1. General information on the scope of the IDB Invest Environmental and Social Review

The environmental and social review of the El Corti Wind Power Plant (the "project") began in January 2017 and is expected to continue until April 2017. The project's business name is Greenwind, S. A., a subsidiary of Pampa Energía (hereinafter the "developer"). The review includes information provided by the developer, such as the environmental impact assessment (EIA) performed in 2011, the first addendum to the EIA (June 2016) describing changes in the project's design (fewer higher capacity turbines), and the resolutions issued by the Provincial Agency for Sustainable Development (OPDS) in June 2011 and August 2016. In addition, copy of the second addendum to the EIA (March 2017), municipal authorizations, the environmental management plan and its programs, as well as additional studies were reviewed. The IDB Invest field visit was conducted on February 21-24, 2017 and included a visit to the property and adjacent areas and to the Multi-Use Natural Reserve of Bahía Blanca, Bahía Falsa, and Bahía Verde. Meetings and interviews were held with the following entities: the developer's corporate Quality, Security, Environment and Health (QSEH) team based in Buenos Aires and the Bahía Blanca team based at the Piedra Buena Thermal Power Plant; local environmental consultants for the project; as well as relevant social actors such as municipal authorities, tenants caring for and living on the property, inhabitants of Casco Calderón, and the non-governmental organization (NGO) Aves Argentinas.

2. Environmental and social classification and rationale

In accordance with the IDB Invest Environmental and Social Sustainability Policies, this project is classified as a category "B" project due to potential environmental and social impacts and risks. These are limited to the project infrastructure, are highly reversible, and can be mitigated through easily accessible measures that can be easily implemented in the context of the operation.

3. Environmental and social context

The project is located in southern Buenos Aires province, 17 km northwest of the city of Bahía Blanca, Argentina. It covers an area of approximately 1,562 hectares of gently rolling topography, all lying below 100 meters above sea level. The property is currently being used for agricultural and livestock activities. Only the caretaker and his family live on the project site, and another family lives close to the property. These are the only inhabited homes within a one kilometer radius of the property. There are no other wind farms operating in the project region.

The site is easily accessed via Provincial Route No. 51. There are no indigenous communities close to the project area. The property does not fall within areas considered to be of historical, archeological, or paleontological value and is not close to any protected area. The property includes a pond with semi-salty water that attracts a variety of aquatic bird species throughout the year. The remaining habitat in the project area is of generally low biodiversity value and consists primarily of wheat crops and pastures for livestock.

4. Environmental risks and impacts and proposed mitigation and compensation measures

4.1 Assessment and management of environmental and social risks

The developer has all its assets certified under environmental, health and safety systems. In addition, some assets also have certification based on quality and/or energy efficiency standards. The scope of the certificates is on a per asset basis. Due to the recent purchase of all assets in Argentina where Petrobras was formerly the majority shareholder, the developer is now working to integrate all its asset management services under a single policy and set of guidelines. The integration efforts began in about August 2016 and the system is expected to be fully integrated by

the end of 2017. An important milestone in this process occurred on April 26, 2017, when the Board of Pampa Energía S.A. approved the new quality, environmental, health and safety policy, encompassing all its controlled companies, and 10 implementation guidelines.

The developer plans to develop an integrated social-environmental management system for the Corti Wind Farm in accordance with the following standards: ISO 9001, ISO 14001, and OHSAS 18001. It should be noted that certification under ISO 14001 is a legal requirement imposed by the National Electricity Regulator (ENRE).

The OPDS issued the authorization for the project's installation and operation on June 22, 2011 (File No. 2145-450/10, Order No. 1630/11). As required in the authorization, because construction work did not begin within one year of when the environmental statement was issued - and because there were modifications in the project design, the developer prepared and delivered an Addendum to the EIA in June 2016. For this reason, the OPDS issued a new resolution (Resolution No. 2669, same file) on August 23, 2016. The developer delivered a new addendum in March 2017 submitting another change in the number and model of generators. Given that the design changes to be presented in this second addendum are favorable to the environment (due to the reduction in number of wind turbines) the OPDS is not expected to issue a new resolution.

The project has received feasibility confirmation in accordance with the Urban Planning Code under Ordinance 15637 and additional Ordinances Nos. 16249 and 18012 (Ref. Doc. File: 0-00.12345-2009 and Annex 1), issued by the Municipality of Bahía Blanca on August 26, 2016 under Resolution No. 10/516/2016. It is understood that these ordinances were issued as a form of support for the development of renewable energy and tourism projects for the municipality of Bahía Blanca.

