**INTER-AMERICAN DEVELOPMENT BANK**

**URUGUAY**

# CAMPO PALOMAS WIND POWER PROJECT (UR-L1104)

**Category B Project**

# Environmental and Social Management Report (ESMR)

**September 2015**

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# I. INTRODUCTION

## A. Summary Table

1.1

| | |
|---|---|
| Country | Regional / Uruguay |
| Sector | Renewable Energy |
| Project Name | Campo Palomas Wind Power Project |
| Borrower | Nicefield S.A., a Uruguayan special purpose company |
| Sponsor | Teyma Sociedad de Inversión S.A. and Instalaciones Inabensa S.A. |
| Transaction Type | Project Finance |
| Total Project Cost (in US Dollars) | Approximately US$175 million |
| IDB A-Loan and Guarantee | Up to US$70.0 million or 40% of Project Cost |
| Co-Lenders | DNB Guarantee (US$70 million) |
| Environmental Category | B |
| Project Team | Ana Maria Vidaurre-Roche, Project Team Leader (SCF/INF); Ivan Nunez (SCF/INF); Juan Paredes (INE/ENE); Jan Weiss (SCF/SYN); Steven Collins (VPS/ESG); Andre Averbug (SCF/PMU); Jean-Marc Aboussouan (Chief, SCF/INF) |

## B. Background

1.2 Nicefield S.A., a Uruguayan special purpose company, the Borrower, is seeking financing from the IDB for the construction, operation and maintenance of a 70 MW wind farm (Parque Eólico Santa Rita) and its associated facilities to be constructed in the colonies of Santa Rita y Campo Palomas, a zone of high wind potential, in the Departamento de Salto, Uruguay. The wind concession area lies approximately 18 km north of Ruta Nacional No. 31 (coordinates -31.170716, -57.567693) and the closest towns are Saucedo and Palomas, respectively located 5.7 km and 7.8 km north of the concession area (see Figure 1).

1.3 The Project has selected Teyma as the EPC contractor who will provide all engineering, procurement and construction services, as well as the O&M contractor services, who will be responsible for the operation, maintenance and asset management services for the Project. Teyma has successfully implemented two other wind farms in Uruguay including Cadonal and Palmatir, which was financed by the IDB.

1.4 The estimated total cost of the Project is approximately US$175 million, which will be funded through a combination of equity and debt. Along with loans from IDB and other co-lenders, the Project is seeking financing of approximately US$140 million including US$70 million from the IDB.

1.5 A due diligence mission was conducted by an ESG representative, Steven Collins, senior environmental specialist, (VPS/ESG), from July 29 - 30, 2015. Findings and observations gained during the mission along with information provided in the project's environmental documentation are detailed within this report.

## II. PROJECT DESCRIPTION

### A. Project Components

2.1 The "Project" consists of the construction, operation and maintenance of a 70 MW wind farm (Campo Palomas) and its associated facilities, to be constructed in a zone of high wind potential located northeast of the City of Salto in the Departament of Salto, Uruguay. The Project site lies approximately 35 km northeast of the City of Salto, the closest large city with an approximate population of 104,000 individuals. Two smaller towns, Palomas and Saucedo, with a combined population of less than 500 people, are located within 8 km to the north of the project area. The information provided below has been obtained from the EIA for the Campo Palomas Project and through investigations with project representatives during the due diligence site visit.

2.2 The Project encompasses the installation or construction of the following components: i) installation of 35 wind turbines (Vestas V-110) with a nominal capacity of 2 MW each; ii) construction of a new substation (Colonia Las Flores); iii) construction of a 6 km-long 150 kV transmission line (see Figure 2) to connect the project to the national grid; iv) several smaller underground medium tension 30 kV or 31.5 kV lines within the wind concession area; v) construction of support buildings; and vi) construction of internal maintenance and service unpaved roads (6 m wide and a total of 15 km in length) within the wind concession.

