



Supplementary Lenders Information Package (SLIP) in complement of Environmental and Social Impact Assessment

Vientos Neuquinos I Wind Farm Project
(Neuquén, Argentina)

28 June 2019

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Vientos Neuquinos I Wind Farm Project (Neuquén, Argentina)



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ACRONYMS AND ABBREVIATIONS

ADI-NQN SEP	Agencia De Inversiones Del Neuquén
AES	AES Argentina (Developer)
CAMMESA	Compañía Administradora Del Mercado Mayorista Eléctrico Sociedad Anónima
CR	Critically Endangered
DD	Data Deficient
EN	Endangered
ENRE	Ente Nacional Regulador de la Electricidad
EPEN	Ente Provincial de Energía del Neuquén
ERM	ERM Argentina (Suitability consultant)
ESIA	Environmental and Social Impact Assessment
ESMS	Environmental and Social Management System
ESMS	Environmental and Social Management Plan
EW	Extinct In The Wild
EX	Extinct
GDP	Gross Domestic Product
GHG	Greenhouse gas emissions
IBAT	Integrated Biodiversity Assessment Tool
IFC	International Finance Corporation
IFC PS	IFC Performance Standards
IUCN	International Union for Conservation of Nature
LC	Least Concern
MATER	Mercado a Término de Energía Eléctrica
NPA	Natural Protected Area
NT	Near Threatened
OPIC	Overseas Private Investment Corporation
RN	National Road
RP	Provincial Road
SADI	Argentinian Interconnection System
SLIP	Supplementary Lenders Information Package
UOCRA	Unión Obrera de la Construcción de la República Argentina
VEC	Valued Environmental and Social Component
VU	Vulnerable

EXECUTIVE SUMMARY

The "Parque Eólico Vientos Neuquinos I" project (hereafter "the Project"), being developed by AES, consists of the construction and operation of a wind farm, including 29 wind turbines for a total installed power of approximately 100 MW, as well as related infrastructure (electrical substation and connection to high voltage electric line that passes within the site boundaries). It is located at approximately 40km the northeast of the town of Piedra del Águila, in the Neuquén Province. First phase of construction has started comprising the electrical substation at the project site. Regarding the initiation of the operation phase, delivery of the first 80 MW is expected by February 2020 and the remaining 20 MW by April 2020. The Project is permitted from an environmental and social regulatory permitting standpoint (license granted by Under-Secretariat of Environment of the Neuquén Province in September 2017).

The Overseas Private Investment Corporation (OPIC) is considering participating to the financing of the Project. As part of its financing policy, OPIC requires that projects comply with the International Finance Corporation (IFC) Environmental and Social Performance Standards. OPIC has therefore reviewed and commented upon the project's existing environmental and social impact assessment study, and required additional clarifications or further studies on certain aspects.

This Supplemental Lender Environmental and Social Information Package (SLIP) aims at supplementing the existing ESIA Study for the Project and therefore respond to OPIC's request. It was prepared based on a review of available information, the existing environmental and social impact assessment study report (2017) provided by AES, the consultation of publically available data sources, as well as a one-day visit to the Project area.

The most relevant aspects covered by this SLIP include the following topics:

- Legal Framework, Area Of Influence;
- Land Acquisition;
- Project Alternatives;
- Environmental and social baseline conditions;
- Indigenous People;
- Public Consultation;
- Biodiversity (Critical Habitat Screening And Preliminary Assessment);
- Ecosystem Services;
- Community Health, Safety And Security;
- Transportation Route Assessment;
- Noise;
- Flickering;
- Supplemental Impact Assessment;
- Cumulative Impacts;
- Environmental and Social Management Plan.

The table overleaf summarizes the main conclusions presented in this SLIP.

Table 0-1 Summary Table of most relevant elements

Element	Description
Land Acquisition	<p>The Disposition N°184 S.T. /13 granted Administrative Easement of an area of 2 580 ha in favor of Vientos Neuquinos I S.A. for the development of the Project.</p> <p>Approximately 400 m away from the Project area, there is a house and several cattle corrals owned by a family, who has confirmed their support for the Project subject to the Project not affecting grazing for his cattle. This family do not hold property rights on the piece of land where his house is located. Negotiations are underway between AES and this family to agree on compensation for temporary disturbance to access to some parts of the grazing areas otherwise used by his cattle, related to project construction activities. Regarding permanent access to the Project, the Provincial Agency of Electric Energy (EPEN) authorized AES to enter the Project area by the electro duct easement during construction. A second option is the extension of the Provincial Route 47 to be built by the Neuquén Government. Finally, negotiations to obtain easement for a shortest private access to the Project by Route 237 (8.5 ha) are still in progress.</p>
Indigenous People	<p>There are no indigenous communities in the Project Area that may be affected by the Project land take or E&S impacts. The nearest indigenous community is the Ancatrú Mapuche community in Collón Curá, at approximately 70 km from Project site and 30 km from Piedra del Águila urban center, composed of approximately 80 families, with an estimated population of 320 people, mostly made up of adults and elderly citizens.</p>
Public Consultation	<p>Reportedly, the Notification Certification No. 204117 issued by the Under secretariat of Environment of the Government of the Province of Neuquén validates the public consultation carried out by Vientos Neuquinos.</p> <p>Vientos Neuquinos must comply with the requirements emanating from the substantive technical bodies that authorize the works related to the Project.</p> <p>No copy of the Notification Certification was available.</p>
Social	<p>The closest towns to the project area are Piedra del Águila, Picún Leufú and Santo Tomás. During the construction phase, if not properly addressed, the influx of workers can generate moderate negative social impacts, because it can lead to an increase in the prices of goods and services, greater competition for services and a feeling of marginalization among the local population. It can also lead to other community health impacts, sex trafficking and gender-based violence. The influx of Project's EPC workers can also produce a negative impact on accommodation and food services, given that current infrastructure might be saturated.</p> <p>On the other hand, a positive impact is expected on the economy and employment.</p> <p>A positive impact on local economy is expected during the operation phase.</p>
Biodiversity	<p>The supplemental biodiversity evaluation conducted for this report indicates that of 265 species of vertebrates identified, including 189 bird species, 7 bats, 43 terrestrial mammals, 6 amphibian, 20 reptiles and 13 insect species, only two species – one amphibian and one terrestrial mammal – are classified by</p>

Element	Description
	<p>the IUCN as Endangered (EN) or Critically Endangered (CR). Regarding priority species, we found that 8 bird species and 6 bat species have a priority status, from which one bird and three bat are classified with a high priority. Several mitigation measures were proposed, among the monitoring and keeping a bird mortality registry. The evaluation conducted to determine if the project area is a Critical Habitat, lead to the conclusion that the area does not qualify as a Critical habitat, but further evaluation and field assessments must be performed to confirm this. Should further monitoring determine the presence of critical habitat triggers, then the Project will establish a Biodiversity Management Plan in line with IFC Performance Standard 6.</p>
Ecosystem Services	<p>According to the Ecosystem services Screening Assessment conducted for this study, there following priority ecosystem services were identified: trout sport fishing, livestock farming, herbs and plants, freshwater and non-use value of biodiversity (e.g. existence, bequest value) species and areas valued globally as of high conservation value.</p>
Transportation Assessment	<p>Route</p> <p>Traffic associated with Project construction could impact existing transportation conditions and resources in three primary ways: (1) increased congestion or delay, (2) degradation of affected road infrastructure, and (3) increased transportation safety risk. These impacts were rated as minor, provided that the indicated mitigation measures are implemented.</p>
Noise, Flickering	<p>Regarding noise: the nearest receptor is a rural housing located outside the Project area, approximately 250 m to the south, which according to the modelling estimated sound power levels will be exposed to noise levels up to 40 dB(A). With the mitigation measures indicated for this impact, which includes a grievance procedure, this aspect was rated as minor.</p> <p>Regarding shadow flickering: According to IFC guideline, the predicted duration of shadow flickering should be less than 30 hours per year and be less than 30 minutes per day at all sensitive locations.</p> <p>Based on modelling results, the closest and only residential receptor will have 10-30 minutes of shadow flickering per day (in compliance with the IFC limit), in the worst case scenario. Considering these aspects, the impact was rated as minor, as well.</p>
Cumulative Impacts	<p>This SLIP has considered the cumulative effects of the Project's potential E&S impacts together with those generated by Picún Leufú and Los Meandros Wind Farms (approximately 70km and 120 km away, respectively), and the known external pressure sources (e.g. tourist flow and extreme weather conditions) on the identified VEC, including: (1) Local Employment, (2) Local accommodation services, (3) Road traffic and (4) Birds diversity.</p> <p>Potential cumulative impacts of note are related to traffic and workers accommodation within nearby communities. Key mitigation proposed is based on a traffic management plan as well as a Code of Conduct among (direct and indirect) workers, supervising subcontractors with inspections to their accommodations and to count with an on-site medical surveillance service. In addition, coordination activities with local governments and owners of local accommodation services of nearby towns, so that the project needs are met, without affecting the other users of these services, mainly tourists.</p>

Element	Description
	Potential cumulative impact has not been assessed for birds diversity because there are no similar wind projects in the surroundings. The closest projects are about 127.59 km (Los Meandros Wind Farm) and 72.67 km (Picún Leufú Wind Farm), both of them paralyzed, therefore, they have not been considered in the cumulative impact assessment. Other projects with potential impact in the birds have not been identified.
Environmental And Social Management System.	According to the requirement of the local electricity regulation agency (<i>Ente Nacional Regulador de la Electricidad - ENRE</i>), an EHS Management System needs to be certified within the first 180 days of operation. Consequently, AES is developing a Management System to comply with such requirement, which in addition will incorporate Social and Biodiversity elements in line with IFC Performance Standards. The Environmental and Social Management System (ESMS) for the Project is being developed for the different project stages, incorporating commitments aligned with IFC PS1.

Further detail on environmental and social aspects related to the Project are described hereunder in this SLIP. For potentially significant impacts, mitigation commitments are summarized in an environmental and social management plan, to be implemented by AES as part of the construction and operation phases.

Lastly, in line with the requirements of the IFC Performance Standards, the Project's Stakeholder Engagement Plan, includes specific commitments for the disclosure of Project-related information to stakeholders, period consultation to collect stakeholder feedback on expectations and potential concerns regarding the Project. The stakeholder engagement plan will also include a Grievance Procedure (internal and external) that will allow for the collection, tracking, resolution and monitoring of potential grievance from workers or third parties related to the Project.