The most significant potential environmental impacts for the project's operational phase are the impact on birds and bats, the shadow flicker effect, noise generated by the wind turbines, and landscape quality effects. The shadow flicker effect will potentially affect a section of about 3,600 meters along Provincial Route 51. Modeling of the potential impact of noise generated by the wind turbines determined that noise levels close to Provincial Route 51 and homes and communities adjacent to the property will remain within permissible limits. The areas of La Salada and La Julieta, where the caretaker's home is located within the property, maybe be exposed to higher noise levels and will be the object of a noise monitoring program.

The most significant impacts during the construction phase will be: increased vehicular traffic due to transport of concrete and turbine parts; the impact on the water table due to extraction of water from the well on the property; generation of noise and dust; and landscape quality impacts due to the presence of construction cranes.

The qualitative risks of natural disasters were evaluated. Based on the characteristics and history of the region, there is little probability of a natural disaster that would impact the project or adjacent areas.

According to the EIA and its addenda, there are plans to develop a number of environmental and safety and hygiene plans and programs, which are set out in the environmental management plan (EMP). These programs are being developed by the environmental consultant contracted by the developer. The programs for the preparation and construction stage are: program to monitor environmental protection, safety, and occupational hygiene measures; emergency prevention and contingency plans; management of waste, liquid effluents, and gaseous emissions; and the community training and communication program. All will be ready before the date when site preparation begins. Programs for the operation and maintenance stage will include: inputs management and stockpiling program; waste, liquid effluent, and gaseous emissions management

program; emergency prevention program and environmental contingencies plan; as well as an environmental monitoring program.

The developer plans to contract a specialist who will carry out the environmental and safety and hygiene functions for supervising compliance with the environmental management plan (EMP). This individual will report to the Safety, Occupational Health, and Environmental Manager at the Piedra Buena Thermal Power Plant (located in Bahía Blanca), who will also be responsible for El Corti. The team assigned to the El Corti project will be supported by the QSEH corporate team based in Buenos Aires. Specific staff will include the QSEH Manager, the Environmental and Contingencies Manager, the Safety and Hygiene Manager, and the Environmental Consultant. As for the social management portion, the project has the support of the Institutional Relations Manager in Bahía Blanca and the support of the developer's corporate Institutional Relations and Press Manager. The subcontractor Vestas plans to contract an advisor on social issues and an HSE specialist for the project.

The EMP includes the development and implementation of an emergencies prevention program and contingency plans for both the site preparation and construction phase and the operation and maintenance phase. In accordance with the EMP, these programs are primarily focused on environmental and safety and hygiene contingencies.

The EMP includes the preparation of an environmental monitoring plan, which will consist of ongoing verification of the parameters necessary to control and monitor potentially adverse environmental impacts that the wind farm may generate during the construction and operation stage. The environmental parameters to be controlled are: electrical fields, radio interferences, touch and forward voltages, audible radius, grounding, noise level, vibrations, impact on birds, and solid and semi-solid waste. The sites where measurements will be taken will be determined by the ENRE, the Provincial Natural Resources Directorate, the OPDS, and the operator of the wind power plant.

Although the project is not expected to cause relevant social impacts, the developer mapped and identified El Corti's stakeholders and held two public meeting, in the municipality of Bahia Blanca headquarters, to present the project and address questions or concerns. The first one was organized by the ENRE on July 6, 2012 during the formal process of environmental licensing, and was attended by representatives from the environmental auditors of Bahía Blanca and the Energy Secretariat, the General Cerri Neighborhood Environmental Association and other organizations and members of the community. The second meeting was held on April 5, 2017, and public authorities from the municipality, local lawmakers, NGOs representatives and community members were present. In both meetings no opposition were reported on the part of those in attendance.

Besides the public meetings, the company also proceed with announcements in local newspapers, on the radio and on television. A stakeholder engagement plan will be produced and implemented in the near future.

