leaders on reasons for persistent poverty among indigenous people included: lack of access to productive resources, lack of access to and distribution of social services, ineffective development programs, and the lack of basic infrastructure and market opportunities. In order to guard against negative impacts on the part of the Project and potentially enhance development opportunities, the Borrower has been actively engaging with the leadership, community groups, and individual households since 2009.

*Informed Consultation and Participation (ICP):* Because the Maasai are considered as Indigenous Peoples according to IFC PS 7, the Project is required to establish and maintain an

elevated level of community engagement and disclosure, known as ICP, to ensure the potentially affected Indigenous People have the opportunity to understand the potential impacts of the Project (positive and negative), deliberate amongst themselves according to culturally appropriate means, and dialog with the Project Sponsors to negotiate appropriate safeguards and benefits throughout the life-cycle of the Project. The Borrower represents that the participation of Maasai affected groups was led by representative bodies (the Council of Elders) and affirmed through larger group meetings. By carrying out multiple rounds of consultation and information dissemination from 2009 through today, the Project allowed for sufficient time for internal decision-making processes in addition to providing access to legal support prior to signing leases. Much of this process is documented in the wind farm and transmission ESIA's and appendices.

Indigenous women are often denied access to property rights and decision-making as a result of customary practices. OPIC cannot, and does not wish to assert conditions or requirements onto Indigenous Peoples and their customary systems; however, OPIC did work with the Sponsor to encourage their consultation and dissemination activities to include disaggregated meetings with vulnerable groups, including women and in this case younger generations who are also not landowners or heads of household and therefore are not customarily included in decision-making.

*Free, Prior, and Informed Consent (FPIC):* In particular circumstances, Projects that have the potential to negatively impact Indigenous Peoples must demonstrate that they have obtained FPIC. Although the Maasai are identified as Indigenous Peoples, due to the historical subdivision and privatization of their land, the Project is not impacting lands under customary tenure or management and therefore is not required to demonstrate FPIC, although it may be argued that they have obtained it, and could document it, through the lease negotiations and ongoing consultation with the Affected Community of Indigenous Peoples.

OPIC contracted the services of an Independent Consultant (IC) to evaluate the consultation and consent process and assess the compliance of the Project against the requirements of PS 7. The IC concluded that FPIC did not apply to the Project and that the ICP requirements under PS 7 to be "culturally appropriate" were adequately documented within the Social Impact Study (SIS) of the ESIA, which indicated that consultations followed traditional processes (known as barazas). These meetings were held publically and are partially documented in the SIS of the ESIA. OPIC will require additional documentation of the process to date, and the Project's strategy for culturally appropriate consultation going forward in the updated SEP (detailed in PS 1).

A second requirement under PS 7 is to indicate where preferences of the Affected Community of Indigenous People have been taken into account in Project design. The Project has provided evidence of this in several ways. First, is the ability for landowners to refuse to participate in the Project if they so choose, thereby directly impacting Project design. Second, during the lease negotiations and consultation activities, lease holders and non-lease holders voiced concerns over the 500 meter buffer zone around the turbines limiting where they can erect houses. This concern led the Borrower to lower the required distance for those land owners affected by the buffer but not holding a lease with the Project. Finally, the development of the Community Trust (to be discussed in detail below) will address development needs for the region and the Affected Community of Indigenous People will be included in the design and implementation of these works.

*Indigenous Peoples Plan (IPP)*: In addition to the draft Stakeholder Engagement Plan, in 2013 the Borrower also prepared an IPP based on the Social Impact Assessment in the ESIA and their consultations to date with the various groups of Maasai. The IPP provides brief baseline information on the Maasai; details how the Project avoided or minimized land acquisition impacts and impacts on natural resources or areas of cultural or livelihood importance; and introduces the Community Trust and the proposed areas of focus as identified through consultation with affected Maasai, the wider Maasai community, and also district government stakeholders. The Project will contribute 5% of the proceeds arising from power generation to the local Maasai community through a Trust Fund which will fund the development activities undertaken by the Community Trust for the larger Maasai community in the Project Area of Influence. According to the IPP, the Community Trust will focus on the following key areas of interest:

- Health care;
- Education facilities and opportunities;
- Vocational, business, and cultural training;
- Community infrastructure: roads, electricity;
- Environmental protections;
- Promotion of Maasai culture and indigenous interests;
- Sustainable development; and
- Community management and capacity.