1 PROJECT DESCRIPTION

1.1 Overview

The project "Parque Eólico Vientos Neuquinos I" (Project) consists of the construction and operation of a wind farm, for which the installation of 29 wind turbines with a nominal power of 3.465 MW will be required, for a total installed power of 100,485 MW, as well as additional related infrastructure.

The model and technology of the turbines rely on three blades and a steel tower. The wind turbines to be used will consist of three main elements: the tower, the nacelle and the three-bladed rotor. Other minor components include the cube, front cone, wiring, stairs control panels and internal tower installations, among others.

The specifications of each wind turbine will be as follows:

- Brand: ACCIONA
- Model: AW 132/3300 IEC IIB TH120
- Hub height: 120 m
- Power per wind turbine: 3.465 MW
- Total power of Wind Farm: 100,485 MW
- The Project will be developed in three main stages: Construction, Operation and Maintenance, followed by ultimate Abandonment.

1.2 Project location

The Project is located on an area of fiscal property of the Neuquén Province, Argentina.

This area is located to the north of the town of Piedra del Águila, within the Collón Curá Department of the Neuquén Province.

The Project area is located approximately 38.5 km northeast of Piedra del Águila town, 49 km southwest of Picún Leufú town and 75 km southwest of the Exequiel Ramos Mexía reservoir.

It is located at an altitude varying between 550 and 650 meters above sea level.

1.3 Access roads

The main access road is the PR (Provincial route) No. 47. Departing from Piedra del Águila (located 225 km from the city of Neuquén) and traveling 16 km along the NR (National route) No. 237 with northeasterly direction, you access the junction with PR No. 47. From here, we travel approximately 6 km towards the northwest until we reach the internal road through which the Project area is accessed. From there you enter through a gravel road that starts northeast. After traveling approximately 23 km you reach the sector of the project site. The access roads are gravel and have regular traffic conditions due to poor traffic in the area.

1.4 Inner Site Areas

The site where the wind farm will be located occupies an approximate area of 2,603 hectares. The following is a summary of the areas occupied by each of the permanent installations:

Table 1.1 Surfaces to occupy by facilities of the Wind Farm

Installation	Surface (m ²)
Foundations	14.450
Inner roads	168.00
Work platforms for cranes	40.00
Transformer station	18.60
Buildings (control room, office, meeting room and storage)	310.00
Ditches for indoor wiring	12.00

1.5 Construction

During the Construction stage, the following actions will be conducted:

- The transport of the wind turbines and accessories to the site in compliance with transit regulations and communicating these activities in advance to the population and competent authorities.
- The adaptation of existing access roads and the construction of internal roads.
- The construction of platforms for crane work.
- Construction of foundations for wind turbines and excavation of trenches for underground cabling (communication, electrical interconnection and protection).
- On-site installation of wind turbines and underground cabling.
- The construction of a transformer substation, control facilities for personnel (auxiliaries) and service facilities (compact sewage effluent treatment system and transitory hazardous waste storage sector).

Additionally, in this phase, the construction of the temporary facilities will be conducted in an area of 5,000 m².

1.6 Operation and Maintenance

Activities in the operations phase will essentially consist in power generation from the turbines (the speed and orientation of the turbines being remotely controlled) and maintenance.

This will be carried out in line with a dedicated operation and maintenance plan, as well as a specific safety, health and environmental management plan. In order to guarantee the safety and protection of the operation of the wind farm, a series of operational tasks will be conducted: (i) induction and training of personnel; (ii) scheduled maintenance of wind turbines, civil infrastructure and electrical infrastructure; (iii) unscheduled maintenance. Inputs such as oil (gears and hydraulic systems), lubricating greases and antifreeze products are expected to be consumed for maintenance tasks.

1.7 Abandonment

During the Abandonment Stage will be performed dismantling tasks of existing facilities including: (i) removal of wind turbines and external power lines; (ii) removal of underground canalization and foundation bases; (iii) removal of the transformer station; (iv) removal of perimeter fences and signaling.

Scarifying tasks will be conducted in order to promote the natural revegetation of the native flora of all the intervened areas. Planting of native species will be attempted by arranging them in the ground according to the density, diversity and cover identified in the baseline. Additionally, the planting of native species will

be done by arranging them in the soil according to the density, diversity and coverage identified in the baseline.

1.8 Chronogram

Below are the timelines for the execution of the general actions contemplated for the development of the Project. Construction phase is projected to last for approximately 8 months.

Table 1-2 Duration of the development of the Project

Stage	Months
Signature of the PPA (Power Purchase Agreement) and financial closing	6
Works Engineering	4
Hiring of suppliers	2
Construction of wind turbines	8
Civil and electrical works	8
Shipping and transport of foundation rings	2
Construction of transformer station	8
Transport of wind turbines to the site	2
Installation of wind turbines	4
Start-up of the Wind Farm	1
Installation test	1
Completion of work	1

Source: AES (2014)

2 LEGAL & ADMINISTRATIVE FRAMEWORK

This section elaborates on the EHS regulations applicable to the Project, which are listed along with their associated permits in Appendix A with the purpose of facilitating the follow up of the Project's legal requirements.

The Project has obtained its Environmental License. Section 2.5.2.1 includes a description of the project-specific requirements established by the Authority in this license.

Moreover, the Impact Assessment Section lists other commitments assumed by AES Argentina for the Project (Section 9).

2.1 Overview of the Legal and Institutional Organization

Argentina is subdivided into 23 provinces and the Autonomous City of Buenos Aires, each of which has their own constitution, but exists under a federal system.

Argentine law derives from the National Constitution originally ratified in 1853, establishing a federal and republican system of government. The National Constitution represents the supreme source of legal order, along with certain international human rights treaties that were accorded constitutional status as a result of the 1994 constitutional amendments, followed by other treaties, conventions, or agreements entered into by the federal government. Next, in descending order, are federal laws, executive decrees, resolutions, and other administrative acts of the executive branch. Subordinate to the federal sources of law are the provincial constitutions, provincial laws, and provincial administrative rules or acts. Of least hierarchical authority are municipal laws and rules.

Two discrete rulemaking systems coexist, federal and provincial, interrelated only with respect to those matters in which the provinces have expressly delegated their powers to the federal government. Therefore, the provinces retain all the power not expressly delegated to the federal government in the National Constitution (Article 121).

The National Constitution, as amended in 1994, establishes that the provinces have primary domain over the natural resources in their territory (Article 124). The National Constitution directs the federal government to issue rules containing minimum environmental protection standards and mandates the provinces to enact legislation complementary to these federal regulations (Article 41). The regulations establishing minimum environmental protection standards are applicable throughout the entire national territory.

2.2 National vs. Provincial Regulatory Setting

As described previously, when adopting a federal system of government, provinces retained the power that was not expressly delegated to the federal government.

With the amendment of the National Constitution in 1994, the domain of the provinces over the natural resources present in their territories was recognized.

National Law N° 26.190 for Renewable Energy (modified by Law N° 27.191) establishes a promotion scheme including tax benefits for renewable energy activities developed in the provincial territory, granting the exemption for real estate, seals and gross income taxes. Currently, the provinces of Buenos Aires, Catamarca, Chubut, Córdoba, Formosa, Jujuy, La Pampa, Misiones, Salta, San Juan, Tucumán, Río Negro, and Santa Cruz, as well as the City of Buenos Aires, provide tax incentives to renewable energy projects.

2.2.1 Environmental and Health and Safety Regulations

Regulations applicable in the provincial territories may be of both federal and provincial nature depending on the aspects regulated. As mentioned previously, the provinces have primary domain over the natural resources in their territories, and are therefore empowered to issue and enforce environmental regulations to protect these resources. Health and safety regulations, on the other hand, are primarily issued by the federal government.

Federal environmental regulations usually do not apply in the provincial territories, unless they are expressly adopted by internal provincial regulations. However, federal regulations establishing minimum environmental protection standards are directly applicable to the Argentinian provinces according to the National Constitution, and the provincial governments are commissioned to complement them or establish more stringent requirements/standards.

2.3 Authorities

In the federal sphere, the Secretariat of Environment and Sustainable Development (*Secretaría de Gobierno de Ambiente y Desarrollo Sustentable – SAyDS*) enforces environmental regulations. Other significant federal agencies bearing on the environmental issues include:

- The Secretariat of Energy (*Secretaría de Gobierno de Energía*);
- The Secretariat of Renewable Resources and Electrical Market (*Secretaría de Recursos Renovables y Mercado Eléctrico*);
- The Under-Secretariat of Renewable Energy and Energy Efficiency (*Subsecretaría de Energías Renovables y Eficiencia Energética*);
- The Under-Secretariat of Energy Planning (*Subsecretaría de Planeamiento Energético*);
- The Electricity Supervisory Federal Agency (*Ente Nacional Regulador de Electricidad—ENRE*);

The National Constitution establishes that among the powers delegated to the federal government is the issuance of the Labor and Social Security Code to apply within the entire national territory (Article 75). Labor regulations are primarily enforced by the Ministry of Work, Employment and Social Security (*Ministerio de Trabajo, Empleo y Seguridad Social*), and secondly by the Superintendence of Labor Risks, created to administer the system for the prevention of labor risks (H&S). Local offices of these agencies are present in the Provinces and interact with provincial agencies with authority over labor issues.

In Neuquén Province, the Under-Secretariat of Environment (*Subsecretaría de Ambiente*) is the main enforcement authority for environmental regulations. However, other agencies, such as the Under-Secretariat of Hydric Resources (*Subsecretaría de Recursos Hídricos*) also have the authority to issue and enforce some environmental regulations within their areas of competence. The Under-Secretariat of Environment depends on the Secretariat of Land Development and Environment (*Secretaría de Desarrollo Territorial y Ambiente*), while the Under-Secretariat of Hydric Resources depend on the Ministry of Energy and Natural Resources (*Ministerio de Energía y Recursos Naturales*).

2.4 Federal Regulations

This section provides a summary of the most relevant federal environmental and health and safety regulations that apply to wind farms. A brief description of additional federal EHS regulations is included in Appendix A.