**Figure 1. General Project Location**

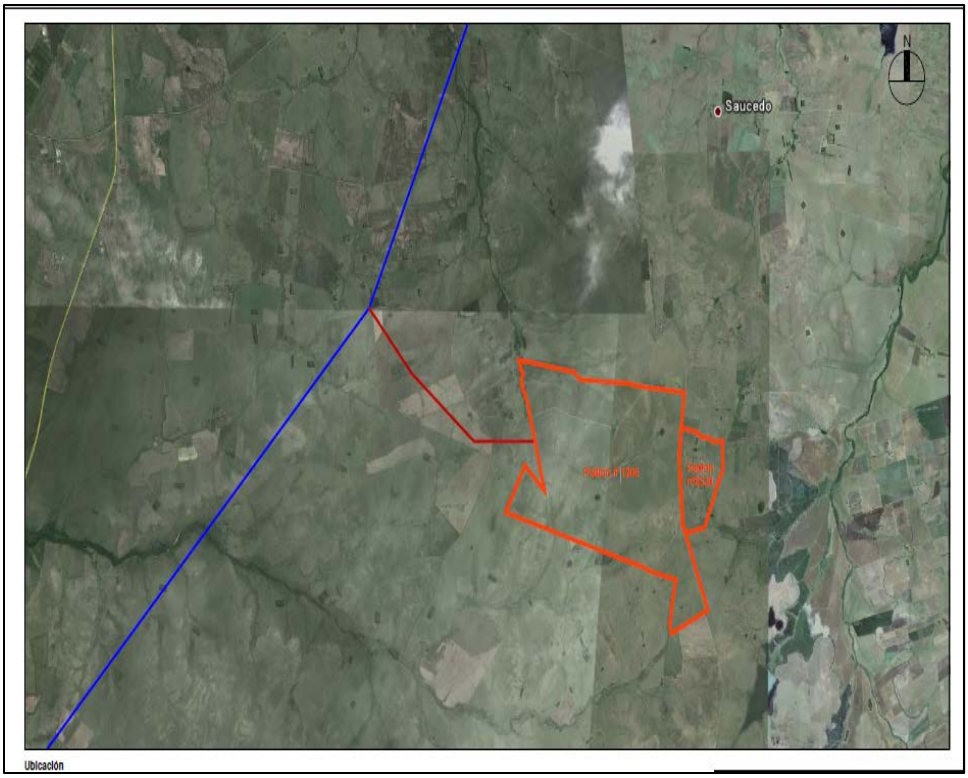



**Figure 2. Transmission Line Alignment**

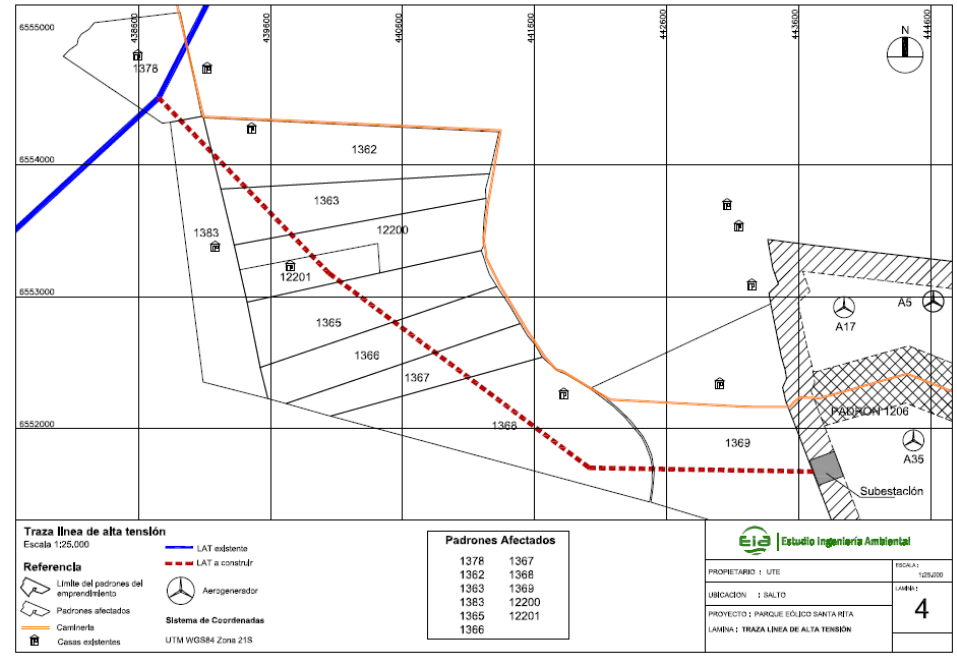
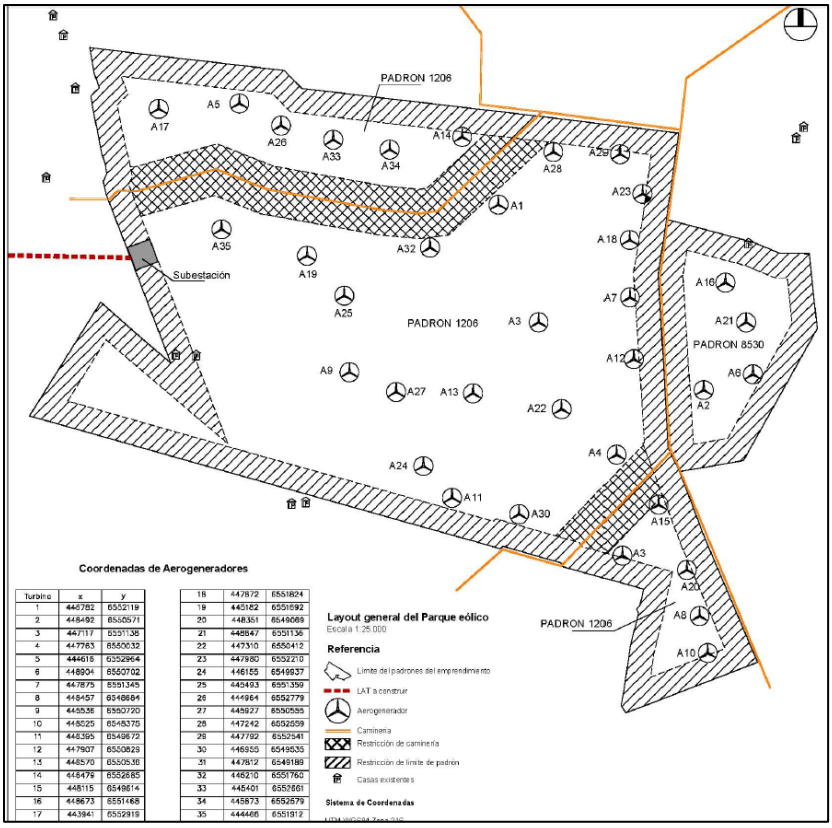



**Figure 3: General Site Layout**




| Turbina | x | y |
|---|---|---|
| 1 | 446782 | 6552219 |
| 2 | 446492 | 6550571 |
| 3 | 447117 | 6551136 |
| 4 | 447763 | 6550032 |
| 5 | 444618 | 6552964 |
| 6 | 446904 | 6550702 |
| 7 | 447875 | 6551345 |
| 8 | 446457 | 6548664 |
| 9 | 445536 | 6550720 |
| 10 | 445025 | 6548376 |
| 11 | 446365 | 6549672 |
| 12 | 447907 | 6550629 |
| 13 | 446570 | 6550536 |
| 14 | 446479 | 6552685 |
| 15 | 448115 | 6549614 |
| 16 | 446673 | 6551468 |
| 17 | 443941 | 6552919 |

| | | |
|---|---|---|
| 18 | 447872 | 6551804 |
| 19 | 445162 | 6551692 |
| 20 | 448351 | 6549066 |
| 21 | 448647 | 6551136 |
| 22 | 447310 | 6550412 |
| 23 | 447980 | 6552210 |
| 24 | 446155 | 6549937 |
| 25 | 445493 | 6551359 |
| 26 | 444964 | 6552779 |
| 27 | 445927 | 6550555 |
| 28 | 447242 | 6552059 |
| 29 | 447782 | 6552541 |
| 30 | 446955 | 6549535 |
| 31 | 447812 | 6549189 |
| 32 | 448210 | 6551760 |
| 33 | 445401 | 6552661 |
| 34 | 445873 | 6552579 |
| 35 | 444466 | 6551912 |

**a) Wind Turbines:** The 35 Vestas V-110 wind turbines to be installed on the site will have a tower (hub) height of 95 m and a rotor diameter of 110 m (see Figure 3, above, for site layout). Each rotor contains three blades, each 54 m long, and has a swept area of approximately 9,503 $m^2$. The V-110 has a cut-in wind speed of 3 m/s and a cut-out wind speed of 20 m/s. The turbines will each occupy an area of 0.12 ha (permanent disturbance area) for the foundation; a total of 0.24 ha of land will be disturbed at each turbine location for the installation. A total of 4.2 ha will be occupied by the 35 turbines and a small area surrounding each turbine will be cleared for service and maintenance. Each generator will require a work platform of approximately 1,200 $m^2$ (30m x 40m) and will include a concrete foundation roughly 15 m in diameter and 2.8 m deep. Concrete for the foundations will be supplied from a temporary batch plant to be constructed on site. Approximately 563 $m^3$ of material will be excavated at each turbine site to prepare the foundation and work platform.

**b) Substation:** The Colonia Las Flores substation will be constructed for the Campo Palomas project. It will be constructed by the Teyma project team but owned and operated by UTE. The wind park substation (31.5 kV/150 kV) will be constructed to support the Project and will serve as the connection to the national grid via a 6 km long 150 kV line connecting to an existing transmission line. The substation will occupy an

area of approximately 200 m x 200 m (4 Ha) within the wind concession area. A security fence will be installed around the substation.