The IPP submitted by the Borrower has limited coverage with regard to cultural, economic, political, or social institutions for decision-making and cultural norms and how these specific practices will influence the way in which the Project engages with regard to the Community Trust or to help avoid cultural disturbance during construction or operation of the Project. OPIC will require that these additional cultural specifics be included in the Community Development Plan (CDP) that will incorporate the IPP into a more comprehensive document to guide culturally appropriate development for the region.

*Community Development Plan (CDP)*: The CDP will build on the initial findings of the Indigenous Peoples Plan for the Project and develop a more comprehensive document that will guide the Community Trust as a benefits-sharing mechanism for the region. Through this document, the Borrower will detail how the Community Trust will function, including how the community will be able to propose projects and request support; and also detail, track and report on the other commitments made on the part of the Project Sponsor to the various segments of the Maasai community, particularly those not directly associated with the Project through lease agreements. The CDP also must include influx management plans to safeguard community health during the construction phase.

To date, the Borrower has made commitments for local employment to the Maasai youths as well as health, education, and electricity commitments to women and non-landowning Maasai. These expectations are high and must be managed carefully and transparently. OPIC will require the Community Development Plan be developed such that processes for participation and benefits-sharing among those Maasai community members indirectly affected by the Project are developed in consultation with the Affected Community of Indigenous Peoples so that the participation is culturally appropriate, and communicated clearly throughout the life-cycle of the

Project and the Community Trust. The CDP will be developed taking into account existing plans for the area, such as the Kipeto Integrated Development Plan. It will be done in consultation with a broader group of stakeholders including County representatives and Maasai representative groups such as the Maasai Association.

### **PS 8 Cultural Heritage.**

The AIA was undertaken over three days in August, September and October 2011 by a team from the National Museums of Kenya. The AIA included desktop analysis as well as field surveys with belt transects, judgment sampling based on analyses of aerial images of the proposed site, and random sampling.

The most famous sites (Acheulian: 1.7 million to 200,000 years ago) of Olorgesailie and Isenya on the floor of the Rift Valley are both located at least 15 kilometers from the site. The Project is located on top of what is known as the Ol Doinyo Narok Plateau. Although no sites had previously been recorded on the Plateau, there is a high likelihood of past human use and habitation. The preliminary survey has identified five Later Stone Age/Neolithic sites and extensive scatters of stone tools, pottery, and prehistoric bone. It is possible that there are more than five sites, but the extensive scatters and thick black cotton soil make it difficult to identify tool concentrations. All sites are open and the tools on the surface are heavily trampled; however, the sites are fairly well preserved due to the absence of extensive erosion and minimal disturbance from Maasai grazing practices. The artifacts from these sites may therefore be a source of valuable data if found in situ. The Borrower represents that final turbine siting shows the closest turbine at 365 meters from these sites identified in the AIA, with the rest of the turbines being at least a 600 meters distance. This siting complies with the AIA recommendation of maintaining a 200 meter buffer for identified sites.

The ethnographic survey conducted as part of the AIA indicates that the Maasai of Kipeto no longer hold communal festivals, ceremonies or rituals; consequently, there are no communal grounds set aside for such festivities. Ceremonies are held within individual manyattas of the respective families. There are no sacred trees or groves, and no special medicinal patches that require conservation. The only communal activity revolves around ritual feasts that occur in opuls, or caves located along the river, that last anywhere from three weeks to three months. Further, Maasai bury their dead outside the manyatta area; however, efforts to map where these graves are were met with skepticism. Affected households should be consulted prior to earth moving activities that may affect gravesites so the appropriate mitigation can be undertaken. The AIA recommends a buffer of 100 meters from any identified graves be maintained.