2.4.1 National Constitution

The National Constitution, amended in 1994, includes a rights and protections related to the environment. The Constitution guarantees all residents the right to a healthy, balanced environment, suitable to human development, and imposes an affirmative duty on each resident to conserve the environment for future use (Article 41). As amended, the Constitution requires the redress of environmental harm to begin with the obligation to restore the environment to its status ante quo (Article 41). The amendments also grant standing to individuals, including environmental civic associations, and the Federal Ombudsman, to sue the government and individuals to enforce an environmental right specified in the Constitution, international treaty, or Federal Law (Article 43).

As mentioned, the National Constitution also mandates the federal government to issue regulations containing minimum environmental protection standards and the provinces to issue regulations complementary to these, ensuring their applicability throughout the national territory (Article 41).

2.4.2 Human Rights

The Constitution of 1853 remained in force under a number of military regimes that seized power over the course of the 20th century, the only exception being the Peronist Constitution in force between 1949 and 1956.

The Constitution of 1853 and the 1860 amendments were modelled upon the U.S. Constitution, and contain relatively sparsely worded protections of key civil and political rights. Following the U.S. model, a federal system and a tripartite federal government were established. As indicated in the relevant Chart entries, amendments to the constitution (1957 and 1994) introduced a greater emphasis on economic and social rights.

From the mid-1970s to early 1980s, the Argentine military committed widespread violations of human rights in a campaign to destroy support for leftist political views. Domestic prosecution of military leaders and officers was mostly unsuccessful in the face of ongoing obstruction from the military. In late 1993, President Menem and former President Alfonsín, who led the first civilian government after the end of military rule in 1982, completed secretive negotiations to support a convention for broad amendment of the constitution. The major changes were adopted in August 1994, upon completion of the convention's deliberations.

Among the 1994 amendments was a provision to incorporate a number of ratified human rights treaties and other human rights instruments into the Argentine Constitution. This provision, in Article 75(22), specified ten instruments and a procedure for elevation of other instruments to constitutional status. These are:

- American Declaration of the Rights and Duties of Man
- Universal Declaration of Human Rights
- American Convention on Human Rights
- International Covenant on Economic, Social and Cultural Rights
- International Covenant on Civil and Political Rights and its Optional Protocol
- Convention on the Prevention and Punishment of the Crime of Genocide
- International Convention on the Elimination of all Forms of Racial Discrimination
- Convention on the Elimination of all Forms of Discrimination against Woman
- Convention Against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment
- Convention on the Rights of the Child

In addition, the Inter-American Convention on Forced Disappearance of Persons attained constitutional status in 1997, as a result of Congressional action pursuant to the procedures specified in Article 75(22).

2.4.3 Environmental Framework Law

National Law N° 25,675 —known as the Environmental Framework Law— establishes the “minimum environmental protection standards for the adequate and sustainable management of the environment, the preservation and protection of biological diversity and the implementation of sustainable development”.

This regulation provides a framework for environmental regulations throughout the national territory. Among other topics, it defines minimum standard of environmental protection, introduced in the National Constitution, as “any rule providing for uniform or common environmental protection for all the Argentine territory, intended to set the necessary conditions to guarantee the protection of the environment”. It also defines the objectives of the federal environmental policy and the set of principles that will regulate the environmental policy: consistency, prevention, precaution, intergenerational equity, progressiveness, liability, subsidiarity, sustainability, joint and several liability and cooperation.

The main aspects regulated by this Law include:

- The **environmental impact assessment (EIA)** process: The regulation establishes that any work or activity, in the Argentine territory, which is likely to significantly deface the environment, any component thereof or affect the people’s quality of life, is subject to an environmental impact assessment process, prior to its execution. Within the EIA, potential environmental impacts associated with a development project are evaluated and management measures are proposed. The EIA gives special consideration to: land use impacts, bird and bat mortality, noise impacts, shadow flickers, and landscape impacts.
- The **environmental damage**: It defines environmental damage and, in alignment with the National Constitution, the objective responsibility to restore the environment to its status ante quo. It also states that if two or more people are involved in causing a collective environmental damage or if the extent of the damage caused by each of them cannot be accurately established, all of them shall be jointly and severally liable, without detriment, if applicable, to the right of contribution among them.
- The **environmental insurance**: It establishes that individuals performing activities that may create a risk to the environment have to hire an **insurance policy** to guarantee the funding of the restoration activities. These risky activities are defined according to the Environmental Complexity Level (*NCA – Nivel de Complejidad Ambiental*), which is calculated by a formula established in Resolution N° 177/2007 (and amendments) of the Secretariat of Environment and Sustainable Development (*SAyDS – Secretaría de Gobierno de Ambiente y Desarrollo Sostenible*). In certain cases, local authorities request that industrial facilities settled in such province provide evidence of having purchased environmental insurance in order to obtain permits issued by the local environmental authority.

2.4.4 Other Relevant Environmental Regulations

Other environmental regulations significant for this Project include:

- **Environmental Impact Assessment**: Resolution SE N° 475/87, establishes the need to submit an Environmental Impact Assessment before the Under-Secretariat of Strategic Planning including the different alternatives for the energy project; the environmental studies carried out in all its stages, such as inventories, prefeasibility, feasibility; and the environmental surveillance and monitoring program implemented during the project.
- **Environmental Impact Assessment**: Resolution ENRE N° 1725/98 establishes that for the construction and/or operation of electricity transportation and/or distribution facilities, an environmental

impact assessment study must be submitted before the ENRE in accordance with the guidelines of Resolution SE N° 77/98.

- **Hazardous waste:** The federal Hazardous Waste Law, Law N° 24,051, codified by Decree N° 831/93, regulates the “cradle to grave” system of generation, transport, treatment, storage, and disposal of hazardous waste. The Law defines “hazardous waste” as waste that poses direct or indirect harm to human beings or may pollute the soil, water, atmosphere or the environment in general. The Hazardous Waste Law, modeled in part on the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, applies only to waste produced or disposed of in federal territory, waste that may affect people or the environment beyond the boundaries of a single province, or **waste that involves the transport across provincial boundaries**. It establishes the obligation of generators, operators and transporters of hazardous wastes to register in the National Register of Generators and Operators of Hazardous Wastes; and obtain the Annual Environmental Certificate, which will have to be renewed annually and validates how hazardous wastes are handled, transported, treated and disposed of by the registered generator, operator or transporter. In addition, an Annual Environmental Fee (*Tasa Ambiental Anual*) is due.
- **Fuel tanks:** Law N° 13,660 and its Regulatory Decree N° 10,877/60, establish the safety conditions and requirements for the production, transformation and storage of solid, liquid or gaseous fuels. Resolution N° 1,102/2004 of the Secretariat of Energy created the Register of Fuel Tanks (*Registro de Bocas de Expendio de Combustibles Líquidos, Consumo propio, Almacenadores, Distribuidores y Comercializadores de Combustibles e Hidrocarburos a Granel y de Gas Natural Comprimido*), in which the owners of fuel tanks for private consumption, among others, have to register with. National Resolution N° 419/93 (Consolidated Text by National Resolution N° 404/94) of the Secretariat of Energy and subsequent amendments sets forth the creation of auditing procedures in order to perform an efficient and accurate control of the security conditions of refineries, gas stations, storage facilities and any other points of sale of fuels within the Argentinean territory. According to Resolution N° 226/2008 of the Secretariat of Energy, only the national universities registered in a specific register (*Registro de Universidades Nacionales para la Realización de Auditorías Técnicas, Ambientales y de Seguridad*) shall conduct the safety audits of the fuel storage facilities. Finally, in 2005, the former Secretariat of Energy, by means of Resolution N° 785/2005, created the National Program to Control Leaks of Aboveground Hydrocarbon and by-products Storage Tanks. Among other issues, it establishes the need to present an environmental impact assessment prior to the installation of any aboveground storage tank (AST), the registration of all ASTs and the need to perform periodical internal and external controls and audits to verify the operation of the tanks. It also establishes requirements for the closure and decommission of the tanks.
- **Protected areas:** National Law N° 22.351 (modified by National Law N° 26.389) establishes the legal system for the protection of national parks, reservations and natural monuments, and its declaration as such. It defines the three categories for protected areas: National Parks, National Monuments and National Reserves.
- **Indigenous communities:** National Law N° 23.302 (modified by National Law N° 25.799) and its Regulatory Decree N° 155/89 declares of national interest the attention and support to natives and indigenous communities present in the country, and their defense and development towards their full participation in the national socio-economic and cultural process, respecting their own values and methods. This Law acknowledges legal status to the indigenous communities established in the country, and creates the National Register of Indigenous Communities. Finally, it creates the National Institute of Indigenous Affairs, and appoints it as application authority for this regulation, the ILO Convention 107 (presently denounced by Argentina) and other complementary regulations. In addition, National Resolution N° 328/10 of the National Institute of Indigenous Affairs creates the National Register of Indigenous People Organizations.

2.4.5 Health and Safety Regulations

As mentioned, health and safety regulations are primarily issued by the federal government.

General health and safety conditions at work in Argentina are regulated by National Law N° 19,587, Regulatory Decree N° 351/79, and National Decree N° 1,338/96, including the need for facilities to have a medical and health and safety service through licensed professionals registered against the Ministry of Production and Labor (*Ministerio de Producción y Trabajo, MPyT*). In addition, National Law N° 24,557, its Regulatory Decree N° 170/96 and complementary regulations, establish the legal framework for the prevention of labor risks, including labor accidents and occupational diseases. According to these regulations, labor accidents and occupational diseases are required to be declared to the Labor Risks Superintendency (*Superintendencia de Riesgos del Trabajo, SRT*) and to contract a labor risk insurance company (*Aseguradora de Riesgos del Trabajo - ART*).

A brief description of the main health and safety regulations is included in Appendix A.

2.5 Neuquén Province Regulations

The following section includes a brief overview of the main environmental regulations that apply to the renewable energies industry in the Neuquén Province. A brief description of additional provincial environmental regulations is included in Appendix A.

2.5.1 Renewable Energies Regulations

The Neuquén Province issued its Renewable Energy Law, Provincial Law N° 2.596, which adheres to National Law N° 26.190 of promotion of renewable sources use for electrical energy production. Provincial Law N° 3.108 adheres to National Law N° 27.191, which modifies Law N° 26.190. This Provincial Law creates the framework for renewable energy industry, and establishes a promotion scheme including tax benefits for gross incomes, real estate tax and stamp taxes for renewable energy activities developed in the provincial territory.

Decree N° 355/2019 regulates Law N° 3.108, and establishes the process for obtaining the tax benefits: a formal application must be submitted before the Authority, requesting the tax benefits established in Law N° 3.108, including information and documents indicated in Article 3 of the Decree.