Currently, the developer is present in Bahía Blanca because of the Piedra Buena Thermal Power Plant and the Bahía Blanca Refinery. As an important part of the external communication and grievance mechanism, the developer will rely on the support of the Control and Monitoring Committee of Bahía Blanca and the Executive Technical Committee. The Control and Monitoring Committee holds monthly meetings with the participation of various interest groups such as energy operator companies, universities, NGOs, and neighborhood boards. In the region of Bahía Blanca, the Executive Technical Committee functions as the receiver and mediator of complaints from neighbors for everything related to the operations of industrial plants. For the project, the plan is to continue relying on both committees for external communications and as a grievance mechanism in addition to implementing the Community Communication program. In addition, Pampa has a system

called “Ethical Line” that covers all its operations; it serves as an exclusive and strictly confidential channel for reporting any violation of the Corporate Code of Conduct, covering collaborators, clients, suppliers, and other related parties.

4.2 Labor and working conditions

The construction stage is expected to involve around 300 people at its peak. The subcontractor, Vestas, will be responsible for contracting and coordinating the workforce during the construction and operation stage. It has already identified the Human Resources manager for the El Corti project, who will be a local employee familiar with the area’s labor situation. The developer adheres to local and/or union requirements, giving preference to contracting local labor. According to discussions with the developer’s corporate human resources team, when a high degree of unemployment is identified in a region of the country, the various provincial and local authorities officially ask companies to hire locally through a policy called “buy local.” In the case of the Corti project, the workforce will be hired locally and from nearby communities, except for those tasks that require specific technical skills not available in the area. Because of this arrangement, setting up encampments is not expected to be necessary since the project area is close to the city of Bahía Blanca. Both the developer and Vestas include working conditions and terms of employment in their health and safety plans.

All employees and contractors working for the developer are entirely free to join a union of their choice. The developer’s local teams are responsible for relations with the unions and as of now the developer currently has relationships with the following unions: the Light and Energy Union (incl. Bahía Blanca), the Argentine Federation of Light and Energy Workers, and the Building Workers’ Union.

Due to the large number of contractors and subcontractors that the developer manages nationally, it has a legal compliance registry system on matters of labor, social security, and work safety and hygiene covering its contractor companies; the system is called *C-Laborem*. This procedure controls the level of compliance in order to minimize contingent risks by encouraging contractor companies to operate under suitable conditions. This registry has an early warning on potential labor claims filed by contractor company employees, which may promote administrative level resolution of the cases received.

Vestas will inform workers about the complaints mechanism as soon as they are hired. This mechanism must be easily accessible and should function efficiently, handling complaints, channeling them, and ensuring that the worker does not suffer reprisals. Its use should be easily understood and transparent. It should also provide the option of filing complaints anonymously. All of this will be managed through Vestas, consistent with the developer’s policies.

4.3 Resource efficiency and pollution prevention

During the construction phase, it is estimated that the project will release emissions into the air from vehicles and construction equipment in general. In transporting concrete alone, it is estimated that the project will use about 1,500 trucks to transport a total of 12,000 m^3 of concrete (400 m^3 of concrete/turbine) from authorized materials banks to the project site. During operations, it is estimated that the project will move a total of 219,635 tons of CO_2eq per year. This estimate was calculated using the specific emission factors for each type of fuel recommended by the U.S. Environmental Protection Agency (EPA) and the guidelines of the Intergovernmental Panel on Climate Change (IPCC) given that in Argentina they are used by both the company that administers the wholesale electricity market (Compañía Administradora del Mercado Mayorista Eléctrico S. A. - CAMMESA) and the Energy Secretariat. The estimates were calculated using an average specific

emission factor of 0.527 tons of CO_2 per MWh (478 grams of CO_2 per KWh).

According to the EIA, the project will require water for the site preparation and construction phase, primarily to control dust and for other minor uses. The plan is to drill two boreholes and install two submersible pumps with a sufficient volume of water for the project's needs. One borehole will be drilled on the project site and the other at the transformer station. To do this, the project will have to obtain the appropriate permits and certificates for using the estimated volume and for the use intended.

The construction stage is expected to be the stage that produces the largest volume of waste, primarily waste from human consumption. Hazardous materials will include fuel for vehicles and construction equipment, primarily diesel and gasoline. These will be purchased at regional service stations, primarily in the city of Bahía Blanca. The plan is to store diesel in a mobile tank vehicle for use in generators. Brake pads, filters, seals and luminaries, oils, lubricants and greases and liquid fuels will be used during the operation and maintenance of the wind power plant.