OPIC will require the project to implement the recommendations of the AIA study through a documented chance-finds procedure detailing the timing and responsible parties in consultation with the National Museums of Kenya and the local affected population prior to the initiation of construction.

### **CONTRACT CONDITIONS:**

Based on representations made by the Borrower, the Project should not result in significant adverse environmental or social impacts. The environmental and social impacts resulting from the Project can be mitigated to acceptable levels through the adoption of recommended standards and guidelines. In addition to these relevant standards and guidelines, the Borrower shall adhere to the following conditions.

1. The Borrower and its subcontractors shall comply with:

- (i) All host country and local regulations on environment, health, and safety.
- (ii) The International Finance Corporation's (IFC) Performance Standards 1, 2, 3, 4, 6, 7 and 8;
- (iii) The IFC Environmental, Health and Safety Guidelines for Wind Energy (April 30, 2007);
- (iv) The IFC Environmental, Health and Safety Guidelines for Electric Transmission and Distribution (April 30, 2007);
- (v) The following sections of the April 30, 2007 IFC's General Environmental, Health and Safety (EHS) Guidelines:

**1.0 Environment**

Section 1.1 Air Emissions and Ambient Air Quality

- Mobile Sources- Land-based

Section 1.3 Wastewater and Ambient Water Quality

- General Liquid Effluent Quality
- Wastewater Management

Section 1.5 Hazardous Materials Management

Section 1.6 Waste Management

- General Waste Management

Section 1.7 Noise

**2.0 Occupational Health and Safety**

Section 2.1 General Facility Design and Operation

Section 2.2 Communication and Training;

Section 2.3 Physical Hazards;

Section 2.7 Personal Protective Equipment;

Section 2.9 Monitoring;

**3.0 Community Health and Safety**

Section 3.2 Structural Safety of Project Infrastructure

Section 3.4 Traffic Safety

Section 3.7 Emergency Preparedness and Response

**4.0 Construction and Decommissioning**

2. The Borrower shall implement the Action Plan, attached as Appendix A.

3. No residences may be located within 500 meters of a wind farm turbine unless the Borrower demonstrates to OPIC that noise and shadow flicker requirements will be met and residences will not be subject to increased safety risk should turbines malfunction.
4. The Borrower shall provide OPIC with an annual report beginning June 30 2015 and for each year thereafter. The report shall include environmental and social performance monitoring data summaries, evaluations, and conclusions to show compliance with the Environmental and Social Requirements and should specifically include, but not be limited to, the following items:
  - a. Land acquisition and land use change activities
  - b. Consultation and disclosure activities with affected communities and interested stakeholders
  - c. Community development project activities
  - d. Grievances received, Project responses and evidence of acceptability or escalation within the Project management
  - e. Results of bird and bat monitoring
  - f. Results of noise monitoring
  - g. Any accidents that occurred during the year
  - h. A summary of employee training that has occurred over the year
  - i. An update on the implementation of the Environmental and Social Action Plan (Appendix A)
  - j. A summary of implementation and results of the Projects' Environmental and Social Management Plan, issues of non-compliance and corrective action
  - k. Description on the development of any project opposition and a proposed action plan, if warranted
  - l. Summary of labor profile and general working conditions including any labor issues or incidents of non-compliance during the previous year and management's response to such events.
  - m. Results of internal labor monitoring and compliance for all contractors and subcontractors, including any corrective actions plans completed or in progress at the time of reporting; and
  - n. Worker grievances received and their resolution, including any resulting changes in the labor management system or ongoing cases.
5. The Borrower shall submit to OPIC certification from a third party independent environmental and social audit that evaluates the project's compliance with all environmental and social conditions (and underlying representations) listed in any of the social and environmental management plans. The audit shall be prepared by an independent professional acceptable to OPIC and conducted within the first three years of the signing of the loan agreement. The Borrower shall provide such certification to OPIC that all of OPIC's contract conditions have been met. The Borrower shall provide a non-business confidential summary of audit findings that can be publicly disclosed. OPIC retains the right to review all compliance audits. The Borrower may be required to conduct further certified independent audits if the Borrower fails to submit contractually required annual environmental and social reports identified in a timely manner or if OPIC's monitoring trips or other information indicates a need for further independent

audits. The Independent Engineer's annual report may satisfy this requirement, as long as this approach is approved by OPIC.