The Authority that manages the abovementioned provincial regulations is the Ministry of Economy and Infrastructure.

2.5.2 Environmental Impact Assessment and Environmental License

The **Environmental Impact Assessment** process in the Neuquén Province is regulated by Law N° 1.875 (Consolidated Text by Law N° 2.267) and Regulatory Decree N° 2.656/99 (amended by Decree N° 422/2013).

According to these regulations, renewable energies projects are required to obtain an **Environmental Impact Declaration (*Declaración de Impacto Ambiental – DIA*)** and prepare and obtain the approval of the **Environmental Management Plan (*Plan de Gestión Ambiental – PGA*)** from the Environmental Authority prior to commence any project or activity.

The regulations establish two discrete processes for projects/activities depending on their complexity. Annexes 4 and 5 of Regulatory Decree N° 2.656/99 (as amended), establish a non-taxative list of projects and activities subject to the **Environmental Impact Report** and the **Environmental Impact Study**, respectively:

- An **Environmental Impact Study** is required for more complex activities including, as related to the renewable energies sector: geothermal energy exploitation projects. The process for the approval of the Environmental Impact Study is subject to public hearing.
- An **Environmental Impact Report** is required for less complex and individual facilities and operations, as related to the renewable energies sector: wind farms, solar farms and hydroelectric projects. The approval process for these reports is not subject to public hearings, unless the Authority deems it is necessary based on the specific characteristics and potential social impact of the project.

Annex 2 of Regulatory Decree N° 2.656/99 regulates the approval processes and timeframes for both documents. This process includes a review of formal requirements, technical reviews from the Environmental Authority and other potential authorities they deem necessary to involve, public hearing (for the Environmental Impact Study) or publication and establishing a timeframe to receive observations or comments (for the Environmental Impact Report), and a review from the technical and legal areas of the Authority.

2.5.2.1 Environmental License

The Project obtained its Environmental License from the Under-Secretariat of Environment of the Neuquén Province in September 2017 (Appendix B). When granting the license, the Authority established a number of requirements to be complied with prior to construction:

- Submit the final executive project, including updated plans and work schedule and the locations of temporary structures.
- Fully comply with information reported by the Under-Secretariat of Hydrocarbons in relation to the overlapping of activities.
- Fully comply with NAG-100 regulations, in relation to the Andean gas pipeline.
- Fully comply with Decree No. 1485/2012, if applicable.
- Submit the results of the following studies: soil, simulations of disturbing noise in the neighborhood, shadow flicker, monitoring of birds and record of measurements obtained.
- Inform the Environmental Authority on the companies hired as contractors, and on the environmental responsible during the construction stage.
- Inform the Under-Secretariat of Environment the beginning of the works, with an advance of 72 hours as well as the completion of the work within 15 days of finalization.

These requirements are expected to be updated by the Authority when the addendum submitted is approved and a new license is issued.

2.5.3 Other Environmental Regulations

Other provincial environmental regulations significant for this Project include:

- **Waste management:** Appendix 8, 9 and 10 of Provincial Decree N° 2.656/99, establish provisions for the management of hazardous, pathogenic and solid wastes, respectively. The regulation creates the **Provincial Register of Generators and Operator of Hazardous Wastes**, administered by the applicable authority, and in which all individuals and legal entities responsible of generating, handling, transporting, treating and disposing hazardous wastes in the Province shall be registered. The **Annual Environmental Certificate**, which will have to be renewed annually is granted against this registration, and validates how hazardous wastes are handled, transported, treated and disposed of by the registered generator, operator or transporter. It also regulates the integral management of urban solid

wastes, including the generation, possession, collection, transportation, storage, treatment and final disposal of these solid wastes, and the transformation operations necessary for their re-use or recycling.

- **Water:** The Provincial Water Code (Provincial Law N° 899) and its Regulatory Decree N° 790/99 establish the system for the exploitation and preservation of the water resources of public domain. It establishes the requirement of obtaining permits for the drilling of groundwater wells (**Groundwater Well Drilling Permit** or “*Permiso de Perforación*”, in Spanish) and use of water (**Water Exploitation Permit** or “*Permiso de Explotación*”, in Spanish), which are granted by the Under-Secretariat of Hydric Resources.
- **Wastewater:** The Provincial Water Code (Provincial Law N° 899) and EPAS Resolution N° 181/2000 regulates the **Wastewater Discharge Permit**, under the jurisdiction of the Under-Secretariat of Hydric Resources and the Provincial Entity of Water and Sanitary Services (EPAS).
- **Protected areas:** Provincial Law N° 2.594 and its Regulatory Decree N° 1.186/11 create the Provincial System of Protected Natural Areas, with a number of categories for protected natural areas. No express prohibition is established with respect to the development of oil and gas exploration or exploitation activities in the aforementioned areas.

2.6 International Treaties and Agreements

The Argentine government has subscribed a number of convention, treaties and agreements with the aim of protecting the environment, the cultural heritage, workers, indigenous communities, etc.

Following is a brief list and description of the main treaties and agreements entered into by Argentina in relation to the issues mentioned above. The list provided includes the reference to the law number by which Argentina ratifies each treaty.

- National Law N° 23.724; Vienna Convention for the Protection of the Ozone Layer.
- National Law N° 23.778; Montreal Protocol on Substances That Deplete the Ozone Layer and subsequent amendments (approved by National Laws N° 24.167, 24.418, 25.389 and 26.106).
- National Law N° 24.295; United Nations Framework Convention on Climate Change.
- National Law N° 25.438; Kyoto Protocol on Climate Change (UN).
- National Law N° 21.836; Convention concerning the Protection of the World Cultural and Natural Heritage.
- National Law N° 24.071; ILO Convention 169 on Indigenous and Tribal Peoples.
- National Law N° 22.344 and subsequent amendments (approved by National Laws N° 23.815 and 25.337); Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- National Law N° 23.918; Convention on the Conservation of Migratory Species of Wild Animals (CMS).
- National Law N° 23.919; Convention on Wetlands of International Importance, especially as Waterfowl Habitats and subsequent amendments (approved by National Law N° 25.335).
- National Law N° 24.375; United Nations Framework Convention on Biological Diversity.
- National Law N° 24.701; United Nations Convention to Combat Desertification.
- National Law N° 23.922; Basel Convention.
- National Law N° 26.664; Amendment to the Basel Convention adopted in Genève in October 2004.

- National Law Nº 21.663; ILO Convention 139 on the Prevention and Control of Occupational Hazards caused by Carcinogens.

2.7 International Requirements

The Project is designed to meet Argentinian regulatory requirements and commonly accepted international environmental, social, and consultation standards. These latter standards are primarily guidelines and standards of the International Finance Corporation (IFC), a unit of the World Bank, which form the de facto standards applied to many major operations seeking investments and guarantees from multilateral, bilateral and commercial financial institutions.

These guidelines and standards include IFC's Performance Standards (PS) on Social and Environmental Sustainability, including PS Guidance Notes; IFC's General Environmental, Health, and Safety Guidelines; IFC Environmental, Health, and Safety Guidelines for Wind Energy; IFC's Policy on Disclosure of Information; the World Bank's Anti-Corruption Strategy; and, the Voluntary Principles on Security and Human Rights. The Project is also designed to conform to the Equator Principles, a derivative of IFC/World Bank standards. All of these guidelines and standards are detailed further in the following sections.

The Project is being developed with financing from the Overseas Private Investment Corporation (OPIC). As a result, this Supplementary Lender Information Package (SLIP) has been prepared to conform to the environmental, safety, social and human rights requirements of OPIC. These matters are explained in detail below.

2.7.1 IFC Guidelines, Standards and Policies

2.7.1.1 IFC Performance Standards

IFC updated and consolidated existing policies and guidelines for private sector operations in its "Performance Standards on Social and Environmental Sustainability" (Performance Standards) in April 2006 (2006a). Meeting the requirements of the Performance Standards is generally viewed as meeting good international practice in the context of private sector operations. The eight Performance Standards comprise the following:

- Performance Standard 1: Social and Environmental Assessment and Management Systems
- Performance Standard 2: Labor and Working Conditions
- Performance Standard 3: Pollution Prevention and Abatement
- Performance Standard 4: Community Health, Safety and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management
- Performance Standard 7: Indigenous Peoples
- Performance Standard 8: Cultural Heritage

2.7.1.2 IFC General EHS Guidelines

The IFC General EHS Guidelines, dated April 2007, contain the performance levels and measures that IFC has determined are generally considered to be achievable at reasonable costs by existing technology. The application of these guidelines should be tailored to the hazards and risks established for each project on the basis of the results of the environmental assessment, in which site-specific variables, such as the host country context, assimilative capacity of the environment, and other project-specific factors, are taken into

account. For example, the environmental assessment process may provide justification for alternative project-specific standards or requirements, such as project location, processes, or mitigation measures.

These General EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). These general guidelines are designed to be utilized in conjunction with relevant industry-sector EHS guidelines. The General EHS Guidelines are organized as follows:

- Environmental
 - Air Emissions and Ambient Air Quality
 - Energy Conservation
 - Wastewater and Ambient Water Quality
 - Water Conservation
 - Hazardous Materials Management
 - Waste Management
 - Noise
 - Contaminated Land
- Occupational Health and Safety
 - General Facility Design and Operation
 - Communication and Training
 - Physical Hazards
 - Chemical Hazards
 - Biological Hazards
 - Radiological Hazards
 - Personal Protective Equipment
 - Special Hazard Environments
 - Monitoring
- Community Health and Safety
 - Water Quality and Availability
 - Structural Safety and Project Infrastructure
 - Life and Fire Safety
 - Traffic Safety
 - Transport of Hazardous Materials
 - Disease Prevention
 - Emergency Preparedness and Response
- Construction and Decommissioning
 - Environment

- Occupational Health and Safety
- Community Health and Safety

2.7.1.3 IFC EHS Guidelines for Wind Energy

The IFC EHS Guidelines for Wind Energy dated August 2015 include information relevant to environmental, health, and safety aspects of onshore and offshore wind energy facilities. It should be applied to wind energy facilities from the earliest feasibility assessments, as well as from the time of the environmental impact assessment, and continue to be applied throughout the construction and operational phases.