**c) Transmission Line:** An approximately 6 km-long 150 kV above ground transmission line consisting of 20 towers will connect the Project to the Uruguayan national grid (UTE). The transmission line was included in the EIA prepared for the wind farm. Negotiations with the land owners along the transmission line in order to agree land lease terms have commenced but are not yet complete. The consultation process for the transmission line was conducted by the Borrower in conjunction with the consultation for the wind farm; however, the negotiation process for the transmission line will be conducted by UTE. According to the regulation 349 of the Ministerio de Vivienda Ordenamiento Territorial y Medio Ambiente (2005) consultation for transmission lines of 150 kV or less is not required in Uruguay; however, the Bank does require consultation with affected parties. The consultation process conducted by the Borrower for the wind project area did include the transmission line alignment and land lease agreements, when finalized, will be provided to the Bank.

**d) Low Tension Underground Transmission Lines:** Smaller, low-tension underground transmission lines, each 30 kV or 31.5 kV, will be installed to connect the individual generators to the substation and then into the 150 kV transmission line. These smaller transmission lines will have a total length of 32 km and will be buried in trenches 1.2 m deep and between 0.60 m and 1.35 m wide; phone lines and internet cables will be buried in the same trenches. The alignment of the underground lines will follow the access roads and will also contain phone and fiber optic cables as requested by the intendencia (local authority).

**e) Access Roads:** A total of approximately 15 km of access / maintenance roads, some of which currently exist, will be constructed and/or maintained to allow access of heavy construction equipment and supplies as well as long-term service and maintenance of the wind farm. The access roads will be 6 m wide and will remain unpaved. Rock and other material excavated during the preparation of the turbine foundations will be crushed to be used as base material for the new access roads. Magnesium chloride (bischofita), a commonly used dust suppressant, may be applied to the access roads, if needed.

**f) Concrete Plant:** The concrete plant will be situated near the office buildings and will occupy an area of approximately 5,300 $m^2$. The plant will have a production capacity of 50 $m^3$/hour. The plant will produce a total of 12,000 $m^3$ of concrete to supply the material needed to construct the 35 foundations, each requiring approximately 300 $m^3$ of concrete.

**Table 1: Project Component Information**

| Project Aspect | Campo Palomas Wind Power Project |
|---|---|
| **Capacity / Turbines** | 70 MW / 35 Vestas V-110 turbines |
| **Total Wind Project Area (Disturbed Area)** | Over 2,400 Ha. (20 Ha, approximately 0.85% of wind concession) |
| **Substation** | Colonia Las Flores substation (31.5/150kV) occupying approximately 4.0 ha. (200 m x 200m) |
| **150 kV Transmission Line** | Approximately 6 km-long, 150 kV transmission line |
| **Low-Tension Underground Transmission Lines** | 32 km, with phone and internet cables |
| **Access Road (km)** | Total of 15 km of new roads and modification of existing roads |
| **Ha of disturbance at Foundations** | During construction: approximately 8.4 ha (0.24 ha/turbine)<br><br>After construction: approximately 4.2 ha( 0.12 ha/turbine) |
| **Living quarters** | None, workers will be accommodated in local communities |
| **Offices / Storage** | Prefabricated buildings – 130 $m^2$ of office space and 200 $m^2$ canteen and changing rooms |
| **Hazardous waste storage** | 60 $m^2$ (oily rags, lubricants, paint) |
| **Water Consumption (construction)** | 5,000 - 6,000 l/day - 40 l/person/day |
| **Water Consumption (operations)** | 102 l/day - 17 l/person/day |
| **Wastes (non-hazardous)** | Construction – 120 kg |
| **Wastes (non-hazardous)** | Operation -3 kg/day |
| **Wastes (hazardous)** | Construction – 750 kg |
| **Wastes (hazardous)** | Operation – 3,800 kg/yr |
| **Air Emissions ($CO^2$ reduction) – Estimated** | 168,091 ton $CO_2$/year, based on a production of 285 GWh/yr and an emission factor of 0.59 |
| **Number of Workers** | Construction – 120 - 150 workers - peak |
| **Number of Workers** | Operations – 8-10 on-call maintenance personnel |
| | |

## B. Environmental and Social Setting

2.3 The Campo Palomas Project site is located approximately 5.7 km and 7.8 km south of of two small towns, respectively, Saucedo and Palomas, in the Departamento de Salto in northwestern Uruguay. The project site lies approximately 35 km northeast of the City of Salto, the closest large city with an approximate population of 104,000 individuals. Campo Palomas is the first wind power project in northern Uruguay; however, other wind power projects have been developed in southern Uruguay. The Caracoles, Minas I, Palmatir, Carape, Valentines, Colonia Arias and El Libertador projects are just a few examples of other wind projects in southern Uruguay.

2.4 According to the EIA, the wind project consists of two land parcels covering an area of approximately 2,400 ha, of which a total of 20 ha (approximately 0.85%) will be permanently affected by the construction of the wind turbines, maintenance roads, internal transmission lines, and the substation. The overall wind project area has already been largely impacted by human activities, primarily agriculture and cattle grazing. The landscape appears to be mostly composed of pasture lands and a few small soy and sorghum fields. Several eucalyptus and pine wind breaks have been planted over the years apparently to protect agricultural fields from the high winds and provide shade to neighboring home sites.

2.5 A bird and baseline survey has been conducted in accordance with the new Uruguayan standards which includes surveys during the annual migration seasons. Bird and bat surveys were conducted on the project site on 23-25 August, 30 September to 4 October, and 11-15 November 2013, in conjunction with the EIA. A total of 46 bird species and four bat species were identified on the Project site. Three species protected on the UICN Red List, *Gubernatix cristata* (EN), *Anthus nattereri* (VU), and *Sporophila cinamomea* (VU) were identified during literature review as potential inhabitants of the project area, but only the ochre-breasted pipit, *Anthus nattereri*, was observed during field surveys. Several of the bird species identified are protected locally for their economic value; these include various species of ducks, quail, and dove. According to the best information available, no migratory routes cross the wind project area.

2.6 The survey methods presented in the EIA for birds, reptiles, amphibians and mammals seem to comply with the Bank's requirements for surveys, as well as DINAMA's new survey protocols and did occur during one of the two annual migration seasons. No other IUCN Red List species were identified during the surveys.

2.7 Several streams and drainages exist in the southern portion of the project area within the wind concession; however, due to recent drought conditions in Uruguay, these were largely dry at the time of the site visit. Nevertheless, streams, drainages and riparian areas can be considered to be sensitive environments and are important for the survival of wildlife and grazing cattle and will be protected. A buffer zone of 400 meters has been established around these areas and engineering design has placed the turbines and other

project related infrastructure away from these sensitive areas. Additionally, UTE plans to build two small dams in the project area to create a reservoir for irrigation purposes. The project has taken the planned reservoir location into account and turbines will avoid the future lake boundaries.