6. The Borrower shall submit all deliverables electronically to [eia@opic.gov](mailto:eia@opic.gov) and in hard copy to the Director, Environmental Affairs, Overseas Private Investment Corporation, 1100 New York Avenue, N.W., Washington, D.C. 20527.
7. The Borrower shall notify OPIC of any material change to the project including the details of any expansion, site or associated infrastructure changes or change in the type of turbine to be installed or major rerouting of the roads and transmission line.
8. The Borrower shall assure that all conditions related to environmental, health and safety performance extend to its Project Contractors and Sub-Contracts working on the Project.
9. The Borrower shall notify OPIC immediately, and in no event later than 24 hours after the Borrower should have become aware through the exercise of reasonable due diligence and care, of any accident that results in the loss of life or that has, or that could reasonably be foreseen to have a material adverse impact on the environment. The Borrower shall submit to OPIC within 30 days after the occurrence of such event a summary report thereof.

## Appendix A. Kipeto Wind Farm Environmental and Social Action Plan- December 19, 2014

Action Item	Action Description	Budget	Deadline
1.0	<p>Develop, implement and continuously improve an environmental and <b>Social Management System (ESMS)</b> for both construction and operation of the wind farm, transmission line and roads. The ESMS must include the following:</p> <ul style="list-style-type: none"> <li>• An Environmental and Social Policy</li> <li>• Organizational structure to carry out the Project’s environmental and social commitments</li> <li>• A revised Environmental and Social Management Plan (see 2.0 below)</li> <li>• Procedures for assuring all requirements are implemented by subcontractors</li> </ul> <p>The ESMS must be implemented by Borrower and incorporate the EPC contractor requirements, and programs for monitoring and review, including that of the EPC contractor and their performance in relation to subcontractors</p>	Management Time + Consultant Costs (Include an estimate)	<p>Construction ESMS: prior to construction with sufficient time for lender review and approval</p> <p>Operations ESMS: at least three months prior to operations with sufficient time for lender review and approval</p>
2.0	<p>Prepare an <b>updated and consolidated ESMP</b> for the transmission line, wind farm site and road construction that includes all relevant mitigation measures as defined in the project Environmental and Social Impact Assessments with clearly defined roles and responsibilities for implementation, and any additional management requirements from the additional individual plans required below.</p>	Borrower to add cost	<p>Construction ESMP must be provided for review 2 months prior to construction and finalized prior to construction</p> <p>Operational ESMP must be provided for review 2 months prior to operation and finalized prior to operation of the Project</p>
	<p><b>Water Management Plan.</b> The plan shall address, but need not be limited to:</p> <ul style="list-style-type: none"> <li>• A description of the available options for water supply;</li> <li>• Justification that the chosen option does not impact residents living on the wind farm site or in nearby villages;</li> <li>• A determine whether or not the water is appropriate for drinking. Water will need to be tested to assure compliance with the WHO drinking water quality standards before being used as potable water; and</li> <li>• Mitigation measures for wildlife or communities if impacts are shown.</li> </ul>	Borrower to add cost	Prior to construction