The EHS Guidelines for Wind Energy include the following topics:

- Industry-Specific Impacts and Management
 - Environment
 - Landscape, Seascape and Visual Impacts;
 - Noise (Construction Noise, Operational Noise and Noise Mitigation Measures);
 - Biodiversity (Pre-construction assessments, Mitigation Measures (Onshore) and Mitigation Measures (Offshore));
 - Shadow Flicker; and
 - Water Quality (Onshore and Offshore).
 - Occupational Health and Safety
 - Working at Height and Protection from Falling Objects;
 - Working over Water;
 - Working in Remote Locations; and
 - Lifting Operations.
 - Community Health and Safety
 - Blade/Ice Throw;
 - Aviation (Aircraft Safety and Aviation Radar);
 - Marine Navigation and Safety (Marine Safety);
 - Electromagnetic Interference (Telecommunication Systems and Television);
 - Public Access; and
 - Abnormal Load Transportation.
- Performance Indicators and Monitoring
 - Environment
 - Emissions and effluent guidelines;
 - Noise monitoring;
 - Environmental monitoring; and
 - Biodiversity Monitoring for the Operational Phase. Occupational Health and Safety Performance
 - Occupational health and safety guidelines;

- Accident and fatality rates; and
- Occupational health and safety monitoring.

2.7.1.4 IFC's Disclosure of Information Policy

IFC adopted its current Policy on Disclosure of Information in April 2006 (2006b). The policy stipulates public consultation and disclosure requirements (including timing) for projects requesting IFC funding. AES has committed to following this policy for the Wind Farm Projects.

2.7.2 World Bank Policies

2.7.2.1 Anti-Corruption Strategy

The World Bank states that corruption undermines development by distorting laws and weakening the institutional foundation on which economic growth depends. Therefore, the World Bank has identified corruption as one of the greatest obstacles to the Bank's mission and purpose, which is:

- To promote open and competitive markets in developing countries;
- To support companies and other private sector partners;
- To generate productive jobs and deliver basic services; and,
- To create opportunity for people to escape poverty and improve their lives.
- Increasing political accountability;
- Strengthening civil society participation;
- Creating a competitive private sector;
- Establishing institutional restraints on power; and,
- Improving private sector management.

2.7.2.2 Increasing Political Accountability

Political accountability is defined as the constraints placed on the behavior of public officials by organizations and constituencies that are able to apply sanctions. This largely depends on the effectiveness of the sanctions and the monitoring of public officials by accountability institutions. Sanctions can be more effective by: maintaining political competition that exposes corruption and holds candidates accountable; establishing a well-designed mechanism for political party financing; promoting the transparency of political activities through free and vibrant media; as well as establishing and enforcing rules and legal instruments to deter corrupt behavior.

2.7.2.3 Strengthening Civil Society Participation

Civil society is composed of, but not limited to, citizens groups, NGOs, trade unions, business associations, think tanks, academia, religious organizations and the media. Civil society mediates between the state and the public with a stake in good governance. When adhering to high standards of accountability, transparency and democratic management, civil society effectively: increases public awareness, adds pressure to politicians, and incorporates the various sectors which may otherwise lack representation.

2.7.2.4 Creating a Competitive Private Sector

Broad-based economic development is supported by a fair, competitive, honest and transparent private sector. However, a few powerful economic interests can, at times, strongly influence the decisions and

policies of the state. Economic policy liberalization, enhanced competition, regulatory reform, good corporate governance, transnational cooperation, and the promotion of business associations, trade unions, and concerned parties may be utilized to balance economic interests.

2.7.2.5 Establishing Institutional Restraints on Power

The state, in particular, may be institutionally restrained from committing abuses by the separation of powers (e.g., executive, legislative, judicial) and the establishment of checks and balances among these powers. Several components need be established to create an institutionally restrained state.

A system of rules is fundamental to a functioning society. As such, an independent, competent, and clean judicial system is necessary to avoid corruption. Once established, this judicial system upholds the daily rule of law.

Anti-corruption laws then deter corruption and prosecute corruptors. In addition, corruption is deterred through predictable, transparent, and accountable government decision-making as well as audits by government-supported organizations with a core of strong, independent, and credible professionals in the judicial, prosecutorial, and police arms of the state. By enforcing the anticorruption laws, the principle of justice is instilled amongst society.

2.7.2.6 Improving Private Sector Management

Another anti-corruption strategy is to reform the internal management of public resources and administration to minimize or eliminate the incentive and opportunities for corruption. Public sector finance and management reform requires:

- The institution of meritocratic systems for appointment, promotion, and performance evaluation that promote adequate pay and regularize benefits;
- Enhanced transparency and accountability with respect to budget management, taxes, and customs;
- Sectoral-service-delivery policy reforms; and
- Service delivery decentralization held accountable through pre-established systems of financial management and auditing.

2.7.3 Equator Principles

The Equator Principles are voluntary international guidelines adopted by the Equator Principles Financial Institutions (EPFI). These include many financial institutions involved in project finance in the extractive sector. The Equator Principles are intended to help investors manage environmental and social risks, which may be associated with international project financing. In general, the Equator Principles are derived from the IFC/World Bank requirements, particularly IFC's Performance Standards. Some of the conditions of the Equator Principles are as follows.

- The project risk has been categorized following the environmental and social screening criteria of IFC.
- An Environmental Assessment has been completed for all Category A and Category B projects.
- The Environmental Assessment report must address compliance with applicable host country laws, regulations, and permits required by the project and, at least, reference the guidelines and safeguard policies applicable under the World Bank and IFC PPAH guidelines.
- Where appropriate, an Environmental Management Plan must be prepared to address mitigation, action plans, monitoring, management of risk and schedules.

Vientos Neuquinos I Wind Farm Project (Neuquén, Argentina)

- Where appropriate, public consultation has been conducted to make the Environmental Assessment (or its summary) available to the public for a reasonable period.

3 PROJECT ALTERNATIVES

3.1 Overall Project context

Argentinian Law No. 27,191 defines renewable power generation as an area of public interest, with a commitment from the State to increase the share of renewable energies (including mini hydro under 30MW capacity) to 8 per cent of the national electricity mix by the end of 2017. With this law Argentina also set out a long term target of 20 per cent of power demand to be covered by renewable energy generation with 10,000MW of renewable power generation to be added to the grid by 2025 (Norton Rose Fulbright, 2016).

Law No. 27,191 and its Regulatory Decree No. 531/2016 enable two ways to comply with their renewable energy consumption quotas. On the one hand, the mechanism of joint purchase developed by COMPAÑÍA ADMINISTRADORA DEL MERCADO MAYORISTA ELÉCTRICO SOCIEDAD ANÓNIMA (CAMMESA), and implemented through the RenovAr program. On the other hand, large power consumers can choose to conclude a private Power Purchase Agreement-PPA, or develop a self-generation project or a co-generation project (Yaneva et al., 2018).

The Renewable Source Electric Power Term Market Regime (or MATER in its Spanish acronym), established by Resolution 281/2017, regulates the individual purchase of electric power (PPA) from sources of renewable energy. This is an alternative to joint purchasing through CAMMESA for Large Power Consumers, with power demands equal or greater than 300 kW. By this way, Large Power Consumers can choose their renewable electricity supplier and conditions can be freely agreed between the contracting parties (Yaneva et al., 2018).

In this context, AES Argentina seeks to develop clean energy projects, mainly as developer and operator of wind farms. Harnessing wind-energy is an eco-friendly process, with an inexhaustible wind resource and minimal environmental footprint. There are minimal fuel and water requirements for operational activities. Wind energy has a short development timeframe compared to most other forms of energy production. Only a relatively brief lead-time is required to design, install and start-up a wind plant.

For the site selection, AES Argentina carried out a screening of the available wind farm alternatives. As a result, a list of possible developments, in condition to be commercialized and in advanced stages to be built as soon as possible, was made.

Among the listed alternatives, different factors were evaluated: wind resource, proximity to the electric interconnection point, the transmission system capacity, infrastructure and logistics issues, social characteristics and potential conflicts. The main objective was to determine competitiveness and the risks associated with the alternatives evaluated.

For the pre-selected projects, audits on various aspects (technical, environmental, legal, social, among others) were carried out supported by specialist consultants. Finally, the Vientos Neuquinos I project was chosen after being awarded in MATER and after being approved by the investment committee of AES.

3.2 Site selection

The project was developed by the Government of the Province of Neuquén together with a private developer named Emprendimientos Energéticos y Desarrollos S.A., and is part of its Provincial Wind Power Program (Decree No. 1837/09) which aims to promote the development of renewable energy and revalue unproductive areas. The two parcels of land where the Project will be installed are of public fiscal property, selected by Agencia De Inversiones Del Neuquén- ADI-NQN SEP, with a total surface area of 2,603 Ha.

The site was chosen on the bases of the assessed wind resource. Another relevant factor was the existence of a nearby overhead transmission line. The existing 132 KV transmission line that connects El Chocón –Piedra del Águila substations, passes through one of the parcels and has enough capacity