2.8 The ESIA did not identify the project area as Critical Natural Habitat and the Project does not encroach upon any protected area such as IBAs or areas protected under SNAP. The closest SNAP is Valle de Lunarejo y Laureles located more than 90 km from the Project site. Several IBAs are in the general vicinity including: Arapey (UY002) six km to the north; San Antonio (UY004) 15 kn to the southwest. The Bank's internal Decision Support System (DSS) has identified the area as Critical Natural Habitat based on information provided from NatureServe and the Nature Conservancy declaring the areas to be "Critical Ecosystems". The two sensitive habitat types include Northern Uruguay Well Drained Grasslands and areas of Prime Farmland. The protected status is based on the severity of existing threats to the habitats including loss of prime farmlands, and afforestation with non-native tree species. The Project's minimal footprint does not pose a risk to these habitats.

**Social Setting**

2.9 The closest cities to the Campo Palomas Project area are Saucedo, 5.6 km to the north, and Palomas, approximately 7.8 km to the north; Salto lies approximately 35 km to the southwest. The wind project area includes two land parcels, both owned by the Government of Uruguay, specifically the Instituto Nacional de Colonización (INC) who provides access to the land to poor and disadvantaged families who would not be able to afford their own land. The disadvantaged families are currently using the land for cattle grazing and limited amounts of farming; the land use will not change as a result of the project. INC will sign a land use agreement with UTE, who will in turn sign a land use agreement with the project developer. There are an additional 12 parcels which will be impacted by the 6 km long transmission line alignment; in total, these parcels are owned by 8 entities (INC, MONSTAR S.A., and six individuals). UTE is currently in the process of obtaining the rights to access these properties and is conducting the negotiations for land use payments to these property owners.

2.10 The two smaller towns, Palomas and Saucedo, with a combined population of less than 400 people, are located within 8 km to the north of the project area. Salto, a city of over 104,000 inhabitants is approximately 35 km away. These cities are typical of Uruguay; tranquil cities which boast modern conveniences such as electricity, telephone, radio, television, sewers, and schools. The majority of the labor required for construction is expected to come from these cities. Transportation services to the Project area from the cities will be provided by the Project; thus avoiding the need to construct worker accommodations at the site.

2.11 Salto is a larger city, the second largest in Uruguay, with even more modern conveniences: better schools and healthcare facilities, entertainment, a technical university, public gardens, and a football team. Salto and the surrounding areas are known for their agricultural and in particular, cattle ranching industries, as well as the large hydroelectric power plant, whose power generation is shared with Argentina. Laborers will be sought from all three communities to work on the Project; priority will be given to the smaller communities of Saucedo and Palomas; however, it is anticipated the majority of workers will come from Salto.

2.12 The Project area itself contains two houses and several other houses, approximately ten, exist on parcels surrounding the wind project area. The Borrower has established a minimum 500 meter minimum buffer zone around any house to avoid impacts from noise or the blinking affect associated with wind turbines. The closest turbine to a home site is actually located at a distance of approximately 600 meters, indicating that neither noise nor the blinking effect would be an impact.

2.13 As described above, another 12 parcels with a total of 8 owners will be impacted by the construction and operation of the transmission line. Under Uruguayan law, UTE is owner and operator of all transmission lines within Uruguay. UTE is currently in the process of securing access rights to the properties along the transmission line alignment and conducting the negotiations for the land use agreements for impacted property owners along the transmission line corridor. In Uruguay, the government retains the right to indemnify lands in order to secure rights of way for transmission lines. The Environmental License for the wind park and transmission line was issued by DINAMA in June 2015.

2.14 The local communities depend on agriculture and cattle ranching as the main source of income. Property owners surrounding the wind project area live a very rural lifestyle with fairly large ranch style homes surrounded by vast grazing land. Cattle reared for meat is the primary source of income in the area; however, many land owners in the surrounding areas have pine or eucalyptus plantations and some, maintain other crops including rice, soy, wheat, sorghum, and some citrus trees. All the homes in the immediate vicinity have electricity, telephone and running water. For access to most social services residents must travel to Salto.

2.15 Indigenous Peoples: There are no indigenous people living within the wind project area, nor within the surrounding communities.

## C. Project Schedule and Workforce

2.16 Based on information provided in the project documentation and gathered during the due diligence mission, construction of the project is expected to begin in October 2015 with an estimated 14 month construction period. Operations are expected to commence by the end of 2016. The Project has obtained all necessary permits and licenses and is prepared to begin construction now; however, UTE has not secured the environmental license for the transmission line which has delayed the start of construction.

2.17 A peak workforce of approximately 120-150 people is expected during construction. Most of the workforce, an estimated 70%, will be comprised of local workers from the neighboring communities, particularly Saucedo, Palomas and Salto. As the majority of the workforce will be local, no worker camps will be constructed on the site. Prefabricated units will be used to provide workers with changing rooms and a canteen. Due to remote monitoring capabilities of modern wind farms, it is currently anticipated that only eight to ten technicians and on-call staff will be required during the operations phase of the facility. These individuals will be present primarily to monitor energy production and turbine availability and fulfill any maintenance operations required on equipment.

### D. Alternatives Analysis

2.18 The project EIA only analyzes the preferred alternative, or "the Project"; it does not provide a detailed alternatives analysis. The Project developer did conduct its own internal procedure to identify several alternative site locations and a selection process ensued to identify the preferred alternative. Selection criteria included geographical area which provides optimal wind conditions allowing for the use of 2 MW turbines rather than using larger numbers of smaller capacity turbines as well as other factors including land ownership, proximity to existing infrastructure (substations and transmission lines), accessibility, and distance from major human settlements. The site selected is located in a high wind resource area with excellent accessibility for the transport of materials, is located near an existing substation and existing transmission line and will have minimal impacts to only a few property owners.

## III. COMPLIANCE STATUS AND PROJECT STANDARDS

### A. Appraisal Process and Local Requirements

3.1 Uruguay Law 16.466/94 Law of Environmental Impact Evaluation and Decree 345/2005 classifies projects and defines the degree of environmental impact evaluation required by projects. The Direccion Nacional de Medio Ambiente Division Administracion (DINAMA) in Montevideo, granted the Declaration of Environmental Viability for the Campo Palomas Project on 7 January 2014 following a review of the required environmental documentation (Viabilidad Ambiental de Localización). Under these regulations, the Campo Palomas project and associated transmission line has been

classified as a Category B project, thus requiring the preparation and submittal of an Environmental Impact Assessment (EIA). An EIA was prepared and submitted to DINAMA for approval. The environmental license for both the wind farm and the transmission line was granted by DINAMA on 25 June 2015. The EIA for the project and the environmental license was provided to the Bank for review.

## B. IDB Safeguard Policies

3.2 The Project triggers the following directives of IDB's OP-703 Environmental and Safeguards Policy: B.1, Bank Policies; B.2, Country Laws and Regulations; B.3, Screening and Classification; B.4, Other Risk Factors: B.5, Environmental Assessment Requirements; B.6., Consultations; B.7, Supervision and Compliance; B.9 Natural Habitats and Cultural Sites; B.10 Hazardous Materials; B.11 Pollution Prevention; and B.15 Co-Financing Operations. The triggering of B.4, Other Risk Factors, relates to processes within the project cycle which will be controlled and conducted by UTE rather than the Borrower (see Table 2 below for details). The OP-102, Disclosure of Information Policy also applies for this Project. It does not appear that any physical resettlement will occur in relation to the Project. Based on available information, the Project had been classified by the Bank as a Category B operation.