	<p><b>Occupational Health and Safety Plan.</b>  Prepare and provide to the Lenders for review and approval an Occupational Health and Safety Plan consistent with the requirements of Section 2.0 of the IFC General Environmental Guidelines for the construction and operations of the wind farm and for the construction of the transmission line and roads. The OHSP must include, but need not be limited to:</p> <ul style="list-style-type: none"> <li>• Procedures for working at heights</li> <li>• Procedures for handling electric and heavy construction equipment</li> <li>• Details of employee training</li> <li>• Procedures for identifying and providing appropriate personal protective equipment</li> <li>• Procedures for reporting accidents including follow-up corrective actions</li> </ul>	Borrower to add cost	Prior to construction
	<p><b>Temporary Worker Accommodation Plan.</b></p> <ul style="list-style-type: none"> <li>• Provide the number of people that will be living on the wind farm site or that Will be housed along the transmission line during construction</li> <li>• Demonstrate worker housing is compliant with all standards in the EBRD/IFC guidance note on worker accommodations</li> </ul>	Borrower to add cost	Prior to construction
	<p><b>Emergency Response Plan.</b>  At a minimum, this plan should include:</p> <ul style="list-style-type: none"> <li>• Emergency response organization;</li> <li>• an Emergency notification system;</li> <li>• Evacuation procedures;</li> <li>• Emergency response plan activation;</li> <li>• Contingency plans;</li> <li>• Emergency management resources and logistics; -</li> <li>• Crisis control center;</li> <li>• Deactivation and recovery plan; and</li> <li>• Training</li> </ul>	Borrower to add cost	Prior to construction
	<p><b>Bird and Bat Monitoring Plan.</b>  At a minimum, this plan should include:</p> <ul style="list-style-type: none"> <li>• A revised list of factors taken into account when micrositing turbines to: <ul style="list-style-type: none"> <li>▪ avoid sensitive habitat</li> <li>▪ reduce bird and bat mortality and assuring turbines are not located adjacent to ridges</li> <li>▪ avoid breeding areas for resident birds and bats</li> </ul> </li> </ul>	Borrower to add cost	3 months prior to operation for OPIC review and must be finalized prior to operations

	<ul style="list-style-type: none"> <li>• Mitigation measures as defined in the Environmental and Social Assessment for the project including the transmission line as related to birds and bats into the ESMP's; the latter is to include the installation of bird diverters on the transmission lines.</li> <li>• Specific procedures for monitoring bird and bat mortality at the wind farm site and along the transmission line during the operational phase aligned with best practice. Based on the findings thereof, implement an Adaptive Management Plan if necessary;</li> <li>• Frequency of monitoring that takes into account seasonality;</li> <li>• Procedures that will be followed in the event of the death of any endangered species; and</li> <li>• A reporting schedule to provide OPIC with ongoing information for its review.</li> </ul>		
<b>2.06</b>	<p><b>Transport and Traffic Management Plan.</b> At a minimum, this plan should include:</p> <ul style="list-style-type: none"> <li>• the exact route that the turbines will follow from the port of Mombasa;</li> <li>• provide details on the type of road upgrades, if any, that will be required along the major routes 109 and 104;</li> <li>• provide the detailed route for accessing the site along rural road E 407;</li> <li>• demonstrate that there is no physical or economic displacement as a result of this route;</li> <li>• Provide details on stakeholder engagement activities taking place along the transport routes; and</li> <li>• Provide detailed safety procedures for protecting residents along any of the access routes and details of how they will be implemented.</li> </ul>	Borrower to add cost	<p>Construction ESMP must be provided for review 2 months prior to construction and finalized prior to construction</p> <p>Operational ESMP must be provided for review 2 months prior to operation and finalized prior to operation of the Project</p>
<b>2.07</b>	<p><b>Updated Stakeholder Engagement Plan.</b> At a minimum, this plan should include:</p> <ul style="list-style-type: none"> <li>• detailed stakeholder mapping</li> <li>• detailed plans for ongoing stakeholder consultation</li> <li>• Resources, responsible parties, oversight and timeline for consultation activities</li> <li>• Enhanced grievance mechanism</li> </ul>	Borrower to add cost	Prior to construction
<b>2.08</b>	<p><b>Community Development Plan (CDP).</b> This plan should include, at a minimum, the following:</p> <ul style="list-style-type: none"> <li>• Management program for the community trust, taking into account existing plans for the area, such as the Kipeto Integrated Development</li> </ul>	Borrower to add cost	Prior to disbursement