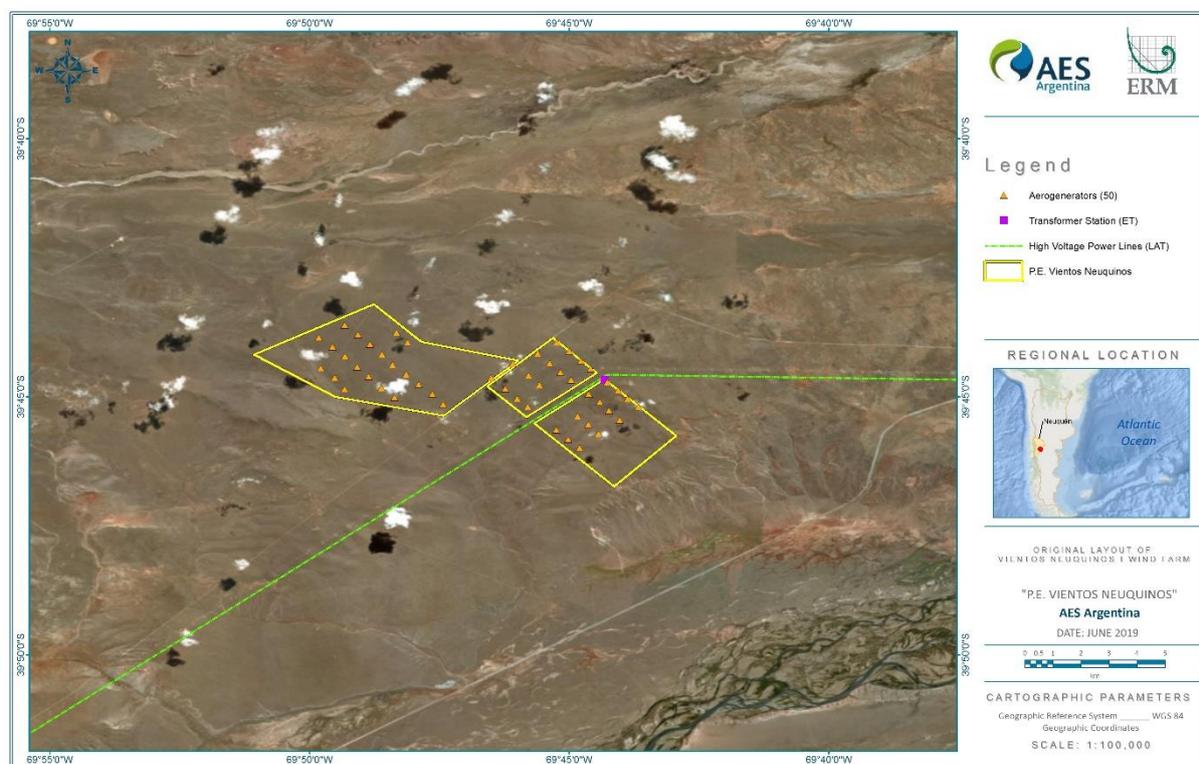
to evacuate the electricity generated by the Wind Farm. Wind resource mapping and power potential assessment for the Project was done by Vientos Neuquinos I S.A. through the analysis of data provided by one meteorological masts that were located within the Project Area, installed in April 2013.

The selection of the site also responds to the existence of nearby access roads (National Route No. 237 and Provincial Route N°47), and unpaved internal paths. The Project is also closed to the city of Piedra del Águila (38.5 km) and Picún Leufu (49 km).

3.2.1 Alternative Locations and Design for Wind Turbines

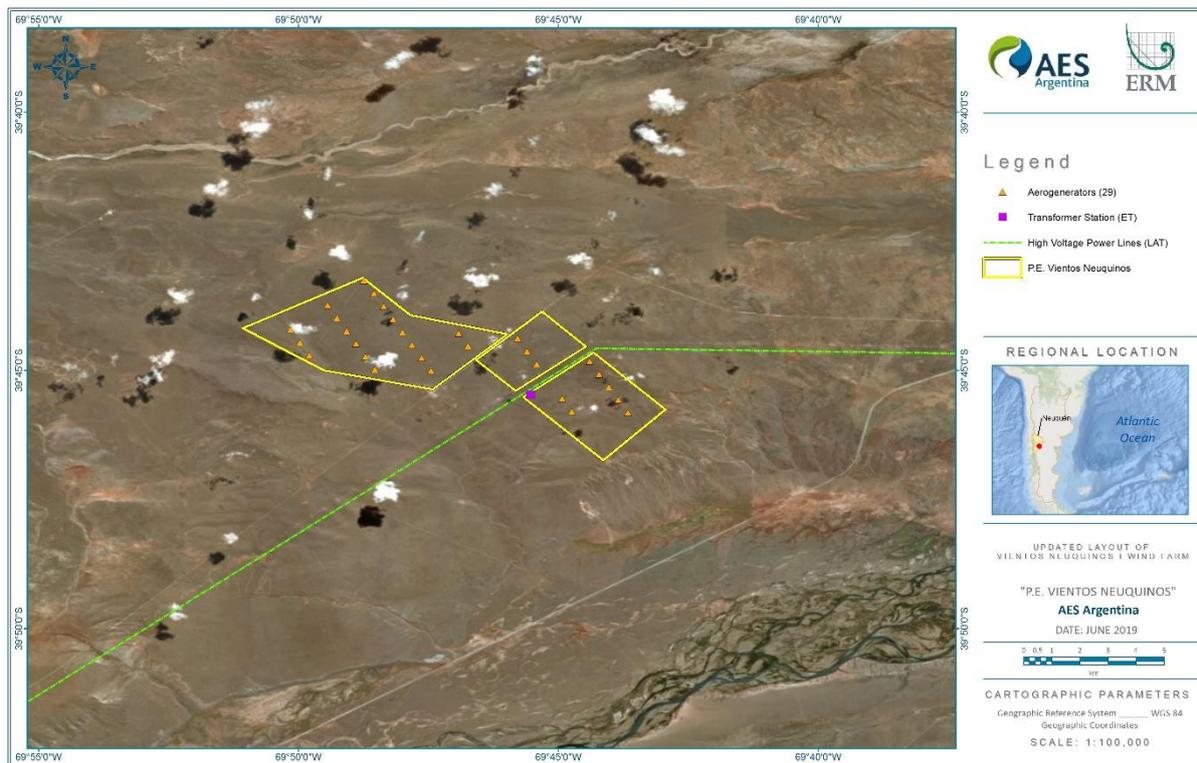
The original layout of Vientos Neuquinos I Wind Farm (as stated in the original *Estudio de impacto Ambiental Parque Eólico Vientos Neuquinos I*) consisted of 50 wind turbines (Vestas brand, model V90-2MW-HH95) a Transformer Station and the link between the Overhead 132 KV Transmission Line that connects El Chocón-Piedra del Águila with the Transformer Station (Figure 3.1). The total installed power was 100 MW.

Figure 3-1: Original Layout of Vientos Neuquinos I Wind Farm.



Latest engineering and optimization studies for the Project led to select a different wind turbine brand, which is comparatively more efficient, and thus the new layout (Figure 3.2) include 29 wind turbines (Acciona brand, model AW 132/3300 IEC IIB TH120) with a total installed power of 100.485 MW (see *Estudio de impacto Ambiental Parque Eólico Vientos Neuquinos I - ADENDA*).

Figure 3-2 New Optimized Layout of Vientos Neuquinos I Wind Farm.



3.3 “No Project” Alternative

No reason could be identified to justify a “no Project” alternative considering the strategic importance of developing renewable power generation capacity in Argentina in general, and the Neuquén province in particular. Alternative power production option would be:

- Thermal: not desirable in the context of reinforcing renewable energy production in Argentina’s power generation mix.
- Hydropower: more complex, with longer head-times, and likely to involve a range of other E&S concerns;
- Solar: being developed as part of other projects in Argentina, but less suited than wind in this region.

Lastly, as further discussed in this SLIP, there are no major environmental or social sensitivities that would justify re-considering the Project at the proposed location.

3.4 References

- Norton Rose Fulbright, 2016. Renewable energy in Latin America.
- Yaneva, M; Tisheca, P and T. Tsanova. 2018. 2018 Argentina Renewable Energy Report

4 AREAS OF INFLUENCE

Aligning the Ecuador Principle 2 and the Performance Standard 1 of the International Finance Corporation (IFC), an Influence Area of the Project has been identified, which includes the potentially impacted areas.

This section defines the direct and indirect area of influence, based on the physical elements, aspects and facilities of the Project become the context of an Area of Influence (Aoi).

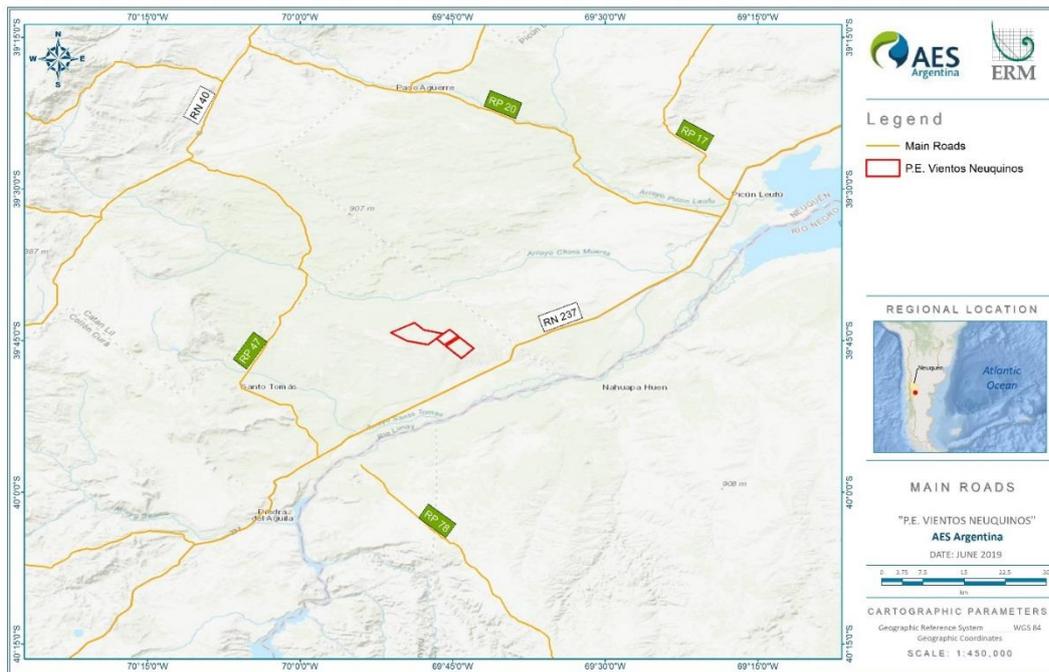
The Area of Influence of the Project was delimited with the PS1 of the IFC, such as:

- The area likely to be affected by:
 - The Project's activities and facilities that are directly owned, operated or managed (including by the Engineering, Procurement, Construction contractor) and that are a component of the Project; and,
 - Impacts from unplanned but predictable developments caused by the Project that may occur later or at a different location.
- Indirect Project impacts on:
 - Biodiversity or on ecosystem services upon which Affected Communities¹ livelihoods are dependent;
 - Associated facilities, which are facilities that are not funded as part of the Project and that would not have been constructed or expanded if the Project did not exist and without which the Project would not be viable; and,
 - Cumulative impacts that result from the incremental impact, on areas or resources used or directly impacted by the Project, from other existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted.