3.3 Table 2, below, illustrates the Project's capacity to comply with IDB's various policies and directives.

**Table 2: Compliance with IDB Policies and Directives**

| Policy / Directive | Applicable Aspect | Compliance Rationale |
|---|---|---|
| **OP-703 Environmental and Safeguards Compliance** | | |
| B.1 Bank Policies | Compliance with applicable IDB policies | The project is currently fulfilling commitments made to the Bank (see ESAP) in order to be in full compliance with all IDB policies and directives. The implementation of the ESMP (PGAS) will ensure the Project remains in compliance once construction commences and throughout operations. |
| B.2 Country laws | Compliance with country laws and | The project is currently in full compliance with all Uruguayan |

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|---|---|---|
| | regulations | laws and regulations. Land lease agreements are being completed with the property owner (INC) in the wind project area and negotiations are occurring between UTE and land owners along the transmission line alignment. Environmental permits have been obtained for the Campo Palomas Wind Farm and the transmission line. |
| B.3 Screening and Classification | Application of appropriate classification | The Project has been screened for its potential environmental and social impacts and has been classified as a Category B operation. |
| B.4 Other Risk Factors | Third party negotiations | The project will result in economic displacement along the transmission line corridor, which must comply with the Bank's policy on Involuntary Resettlement. The negotiations and compensation to individual land owners will be conducted by UTE, not the Borrower. Land lease / land use contracts with impacted property owners along the transmission line will be provided to the Bank. UTE is currently in the process of negotiating these terms. Agreements will be made between UTE and the land owners. In the case of INC lands, UTE will sign an agreement with INC and a sub agreement will be signed between UTE and the Borrower. |
| B.5 EA Requirements | Application of adequate assessment | In accordance with both Uruguayan regulations and Bank policies for |

| | | |
|---|---|---|
| | process | Category B projects, an Environmental Impact Assessment was prepared for the project. A Viabilidad Ambiental de Localización (VAL) was also submitted to the government of Uruguay. DINAMA has issued the environmental license for Campo Palomas; and the associated transmission line in June 2015. |
| B.6 Consultations | Project has undergone appropriate public consultation | The project has conducted public consultation meetings with the local communities. To date, the community supports the operation. Comments from the public have revolved around employment opportunities with the project. The Project plans to continue engaging the local communities to identify social programs in need of assistance |
| B.7 Supervision and Compliance | Internal supervision and reporting | The Project's PGAS contains provisions for self-monitoring and supervision on a quarterly basis, as well as supervision of contractors, in order to maintain a high level of compliance. Additionally, the IDB Environmental Safeguards Unit will conduct site supervision missions. The Project will submit quarterly compliance reports during construction and annual compliance reports during operations. |
| B.9 Natural Habitats and Cultural Sites | Conversion of natural habitat | The project does not lie within or adjacent to any protected area; however, is situated within regional grasslands that have been identified by NatureServe and The Nature |

| | | |
|---|---|---|
| | | Conservancy as critical ecosystems that are important for biodiversity conservation. Consequently, the Bank considers these habitats to be critical natural habitat. This habitat type is abundant throughout Uruguay. Since approximately 126,663 Ha of the defined critical natural habitat exists and the Project itself will occupy previously disturbed lands, the project will not present a significant conversion or degradation of this critical natural habitat. The Project area's current land use is agricultural land and pastureland. |
| B.10 Hazardous Materials | Waste management | The project's PGA provides a waste management program. Due to the nature of the operation, few hazardous materials are stored on-site during construction (minimal amounts of fuel and paint) and it is envisioned that no hazardous materials will be stored at the facility during operations. A licensed contractor will be contracted to handle the waste management. The project's Contingency Plan also describes mechanisms to control spills or other incidents. |
| B.11 Pollution Prevention | Pollution control and $CO_2$ emissions | The project's PGA provides measures to control pollution such as project waste material, cement, and sediment run-off. The project will reduce the country's $CO_2$ emissions by over 168,000 ton $CO_2$/year by providing a source of green energy. The project's |

| | | |
|---|---|---|
| | | Contingency Plan also describes mechanisms to control spills or other incidents. |
| B.15 Co-Financing Operations | Potential presence of other lenders | Other potential lenders, including DNB, are also conducting their own due diligence exercises, in conjunction with the IDB. The Project's PGA complies with other lender's policies and will assist the Project to maintain a high level of compliance. |
| **OP-710 Involuntary Resettlement** | N/A | No involuntary resettlement in the form of physical displacement will occur as a result of the project; however, there will be approximately 8 property owners who will experience economic displacement due to the placement of the wind turbines and transmission line. The negotiations for land use agreements are currently being conducted by UTE. The Bank will monitor the negotiation process and review land lease / land use agreements. |
| **OP-765 Indigenous Peoples** | N/A | No indigenous communities or peoples will be negatively affected by the Project; and no indigenous groups have been identified in surrounding areas. |
| **OP-704 Disaster Risk Management Policy** | N/A | The area is not known to be a disaster risk area and; therefore, the risk level is low. |
| **OP-270 Gender Equality** | Avoiding gender discrimination within the Project or as a result of the Project. | Women will be incorporated into the labor force where feasible; no gender discrimination will occur due the project. The Project is |

| | | |
|---|---|---|
| | Providing opportunities for women. | currently attempting to identify social programs to benefit women and children in the local communities. |
| **OP-102 Access to Information Policy** | Project information disclosure | The Project has adequately disseminated information in the local community. A public consultation meeting has occurred. IDB will also make relevant Project information available on its website. |

## C. Project Requirements and Standards

3.4 Nicefield S.A., the Borrower, is a special purpose company indirectly owned by Teyma and Instalaciones Inabensa S.A., which together are the project Sponsors. Teyma and Instalaciones Inabensa S.A are subsidiaries of Abengoa S.A (Parent). The Borrower will operate under its parent company's Environmental Management System. Abengoa has significant experience in the construction and operation of wind facilities and has multiple operations in Uruguay. The Teyma team has been instrumental in the successful implementation of Abengoa's other wind farms in Uruguay.

3.5 The Project has prepared a project-specific Environmental and Social Management Plan (ESMP) or Plan de Gestión Ambiental (PGA). The PGA outlines the Borrower's environmental and social responsibilities including waste management, health, safety and labor, monitoring and auditing. The PGA also addresses specific project location related issues such as erosion control, spoils management, and road safety. The Project has also prepared a Plan de Contingencias within the PGA to outline the actions to be taken in the event of a spill, accident, emergency, or other incident.