	<p>Plan</p> <ul style="list-style-type: none"> <li>• initial agreements as described in the Indigenous Peoples Plan,</li> <li>• include programs for different groups affected by the project, including youth, women, and other vulnerable groups.</li> <li>• Address measures for influx management to safeguard community health</li> </ul> <p>It will include (but not be limited to) the following workstreams: Development Benefits; Protection of Maasai Cultural Heritage; Ecosystems Services Management; and Wildlife Habitat Management</p>		
<b>2.09</b>	<p><b>House Relocation Plan.</b></p> <p>This plan will provide the details of guidance and oversight to the house relocation process in compliance with PS 5 and must, at a minimum, include:</p> <ul style="list-style-type: none"> <li>• Project Description;</li> <li>• Aspects and impacts necessitating house relocations;</li> <li>• number of homes to be relocated</li> <li>• valuation and compensation procedures</li> <li>• relocation assistance</li> <li>• implementation procedures</li> <li>• specific grievance mechanism</li> <li>• Budget estimate</li> <li>• Ongoing monitor plans</li> </ul> <p>This plan must also address how the Borrower will negotiate with and compensate non-lease landowners whose property is subject to building restrictions due to turbine buffer zones, also in alignment with the principles of PS 5.</p>	Borrower to add cost	Prior to construction
<b>2.10</b>	<p><b>Cultural Heritage Change Find Plan.</b></p> <p>At a minimum, this plan should be consistent with IFC PS 8 (2012) for preventing damage or impact to cultural artefacts or local symbols, including recommendations from the AIA.</p>	Borrower to add cost	Prior to construction
<b>2.11</b>	<p><b>Noise Monitoring Plan.</b></p> <p>At a minimum, this plan should include:</p> <ul style="list-style-type: none"> <li>• procedure for monitoring noise impacts during construction;</li> <li>• procedures for monitoring noise impacts at closest residences during operation of the wind farm</li> <li>• frequency of monitoring</li> </ul>	Borrower to add cost	Prior to construction

2.12	<p><b>Security Management Plan.</b> Develop and implement a plan for security services that complies with Kenyan law, IFC PS 4, and good international practice in terms of screening, hiring, rules of conduct, training, equipping and monitoring of these workers.</p>	Borrower to add cost	Prior to first disbursement
2.13	<p>The Borrower shall developed, implement, and submit the <b>Human Resources Management System (HRMS)</b> for the Project that aligns with IFC Performance Standard 2 and demonstrates how OPIC’s Worker Rights Requirements are implemented throughout the Project, including, <i>inter alia</i>, the following:</p> <ul style="list-style-type: none"> <li>• Policies and procedures guiding human resource management that apply to all Workers of the Project, including those of contractors and subcontractors. <ul style="list-style-type: none"> <li>○ The HRMS should include topics such as working relationships, child labor, forced labor, trade unions, wages, benefits, and conditions of work.</li> </ul> </li> <li>• Procedures on the communication of the human resources policies, including the Project-level grievance mechanism, to all Workers. These procedures should include an employment initiation letter and an oral presentation that reviews each employee’s contract with him/her that details his/her specific working conditions and terms of employment. <ul style="list-style-type: none"> <li>○ The Borrower must ensure that the names and contact information of female supervisors and managers is communicated orally, included in the initiation letters to female employees, and posted in common areas</li> </ul> </li> <li>• Policies and procedures for screening contractors and subcontractors for their capacity to operate in accordance with the Project’s HRMS.</li> <li>• Description of the internal labor monitoring and compliance system that includes contractors and sub-contractors. The monitoring system should include, at a minimum, the following: <ul style="list-style-type: none"> <li>○ Commitment to engage in internal labor monitoring during construction and operations</li> <li>○ Identification and description of individuals responsible for conducting the monitoring</li> <li>○ Timetable that delineates the frequency with which the monitoring will occur</li> <li>○ Monitoring checklist/questionnaire that incorporates labor laws, regulations and requirements (including OPIC’s Worker Rights Requirements)</li> </ul> </li> </ul>	Borrower to add cost	Prior to first disbursement