The environmental management plan provides for the development of a waste and liquid effluents management program to be implemented during the construction and operation of the wind power plant. It also provides for developing an inputs handling and collection program for both phases of the project, to include instructions on the proper handling of hazardous materials. A dedicated area will be designated for storing waste such as lubricants, additives, refrigerants, and fuels, which will have a spill containment system and will be made available to companies authorized to dispose of such waste. Measures to reduce the production of waste will be implemented.

4.4 Community health and safety

Vehicular traffic risks will primarily occur during the site preparation and construction period due to the transport of concrete and equipment for the turbines, primarily via Provincial Route No. 51. That route is in very good condition and is currently used as one of the principal routes in Bahía Blanca for transporting materials. The developer has had meetings with the Bahía Blanca Transit and Transport Department and plans to obtain the road permits needed to use that route. The project plans to implement a vehicular traffic management and control plan, to include considerations regarding potential risks to communities along the transport route.

In December 2016, the Ventus Energía company performed a new noise modeling exercise, taking the new wind turbines into account. Given that Argentine regulations do not have standards in this regard, this modeling was performed using international standard ISO 9613-2 Acoustics – Attenuation of sound during propagation outdoors. The results indicated the areas exposed to higher noise levels will be La Salada and La Julieta, with levels varying between 44 and 45 dB. Once the wind farm is put into operation, the project will take measurements to corroborate the noise levels estimated in the modeling. In addition to taking new measurements, the project plans to implement a monitoring program to record the noise levels produced by the wind turbines, verifying compliance with standard IRAM 4062, called "Residential noise disturbances" (SE 304/99 and ENRE 0197/2011, Art. 4 and b p/ wind turbines). For the new study, to be done during the operational stage, the project will follow the guidelines in the World Bank Group's Environmental, Health, and Safety Guidelines for Wind Energy, section 1.1.2.

Shadow effect modeling was done in December 2016 by the Ventus Energía company using a windPro 3.1.579 software program. The modeling results indicated that about 3.6 kilometers of Provincial Route No. 51 could potentially be affected by the shadow effect. Although this is a remote possibility given the geographic location of the wind farm, the developer plans to put up signs warning the community about these possible effects. The restrictions used for the layout consist of a

safe distance (hub height + blade length) multiplied by 1.5, i.e., 225 meters from the limits of the property to the wind turbines and 250 meters from the high, medium, and low voltage lines found on the site. A distance of more than 500 meters is maintained between the wind turbines and neighboring rural centers and the (projected) transformer station.

The emergency prevention and environmental contingencies plan program will include a section on the handling of road accidents. Although that program has a section on external communication and communication with the media and authorities, it is important that the program also include clear details on coordinating and communicating with neighboring communities.

The project plans to contract a company dedicated to security and surveillance at the project site during the construction and operation phases. There is no plan for security personnel to be armed.

4.5 Land acquisition and involuntary resettlement

The project has deed No. 426 conferring usufruct rights for La Julieta and La Salada properties. The deed was signed on November 28, 2009 by the owner and the developer and has a term of 20 years.

The project will not include any physical or economic displacement. The property is currently being used for agricultural and livestock activities. Only one person currently works on the property full time. He lives on the property with his family and the plan is for him to stay in his residence throughout the development of the project. The noise study was done with the assumption that his home would continue to be occupied. The livestock activities will be temporarily moved to a neighboring property while construction of the wind farm is under way. Once the wind farm is operating, agricultural and livestock activities will return to the property.

4.6 Biodiversity conservation and sustainable management of living natural resources

Approximately 70% of the surface of the project area is covered by fields of wheat crops. The other 30% of the area is covered by portions of pampas grasslands habitat with signs of strong pressure from domestic cattle grazing, showing relatively short and scarce grass cover and the prevalence of exotic species. The site contains very few trees, consisting primarily of small parcels planted with non-native species.

The EIA and a subsequent field study conducted by ornithologists contracted by the project determined that the project may potentially have an adverse impact on birds and bats in the area. These taxa are susceptible to colliding with wind turbine rotors or with the electrical lines associated with the project. The ornithologists' study analyzed in particular the potential risk associated with the presence of a pond within the project area that is used irregularly by aquatic birds. All the sensitive bird species that the ornithologists identified as potential users of the pond are classified by the UICN as "near threatened." These include Chilean Flamingos (*Phoenicopterus chilensis*) and three species of geese of the genus Chloephaga (*C. rubidiceps, C. poliocephala, and C. picta*). Buenos Aires law 12.250 [1999] designates *C. rubidiceps* as a natural monument. Buenos Aires law 14.038 [2009] prohibits the hunting of *C. rubidiceps, C. poliocephala*, and *C. picta*. It should be noted that to date none of the three geese species has been recorded on the project site, so it is not sure that these species actually inhabit the project site.