3.6 The Borrower is developing a project-specific Social Support Program and a Community Relations Plan. The company is currently envisioning working with local schools to provide local school children with an opportunity to visit the wind farm, during operation of the wind farm, in order to learn about wind energy. The Project is also encouraged to identify and promote projects and programs directed at supporting and improving the lives of women and children in the area.

# IV. KEY ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

## A. Summary of Key Impacts and Risks

4.1 The primary potentially negative environmental impacts and risks during construction phase will be mainly associated with the erection of the wind turbines, the installation of the transmission line, the substation and the access roads. Main construction impacts are: (i) habitat disturbance; (ii) soil erosion; (iii) dust generation; (iv) increase in heavy traffic; (v) noise; (vi) loss of vegetation; and (vii) occupational health and safety hazards for the workforce. These construction impacts and risk can be adequately mitigated through the implementation of appropriate management plans.

4.2 **Transmission Line:** UTE owns and operates all transmission lines within Uruguay and therefore, the routing, permitting, and consultation is controlled by UTE, with some cooperation with the Borrower, and generally follows a different regulatory process than the wind farm; however, the ESIA for this project includes both the wind farm and the transmission line. The potential environmental impacts and risks associated with the construction of a transmission line include: disturbance to habitat (flora and fauna) from clearing of the right-of-way, increased soil erosion, increased use of previously inaccessible areas, increase in heavy traffic from construction equipment, increase in dust, increase in noise, risk of collision for birds, conversion of land use with visual impacts, and economic displacement.

4.3 Once in operation, the potential main impacts and risks are: (i) bird and bat collision; (ii) barrier effects to movements of birds, both resident and migratory species; (iii) loss of vegetation; (iv) accidental discharges of hazardous materials; (v) community health and safety hazards; (vi) noise impacts caused by the wind turbines; and (vii) blinking effect caused by the turbine blades during dawn and dusk hours.

## B. Environmental Impacts and Risks

4.4 Potential negative environmental impacts and risks during construction phase will be mainly associated with the erection of the wind turbines, the installation of the transmission line, the substation and the access roads. Main construction impacts are: (i) habitat disturbance; (ii) soil erosion; (iii) dust generation; (iv) increase in heavy traffic; (v) noise; (vi) loss of vegetation; (vii) occupational health and safety hazards for the workforce; and (viii) visual impacts to surrounding residents. These impacts and risks can be adequately mitigated through the implementation of appropriate management plans.

4.5 **Transmission Line:** The potential environmental impacts and risks typically associated with the construction of a transmission line include: disturbance to habitat (flora and fauna) from clearing of the right-of-way, increased soil erosion, increased use of previously inaccessible areas, increase in heavy traffic from construction equipment, increase in dust, risk of collision for birds, and conversion of land use with visual

impacts. The acquisition of land use agreements between UTE and the land owners are the primary concern along the transmission line.

4.6 Once in operation, main impacts and risks are: (i) bird and bat collision; (ii) barrier effects to movement of birds; (iii) loss of vegetation; (iv) accidental discharges of hazardous materials; (v) community health and safety hazards; (vi) noise impacts caused by the wind turbines; and (vii) shadow flicker caused by sunlight passing through the moving blades.

4.7 One of the potential risks associated with wind power facilities is bird collision. Two bird field surveys conducted in support of the EIA occurred between September 30 and October 4, 2013 and November 11-15, 2013 which should coincide with the spring migratory season and registered only 46 species of birds within the wind project area (approximately 10% of the 446 bird species registered in Uruguay). Desktop studies from other nearby areas, however, indicated the potential presence of a significantly higher number of bird species in the project area, approximately 240. One species registered during the field investigations is listed on the IUCN Red List of Species. The ochre-breasted pipit, *Anthus nattereri*, (IUCN VU) was observed at the project site; several other IUCN Red List species, listed as Endangered or Vulnerable are likely to occur in nearby IBAs. Some migratory species were observed during the surveys; however, since the wind project area does not lie within any migratory routes or important fly-ways, the risk of collision to migratory birds is expected to be low as the numbers of individuals traversing the area will be low. The post-construction monitoring will help in determining the risk of collision during actual operations. Should collision rates be high during operations, mitigation measures such as changes in cut-in speed or mandatory temporary shutdowns during peak migrations should be implemented.

4.8 Bats also face collision risk, and other risks, associated with wind farms; in fact, the incidence of bat mortality is generally higher for bats than birds, presumably because bats seem to be attracted to wind generators. Several theories exist for this phenomenon including: the bats view the tower as a potential roost site, dead insects on and near the generator are seen as an easy food source, the bats are attracted to the heat produced by the generator, and the sound and electromagnetism produced by the generator disrupts their echolocation. Additionally, bats face barotrauma, a condition resulting from a sudden change in atmospheric pressure (such as encountered near the rotor of an operational turbine), which causes their fragile lungs to expand beyond capacity leading to death. Bat field surveys were conducted in conjunction with the EIA and no caves were observed during field visits; however, groups of bats representing four different species were captured during the surveys. None of these species, or any of the 23 species known to exist in Uruguay, appears as threatened or vulnerable on the IUCN List of Red Book Species. As with birds, the mortality to bats due to collisions with generators should be closely monitored and reported during operations. Mitigation measures, such

as increasing the cut-in speed of the generators, should be implemented if monitoring results indicate high bat mortality.

4.9 The EIA did not identify any sensitive or protected species of amphibians or reptiles occurring within the wind project area which is feasible considering the project area consists of previously disturbed agricultural lands; however, streams do exist within the property. Buffer zones have been established around these sensitive areas. Care should be taken during construction activities to ensure species from the wetland area do not encroach upon the construction zone. Routine environmental inspections described in the PGA will serve as safeguards against any potential impact to these species.

4.10 The barrier effects are related to potential displacement of bird or bat species. Displacement occurs when a species decreases or discontinues use of an area due to a human activity. The level of barrier effect depends on species, turbine layout, the species ability to compensate for losses in energy due to avoidance, and most importantly, the size of the wind facility and the presence of other wind farms in the region. The proposed project will have 35 turbines and is not located near other known planned wind farms. In addition, it does not appear that the wind project area is crossed by any avian migratory routes. As such, the barrier effect should not be significant.

4.11 Another impact will be the loss of vegetation within the project area and along the new access roads and the 6 km transmission line. As mentioned previously, much of the habitat has been previously significantly impacted by human activities. While the majority of wind project area has been converted to pasture lands or agricultural lands, there are some stands of native vegetation surrounding streams and patches of exotic tree species which may provide nesting habitat to various species of birds. These stands of trees and all riparian areas surrounding streams will be avoided during construction. The entire transmission line alignment also lies within modified pasturelands and farmlands.

4.12 Maintenance activities during operation may cause accidental discharge of hazardous materials (e.g. from changing the oil in the generator, fuel leaks from maintenance vehicles or paint spills) or trigger occupational health and safety concerns (working at heights). These potential impacts and risks are easily managed and have been addressed in the Environmental Management Plan.