	<ul style="list-style-type: none"> <li>○ List of labor policies and procedures that will be reviewed</li> <li>○ Program to interview direct, contracted and sub-contracted employees</li> <li>○ Guidelines for identifying non-compliance indicators “on the ground”</li> <li>○ Template for regular monitoring reports that will be submitted to management</li> <li>○ Template for corrective/ remediation action plan for cases of non-compliance</li> </ul> <ul style="list-style-type: none"> <li>● Develop and implement the <i>Worker Grievance Mechanism</i> to include a formalized system to receive and respond to worker grievances; including an anonymous channel for workers to submit grievances, such as suggestion boxes at the work fronts or in the cafeterias; and states the names and contact information of female supervisors and managers that female employees can approach with grievances. The <i>Worker Grievance Mechanism</i> shall reflect the following principles: <ul style="list-style-type: none"> <li>○ Provision of information: All workers should be informed about the grievance mechanism at the time they are hired, and details about how it operates should be easily available, for example, included in worker documentation or on notice boards.</li> <li>○ Transparency of the process: Workers must know to whom they can turn in the event of a grievance and the support and sources of advice that are available to them. All line and senior managers must be familiar with their organization's grievance procedure.</li> <li>○ Keeping it up to date: The process should be regularly reviewed and kept up to date, for example, by referencing any new statutory guidelines, changes in contracts or representation.</li> <li>○ Confidentiality: The process should ensure that a complaint is dealt with confidentially. While procedures may specify that complaints should first be made to the workers’ line manager, there should also be the option of raising a grievance first with an alternative manager, for example, a human resource (personnel) manager.</li> <li>○ Non-retribution: Procedures should guarantee that any worker raising a complaint will not be subject to any reprisal.</li> <li>○ Reasonable timescales: Procedures should allow for time to investigate grievances fully, but should aim for swift resolutions. The longer a grievance is allowed to continue, the harder it can be for both sides to get back to normal afterwards. Time limits should be set for each stage of the process, for example, a</li> </ul> </li> </ul>		
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	<p>maximum time between a grievance being raised and the setting up of a meeting to investigate it.</p> <ul style="list-style-type: none"> <li>○ Right of appeal: A worker should have the right to appeal to a higher level of management if he or she is not happy with the initial finding.</li> <li>○ Right to be accompanied: In any meetings or hearings, the worker should have the right to be accompanied by a colleague, friend or union representative.</li> <li>○ Keeping records: Written records should be kept at all stages. The initial complaint should be in writing if possible, along with the response, notes of any meetings and the findings and the reasons for the findings.</li> <li>○ Relationship with collective agreements: Grievance procedures may be included in collective agreements. Any additional processes should be consistent with these.</li> <li>○ Relationship with regulation: In some countries, grievance processes are set out in employment codes. Workplace processes should be compliant with these.</li> </ul> <p>Should construction or operation of the wind farm be subcontracted, KEL will ensure that such will comply with this requirement.</p>		
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## Public Project Summary

**Screening:** The Project has been reviewed against OPIC's categorical prohibitions and determined to be categorically eligible. The Project is screened as Category A because the Project represents a large greenfield wind development project with the potential for significant impacts to Indigenous Peoples, is located in a migratory flyway, and could have significant adverse environmental and social impacts that are diverse and irreversible. The major environmental and social concerns related to the Project include its potential impacts on resident and migrating birds and bats, potential for significant habitat alteration, visual and noise impacts, need for appropriate management of land acquisition and disturbance, and the potential for significant disturbance to the lifestyle and cultural practices of local Maasai pastoralists.

**Applicable Standards:** OPIC's environmental and social due diligence indicates that the Project will have impacts that must be managed in a manner consistent with the following Performance Standards:

- P.S. 1: Assessment and Management of Environmental and Social Risks and Impacts;
- P.S. 2: Labor and Working Conditions;
- P.S. 3: Resource Efficiency and Pollution Prevention;
- P.S. 4: Community Health, Safety and Security;
- P.S. 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- P.S. 7: Indigenous Peoples; and
- P.S. 8: Cultural Heritage.