The Aoi include the components that the Project is developing, taking as one of the reference elements; Road access routes to the Project, which according to the EIA are RP No. 47, RN No. 237, RP No. 20 and RN No. 40, as shown in the following map:

¹ "Local communities directly affected by the Project" (IFC Performance Standards on Environmental and Social Sustainability, IFC, 2012)

Figure 4-1: Map of the main access roads of the Project

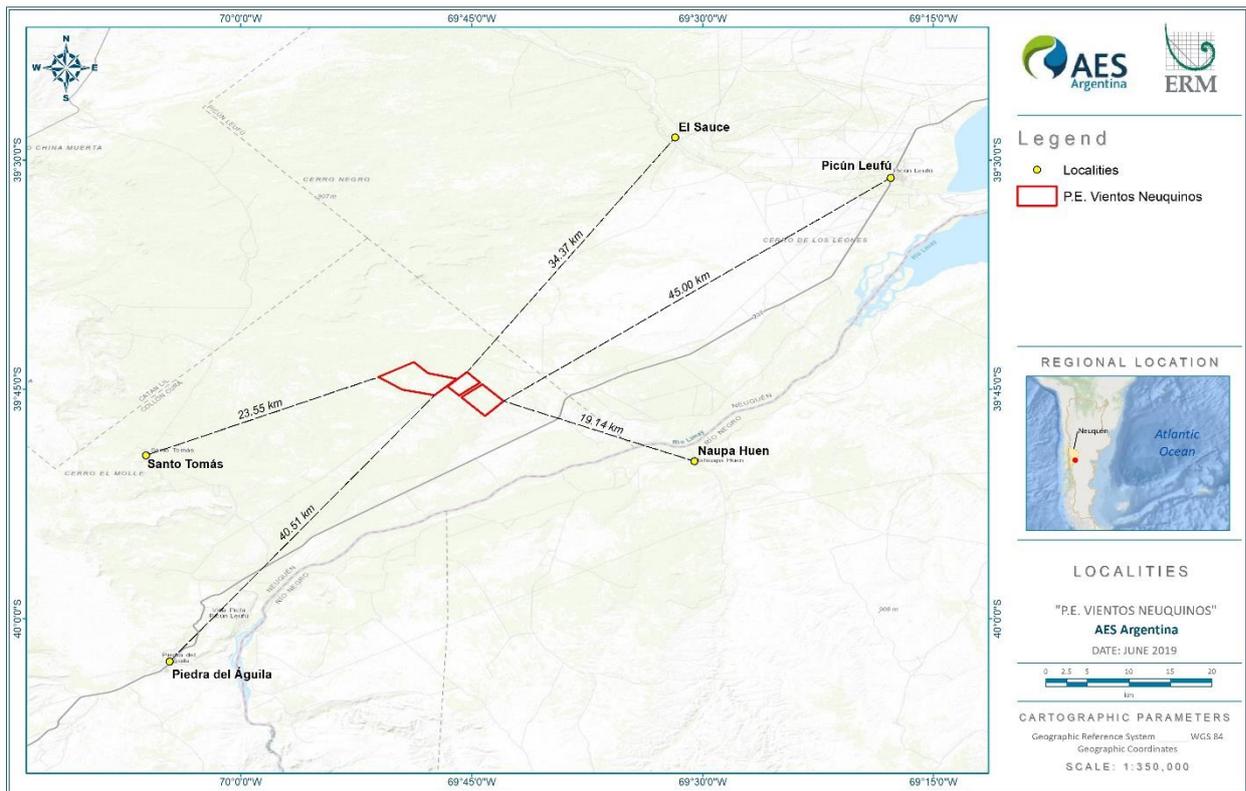


Source: ERM, 2019

Another of the elements that were taken into account to define Aol were the localities closest to the Project, which could potentially be directly and indirectly impacted. These locations are five; Piedra del Águila, Santo Tomás, Picún Leufú, El Sauce and Naupa Huen, and are shown in the following map:

Vientos Neuquinos I Wind Farm Project (Neuquén, Argentina)

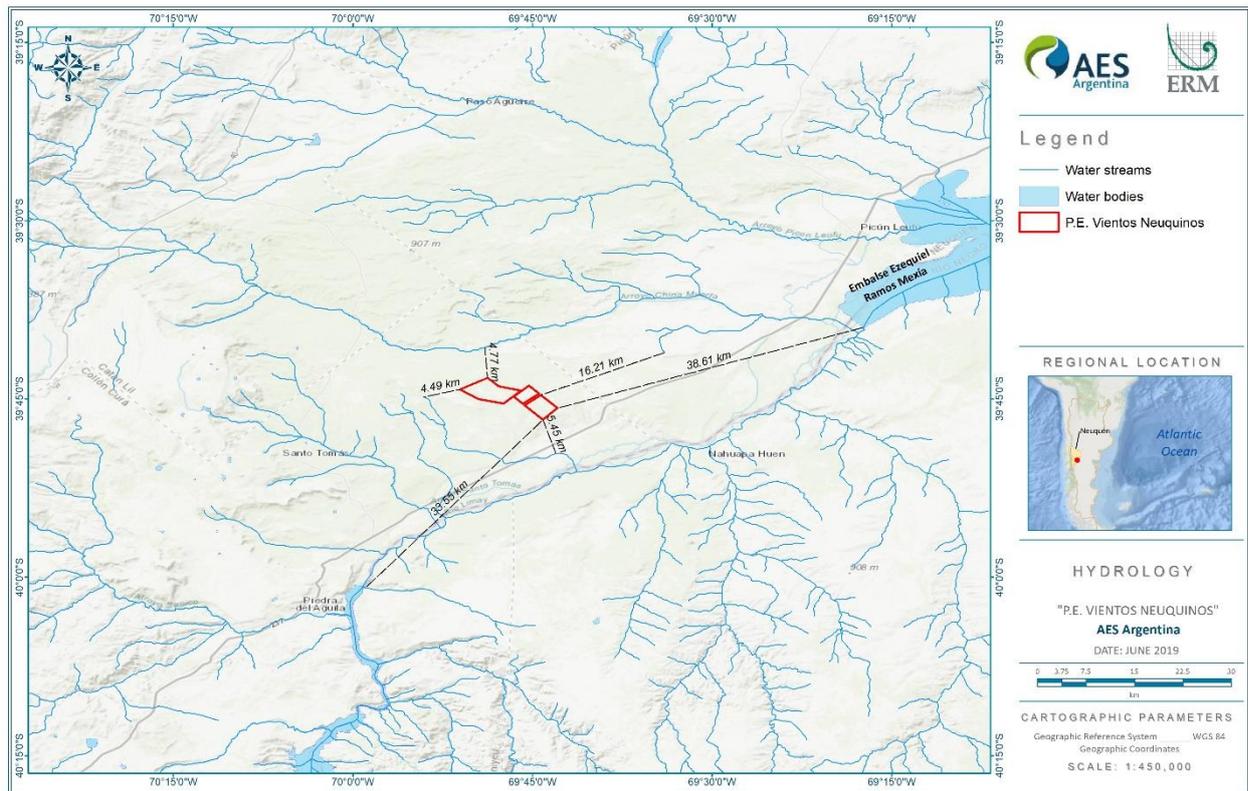
Figure 4-2: Localities near de Project



Source: ERM, 2019

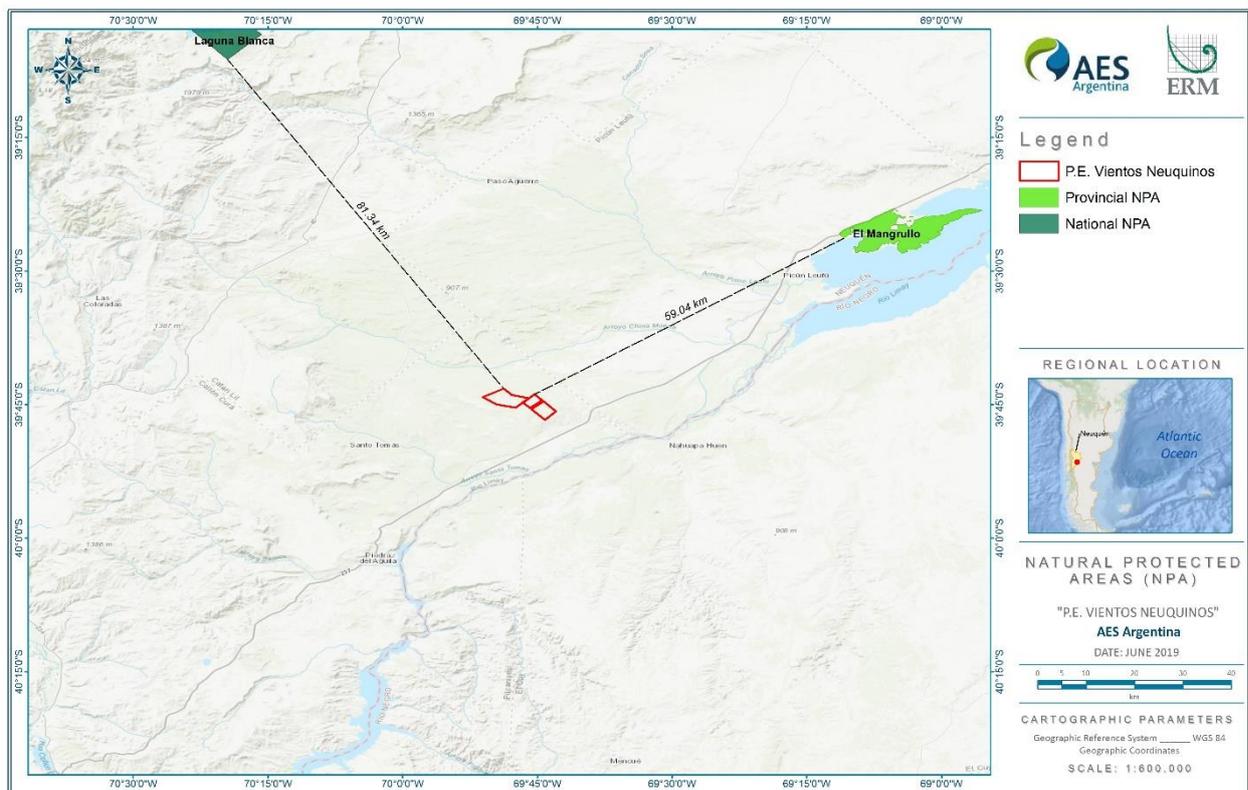
Furthermore, the following two maps shows key hydrographic features and natural protected areas near the Project:

Figure 4-3: Map of the Hydrology near to the Project



Source: ERM, 2019

Figure 4-4 Map of the Protected Natural Areas near to the Project



Source: ERM, 2019

It is good practice to keep the Aol to a reasonable distance so the potential impact assessed can be attributed to the Project rather than being affected by influences outside of the Project. The Aol for a particular resource/ receptor may also vary depending on the nature of the change caused by the Project activities and the type of effect being considered, but in each case, it is defined to include all the area within which significant impacts may result.