4.13 Community health and safety hazards specific to wind energy facilities primarily include: aircraft navigation safety; electromagnetic interference; and radiation. The potential of such hazards is not considered significant in the context of the Project since there are no home sites located near turbines and affected communities will continue their economic activities (grazing and agriculture) on the land where the Project is located. Increased community health and safety hazards related to public access may not be insignificant, due to the amount of heavy equipment and large vehicles required to transport the

turbines and other materials to the site and have been adequately addressed in the Project's Environmental Management Plan, including adopting appropriate risk prevention procedures and emergency planning during construction and maintenance activities. Traffic management will need to be monitored throughout the construction process.

4.14 Potential noise impacts caused by the wind turbines during operation on adjacent properties or communities are not expected to be significant; however, there are some existing home sites within the Project area and near planned turbine locations (the closest home is approximately 600 m) which should be adequate distance and will likely not require mitigation. Based on the noise study, which represents a worst-case scenario, it does not appear that any homes or other infrastructure will experience noise levels higher than the acceptable standard for night time of 3 dBA higher than baseline levels. Noise levels for all homes are also within an acceptable range of day time hours. Noise levels will be further verified through the periodic monitoring of noise level to be carried out during the Project's operation, including at the site's boundaries. Appropriate mitigation measures will be applied should noise levels exceed accepted standards.

4.15 The project is situated near a protected IBA (Arapey UY002), located six km to the north and within regional grasslands that have been identified by NatureServe and The Nature Conservancy as critical ecosystems that are important for biodiversity conservation. These habitats are important remnants of once expansive grasslands that are home to several globally threatened bird species. Throughout their range, these grasslands are under substantial threat from conversion to agricultural croplands, afforestation with non-native tree species, and historically from the invasion of non-native pasture species. Consequently, the Bank considers these habitats to be critical natural habitat. This habitat type is abundant throughout Uruguay. Since approximately 126,663 Ha of the defined critical natural habitat exists and the Project itself is located on previously impacted lands, the project does not appear to present a significant conversion or degradation of critical natural habitat. The Project area's current land use is agricultural lands and pastureland, therefore, eliminating the threat of conversion of critical natural habitat. In order to preserve the wind resources within the Project area, no new eucalyptus groves will be planted.

## C. Social Impacts and Risks

4.16 **Land Acquisition and Physical Displacement:** The Project has already identified the lands required to install the turbines, substation, underground transmission lines, above ground transmission line and access roads. These portions of the Project do not lead to any physical displacement or resettlement. Land contract lease agreements are being negotiated with the individual land owners (eight property owners in total, all cattle ranchers and farmers). The compensation packages typically offered in Uruguay are

consistent with IDB policies and generally offer a fair payment per MW installed, as well as payments for lost production or plants removed from the property. No physical resettlement will occur along the transmission line; however, several of these owners may experience economic displacement as they lose the ability to farm portions of their land. Land lease agreements will have to be completed with the property owners before construction begins. The Bank has requested to be updated on the negotiation process, being conducted by UTE, as it progresses.

## D. Cumulative Impacts

4.17 Cumulative impacts may exist in areas where multiple wind projects have been, or will be, constructed in close proximity to each other and within established migratory routes and corridors, or within sensitive areas. Although there are currently no other wind farms in the immediate vicinity, existing or planned, with the growing number of turbines planned to be erected in Uruguay in the near future, the risk and concern of cumulative impacts also grows. It is possible that other wind farms will be planned, designed and constructed in the area. Currently, any cumulative impact study relating to bird collisions with wind turbines, anywhere in the world, has been inconclusive due to the lack of data shared or otherwise obtained from the various wind farms in operation. Data for the monitoring efforts of this Project, as well as other projects will be helpful in determining the extent of cumulative impacts and developing and implementing corrective measures in case the impact is found to be significant.

## E. Positive Impacts

4.18 The Projects will likely result in net positive benefits for the nearby communities as well as the country, in general. The Project, during construction phase, will provide direct employment to approximately 120 – 150 workers. A preference for workers from local communities will be provided; an estimated 70% of the total workforce is expected to be local laborers.

4.19 The Project will be tied into the Uruguayan national grid, thus providing cleaner energy to the nation and reducing the carbon footprint of energy generation in Uruguay. The 70 MW Campo Palomas project is expected to generate 285 GWh of energy each year, resulting in an estimated savings of over 168,000 $tCO_2$/year, through the displacement of thermal power generation.

4.20 The Project is currently working with the community and local officials to identify potential social programs which the Project can support. Preference will be given to social programs which benefit women and children. School field trips, as well as site

visitations for other visitors, are envisioned for the future when the wind farm is in full operation to teach school children and the community about wind energy.

## V. MANAGEMENT AND MONITORING OF ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY AND LABOR IMPACTS AND RISKS

### A. Description of Management Systems and Plans

5.1 The wind power plant will operate under a PGA, which has been developed within the EIA and according to the requirements established by the Uruguayan legislation and in line with the Bank's policies regarding Environmental Management Systems. The PGA will include regular monitoring of the facilities and quarterly reports will be prepared during construction concerning noise, air emissions, traffic issues, waste management, health, safety and labor performance, trainings, as well as other issues. Detailed logs will be maintained to document worker trainings, worker health certificates, work site incidents and accidents, waste registers, and vehicle maintenance. A quarterly report will be provided to the Bank during construction and annual reports will be provided during operations.

5.2 The most relevant social activities implemented by the Borrower to develop a good relationship with the local communities include:

i. Public Consultations. The Project has already conducted public consultation meetings with community members and local authorities. The consultation sessions provided an opportunity for interested people to learn about the project and have their doubts and concerns addressed by company representatives. Details of the transmission line alignment were included during the consultations. Community engagement will continue through the construction phase.

ii. Grievance Mechanism. The Project has implemented a Grievance Mechanism to allow stakeholders an opportunity to voice their opinions, concerns, complaints, or comments outside of the public consultation meetings and throughout the construction phase of the project. These comments will be recorded, as well as the Project's responses to these comments. Issues will be tracked to determine how the Project responds to complaints and interacts with the complainant to resolve outstanding issues. The Grievance Mechanism will be accessible to individuals impacted by the wind farm and the transmission line.

iii. Community Relations Plan. The coverage of this plan includes both the wind farm and the transmission line. Its goal is to establish community participation mechanisms and build positive relationships with interested groups to avoid or minimize potential social conflict situations during project execution. This plan provides both a general framework and specific procedural guidance for a continuous dialogue between the local population and representatives of the company.

iv. Potential Social Programs. The Borrower is in the process of identifying potential social programs to support in the area. The Project will give precedence to social programs or projects which benefit women and children in the local communities. So far, only programs with local schools have been identified.

## B. Monitoring and Supervision

5.3 This project includes different levels of supervision. The most relevant ones include (i) Internal project supervision, conducted by the Borrower's environment team and defined within the PGA; (ii) Bank supervision, carried out regularly by the project team potentially with the support of specialized consultants; and (iii) inspections from DINAMA, an entity of the Uruguayan Government responsible for enforcement of compliance with environmental laws and regulations.