Performance Standard 5 is not triggered by the Project because the Borrower represents that they do not have the ability to resort to expropriation for Project-related land acquisition. As such, land acquisition, restrictions on future construction within the buffer zone of the turbines, or resettlement taking place as part of the project is voluntary and the product of negotiated settlements. However, due to the sensitivity of the affected population, OPIC is requiring all land acquisition policies and processes be captured in documentation that demonstrates compliance with the requirements of PS 5.

In addition to the Performance Standards listed above, the IFC's April 30, 2007 Environmental, Health, and Safety (EHS) Guidelines for Wind Energy and the IFC's April 30, 2007 Environmental, Health, and Safety General Guidelines are applicable to this project.

**Environmental and Social Risks:** The Project involves construction and operation of a 100 MW wind power generation facility in Kenya. The project will consist of 60 General Electric (GE) 1.7-103 model wind turbines which will be located on a 70km<sup>2</sup> site located about 18 kilometers northwest of the town of Kajiado, Kenya and about 70 kilometers southwest of Nairobi. Environmental and Social and Impact Assessments (ESIA) were conducted for the wind farm and transmission line. Supplemental studies were performed to assure the documents conform to the requirements of the IFC Performance Standards.

The wind farm site and transmission line are primarily open grass land, with bush and woodland near to or in the valleys. The diversity of plants is high only in the southeastern portion of the

transmission line. The only species of conservation value is the sandalwood tree, which is locally endangered. Construction will not occur within 500 meters of a sandalwood tree. Solid and liquid wastes will be segregated and stored in accordance with their classification and physical properties. Solid Waste will be removed by a licensed waste carrier and hazardous materials by licensed parties specifically certified to handle hazardous materials.

Water will be supplied either through boreholes or will be delivered to the site. It will be tested prior to being provided as drinking water to assure it is compliant with international drinking water standards. The Project is expected to avoid 254,125 tons of CO<sub>2</sub> annually. The wind farm is not anticipated to have a negative visual impact given its distance from major population centers.

On-site bird surveys were conducted during several years both on site and along the transmission line corridor during spring and fall migrations. While the project area has a very diverse bird population, most species occur in low densities and are mostly classified as Least Concern according to the IUCN Red List. The project area is an important kestrel migration and foraging area, though areas of kestrel concentration have been defined and the turbine layout has been developed so as to avoid locations where these birds are concentrated. A number of bat species and bat roosting areas have also been identified on site and along the transmission line corridor. Again, none of these species are listed as conservation concern on the IUCN Red List. Nonetheless, given the high diversity of bird and bat life, the project will be required to have a rigorous bird and bat monitoring program in place once the facility is operational. The monitoring plan will include required mitigation measures, including reduced operations of turbines during the migratory season, should excessive bird or bat strikes occur.

**Risk Mitigation:** An Environmental and Social Management System has yet to be finalized for the Project, but will be required. Environmental Management Plans have been developed for both the wind farm and transmission line by the Developer, but still contain gaps which will be addressed in an Environmental and Social Action Plan (ESAP). Additional studies will be required as part of the ESAP including an Emergency Response Plan, Occupational Health and Safety Plan, Bird Monitoring Plan, Transportation and Traffic Management Plan, a Worker Accommodation Plan, a Water Management Plan, a Solid Waste Management Plan, an Influx Management Plan, a revised Stakeholder Engagement Plan, and a Community Development Plan that will address the development needs and benefits-sharing opportunities for the local Maasai.

**OPIC Disclosure and Site Visit:** The Project's ESIA was posted on OPIC's web site for a 60 day comment period, from October 1, 2013 to December 1, 2013. OPIC did not receive any comments.

OPIC staff also undertook an environmental and social due diligence site visit from April 22 through April 25, 2013. The due diligence visit involved site visits to the wind farm site and the transmission line route, meetings with the affected communities, meetings with government officials, National Museum of Kenya staff conducting the bird studies and Bird Life International.