While not much is known regarding the specific collision risk of these species, there have been studies on the risks to similar species on other continents. Those studies report that aquatic birds' collision rates with wind turbines are very low. As for the risk of colliding with electrical lines, the developer is studying the installation of bird flight diverters at intervals of 15 meters or more on the project's only overhead section of line up to the Bahía Blanca transformer station. The remaining

connections are underground.

The developer agrees to carry out a robust monitoring program during the initial years of the project's operational phase. Results will be incorporated within an adaptive management framework, under which reasonable mitigation and/or compensation measures may be triggered if impacts more significant than those anticipated are encountered.

4.7 Indigenous peoples

No indigenous communities have been identified in the area of Bahía Blanca close to where the wind farm will be installed.

4.8 Cultural heritage

The developer plans to implement a program to protect the cultural heritage and archeological or paleontological finds, to include measures to be taken in the event of any chance finds. According to the environmental management program, training sessions will instruct workers regarding actions to be taken in the event of any such chance finds.

5. Environmental and social action plan

ID	Action	Deliverable	Deadline

1	Implement an environmental and social management system (ESMS) and associated management plans, with scope specific to the El Corti Project, consistent with IFC's Performance Standard 1.	ESMS manual in form and substance acceptable to the IDB Invest, including a master implementation schedule and the following specific plans, programs, and policies (among others as necessary), for both construction and operations phases: • Worker health and safety plan(s), covering high-risk activities such as work-at-heights and work with electricity, and including incident reporting procedures; • Worker code of conduct; • Human resources policy conformant to IFC Performance Standard 2; • Local hiring procedure to maximize hiring of workers from local communities; • Worker accommodation management plan; • Cafeteria, kitchen, and bathroom sanitation management plan; • Stakeholder Map; • Stakeholder and community engagement plan; • Emergency prevention and response plan(s); • Liquid and solid waste management plan; • Hazardous material management plan; • Environmental and social training plan; • Traffic management plan, covering transportation of project-related heavy machinery, equipment and parts (e.g., turbines); • "Chance finds" procedure for archaeological remains; • Contractor management plan, including clauses to be included in contracts with contractors (e.g., Vestas) to cause contractors to comply with the Greenwind's ESMS and other environmental and social policies and procedures. • Environmental, health and safety and monitoring plan.	1. Complete version for construction phase, prior to First Disbursement; 2. Complete version for operations phase, at least 3 months prior to Commercial Operation Date.

2	Implement and socialize a complaints mechanism for all project-related workers.	Documentation demonstrating the implementation and socialization of a complaints mechanism, as part of the project's ESMS, including the option for submitting complaints anonymously.	Prior to First Disbursement
3	Carry out a round of noise monitoring according to the guidelines established in Section 1.1.2 of the World Bank Group's Environmental, Health and Safety Guidelines for Wind Energy (Section 1.1.2), and mitigate, or if mitigation proves not to be feasible, compensate affected local residents for noise impacts exceeding the limits presented in the World Bank Group General Environmental Guidelines.	Report presenting methodology and results of noise monitoring study, and proposed mitigation or compensation measures if appropriate.	Three months after Physical Project Completion.
4	Contract qualified expert(s) to complete the project's bird and bat baseline studies over the course of a year, and to monitor bird and bad impacts for the following two years.	1. CV of expert(s) and terms of reference for work, both acceptable to the IDB Invest. 2. Report on baseline conditions 3. Monitoring report	1. Prior to First Disbursement 2. Within one year of First Disbursement 3. Quarterly from Commercial Operation Date
5	Develop an Adaptive Management Plan to be implemented in the event that the project results in significant impacts to bats or geese (genus *Chloephaga*).	Adaptive Management Plan in form and substance acceptable to the IDB Invest, defining the following: specific mitigation and compensation actions; allocated budget for each action; and the specific triggers that would necessitate the implementation of each action.	Prior to Physical Project Completion.
6	Submit an Environmental and Social Compliance Report to the IDB Invest annually.	Comprehensive report, detailing compliance with all Environmental and Social Requirements, as defined in the Loan Agreement.	1. Template, prior to Financial Close 2. Complete reports, Annually from date of Financial Close