5.4 The Borrower will conduct quarterly internal audits and send quarterly reports to the IDB. The Bank will conduct semi-annual supervision missions during the construction phase and annual supervision missions during operations to assess compliance with Bank policies. DINAMA has the right to conduct unannounced site audits of all projects to ensure all environmental conditions are met.

5.5 The project has prepared a detailed monitoring regime for the operations phase which will include surveys for birds and bats to assess the impacts of collisions to these species. The Borrower will work with the Lenders and DINAMA to ensure monitoring protocols are compatible with Bank policies and DINAMA requirements for wind farms in operation.

## C. Indicators

5.6 In the case of environmental indicators, the projects will be assessed in terms of compliance with the IDB Safeguard Policies and compliance with local regulations. The annual report provided by the Borrower will detail vital information including calculated reduction of $CO_2$ emissions. Based on current energy production in Uruguay, the Campo Palomas Project, is expected to create a reduction of approximately 168,091 ton $CO_2$/year; the development goal is a reduction of 168,000 tons $CO_2$/year. Carbon reductions will be directly related to the amount of energy generated, of which, an estimated 285 GWh/yr is anticipated.

5.7 In the case of the social support programs, potential projects or programs must be identified through consultation with local authorities and community groups. Following project identification, a chronogram of activities will be developed which will include a list of components, specific activities for each component, and expected results. Results of the social programs will be reported in the annual environmental and social monitoring reports.

## VI. REQUIREMENTS TO BE INCLUDED IN THE LEGAL AGREEMENTS

6.1 Based on the ESDD conclusions, the conditions described below are required to be fulfilled for the Project prior to loan approval/financial close and throughout the life of the loan, in form and substance satisfactory to IDB:

*Throughout the Life of the Loan*

6.2 The IDB will require within its Loan Agreement that the Project and each Project party (Sponsor/Borrower/Company) and other Project/Environmental parties, including construction companies and operators, and any contractors and sub-contractors will, at all times during the life of the Loan Agreement, comply with the following requirements:

1. All applicable environmental, social, health and safety, and labor regulatory requirements of Uruguay.

2. All requirements associated with any environmental, social, health and safety, and labor related permits, authorizations, or licenses that apply to the Project, the Borrower or any party responsible for executing the Project or its mitigation measures.

3. All environmental, social, health and safety, and labor requirements of the Project contracts and any subsequent modifications.

4. All aspects and components of all of the Project's environmental, health and safety, social and labor documents.

5. All relevant IDB policies such as the Environment and Safeguards Compliance Policy (OP-703), the Disaster Risk Management Policy (OP-704) and the Disclosure of Information Policy (OP-102), the Involuntary Resettlement policy (OP-710), and the Gender and Equity in Development Policy (OP-270) and their respective guidelines.

6. Comply with all the requirements indicated in the Environmental, Health and Safety Action Plan.

*Prior to First Disbursement*

6.3 The Project will conduct community engagement activities with local authorities and community groups to identify and implement potential social programs. The Project will look specifically to support social programs directed at benefitting local women and children.

6.4 The Project shall demonstrate to the Bank that all pending land use permits have been obtained. Copies of relevant permits, contracts, and agreements shall be submitted to the Bank.

*Prior to Each Disbursement*

6.5 The Sponsor/Borrower/Company shall certify compliance with all environmental social, health and safety and labor requirements in the loan agreement, including any Corrective Action Plans if applicable.

*Prior to Construction*

6.6 The Borrower shall incorporate into all contractors' contracts clear regulations and penalties for non- compliance with policies, plans and programs (including mitigation measures) adopted by the company. This will include clear procedures and timing for reporting environmental, health and safety related incidents/accidents and a specific monitoring program to assess causes of incidents/accidents and track performance of the corrective measures. The Company shall provide evidence of supervision and oversight of the contractors.

*Prior to Operations*

6.7 The Project will develop and implement a project specific PGA for Operations to assess and mitigate the negative impacts associated with the Project during the operations phase. The ESMP will include a defined monitoring and supervision regime. All project contractors will also be required to comply with the actions described in the ESMP.

6.8 The Project will implement a Bird and Bat Monitoring Plan in accordance with the IDB's protocols for bird and bat monitoring. For Category B projects; the protocol requires two years of monitoring, which the IDB may choose to extend based on the results of the surveys.

6.9 The IDB or an Environmental and Social consultant appointed by the IDB shall certify compliance with all environmental and social requirements of the loan agreement including any Corrective Action Plans if applicable.

**PHOTO LOG – Campo Palomas Wind Power Project**


**Figure 1: Site of office buildings on ANC land**

**Figure 2: First office buildings installed on site**


Figure 3: Waste segregation at office buildings

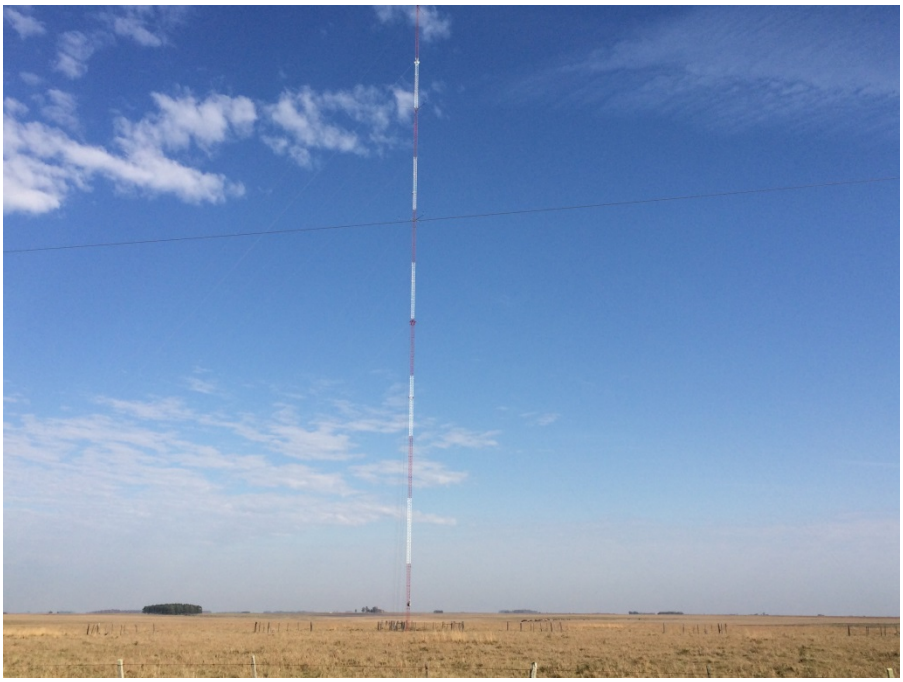

Figure 4: Location of one of two wind measurement towers

Figure 5: View of general wind concession area currently used as cattle grazing land

Figure 6: View to nearest neighbor located in tree grove