Two methodological criteria are used to define the Aol of the Project, as shown in the following Table.

Table 4-1 Methodological criteria used to define the Aol

Criteria	Description
Geospatial	To determine the Area of Influence, the Project area and its facilities were located and a buffer was generated, from the perimeter of the Project and the temporary camp facilities.
Socioeconomic and sociocultural	To determine the locations of the Area of Influence the contiguous physical space in which socio-economic and socio-cultural elements were located that could be impacted by the works and activities that will be carried out during the different stages of the Project. Criteria of tenure and use of land in the municipality were also taken into account.

Source: ERM, 2019

The Project's Aol has been identified in two different categories; Direct Area of Influence and Indirect Area of Influence, according to the magnitude of potential impacts of the Project on the Stakeholders contained in each area.

4.1 Direct Area of Influence

The Direct Area of Influence of the Project consists in the physical space in which the Project's infrastructure is intended to be built and where the activities and processes could have potential impacts to the localities and the ecosystems surrounding.

This study area includes a buffer zone for social aspects that could be directly impacted, and a buffer zone for environmental aspects considering specific elements;

4.1.1 Environmental buffer

The buffer of the environmental aspects, was delimited based on:

- Hydrology, nearby bodies of water that could be directly impacted by Project operations
- Ecoregions in which the flora and fauna that may be impacted by the Project is identified
- Soils that could be directly affected during the construction of the Project

4.1.2 Social buffer

The buffer for social aspects was delimited considering the three localities surrounding the Project, which will be directly impacted by:

- The demand for hiring people from the localities for the construction and operation stages of the Project;
- The demand for services for personnel hired by the company to supply food, lodging, and basic services;
- The terrestrial communication routes that will be used for the mobility of the company personnel to move to the Project.

To define the Direct Aol of the Project it has been consider socio-economic, socio-cultural and environmental elements that are directly impacted by the works and activities carried out during the different stages of the Project, following this criteria:

Table 4-2 Identification and description of the elements of the Direct Aol

Element	Description
Project site	The Project is located to 7km to the north of Paraje ² Bajada Colorada, is 40.51km to the northeast of the locality of Piedra del Águila, 23.56km of Santo Tomas Development Commission, and 45km of Picún Leufú.
Associated facilities	<p>The project occupies an approximate area of 2,603 ha (area within overall Project boundary – in reality, most of this area is not used as it is composed of natural land between each of the 29 turbines and the access tracks).</p> <p>An Energy Transmission Line is located near the Transformation Station in the northern center of the Project Area</p>
Social Aspects	
Human settlements and/or localities	<p>The Study area is located in the Departments of Collón Curá and Picún Leufú, in the Neuquén Province, and consists of the Piedra del Águila, Picún Leufú, and Santo Tomás localities.</p> <ul style="list-style-type: none"> • Piedra del Águila to 40.51 km of distance • Santo Tomás to 23.56km of distance • Picún Leufú to 45.00km of distance
Territorial and / or administrative units	<p>The state and municipality in which the Project is inserted is the Departments of Collón Cura and Picún Leufú, in the Neuquén Province</p> <p>Piedra del Águila is considered a second category municipality because of the number of inhabitants it has, while Santo Tomás belongs to a Development Commission (DNCFP, 2019)</p>
Agrarian territories and private property	The current land use of the Project area is extensive cattle rearing and hydrocarbon activity
Individual and / or collective rights	<p>The lands where the Project is located are fiscal lands registered with a domain certificate in the name of the Neuquén Province</p> <p>There will be no damage of collective rights for the use of land</p> <p>The wind farm project is part of the Policy of the Government of the Province of Neuquén, called Wind Program, which through Decree No. 1837/09, permanently reserved, and for purposes of public utility, lots of tax property selected by ADI-NQN for the development of investment projects that will contemplate the generation, transport and distribution of electricity from wind power</p>

² Paraje: relatively small and remote area where few people live or lived.

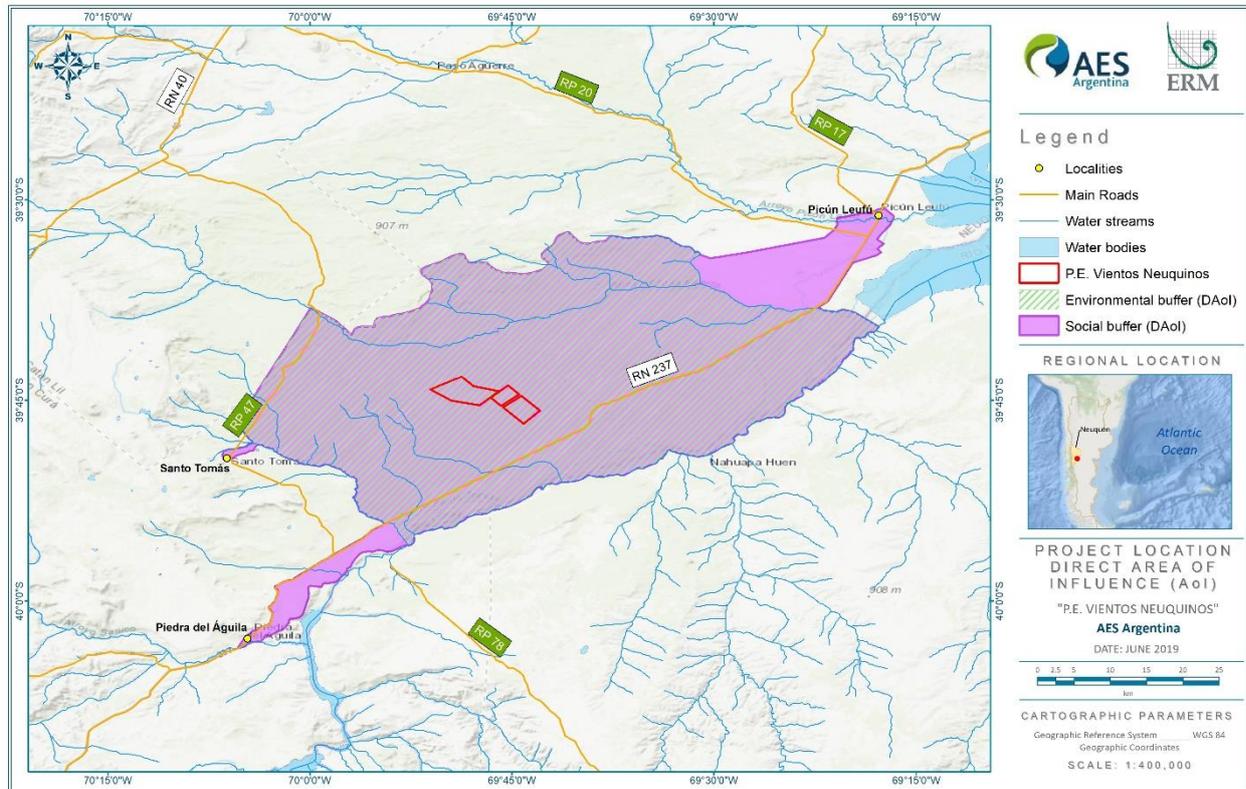
Element	Description
Tangible or intangible cultural heritage	N/A. There are no cultural heritage zones that are affected by the Project
Road traffic patterns	<p>The main route to access is RP N° 47. Departing from Piedra del Águila (located 225 km from the city of Neuquén) and traveling 16 km. For the RN No. 237 with northeaster direction, the intersection with the RP N ° 47 is accessed. From this site 6 km approximately course northwest until reaching the internal road through which the Project area is accessed. After 23km, you reach the sector of the project site. The access roads are bypass and present the regular traffic conditions in the transit of the area</p> <p>The presence of localities near the main access route to the field was not found</p>
Economic activity, goods and services	<p>The main activities in the study area are:</p> <ul style="list-style-type: none"> • Mine exploitation³ • Agriculture, Livestock and Fishing • Commerce, hotels and restaurants, transportation and communication, financial intermediation, and corporate and real estate services • Public administration, health, education, personal services <p>Piedra del Águila and Picún Leufú are the localities that will provide the greatest amount of services during the Construction Stage.</p>
Environmental Aspects	
Hydrology	In the surroundings of the Project, there are waterbodies as well as intermittent and perennial water currents and that are arise from the Exequiel Ramos Mejía Reservoir, sites where important records of avifauna have been reported. The hydrology was considered for the delimitation of the Aol in the North, South and East zones.
Ecoregions	The projects is located in the Argentine Low Monte Region, which is characterized for the presence of a scrub steppe from 1 to 3 m high, with predominance of jarillas (<i>Larrea</i> spp.). Outside the Project area is located the ecoregion called Estepa Patagónica, which was considered as the limit to the West for the elaboration of the Aol
Soils	The soils in the Project area are represented for Aridisols, which are soils that occur in areas under arid climates with very low rainfall regimes with low organic matter. The soils was considered for the partial delimitation of the area of Influence in the North of such area.

³ The classification of economic activities according to the International Standard Industrial Classification (ISIC) includes: the exploitation of crude oil and natural gas and related activities, the extraction of metalliferous minerals and the exploitation of mines and quarries.

Source: ERM, 2019

The following map shows the Direct Aol of the Project, which includes the buffer of the social aspects and the buffer of environmental aspects mentioned above:

Figure 4-5: Map of the Direct Area of Influence



Source: ERM, 2019

* The information presented on the map has official data from. National Census of Population prepared by the INDEC in 2010.

4.2 Indirect Area of Influence

According to the IFC methodology, the Indirect Area of Influence is the space adjacent to the Direct Area of Influence in which the socio-economic and socio-cultural elements that could be indirectly impacted by the works and activities carried out during the different stages are located of the project.

To delimit the Indirect Aol of the Project, a combination of social, administrative, fiscal and economic criteria was used, such as:

- The population in a situation of vulnerability of the localities that could be indirectly impacted by the activities of the Project.
- The capital of the District of Neuquén were considered since they are the localities where most of the necessary procedures for the different stages of the Project will be carried out.
- Localities that represent economic centers and which can provide services and products for the operations of the Project, or, for the amount of population, localities where potential workers live for the Project

To define the Indirect Aol of the Project, the following criteria was taken into consideration:

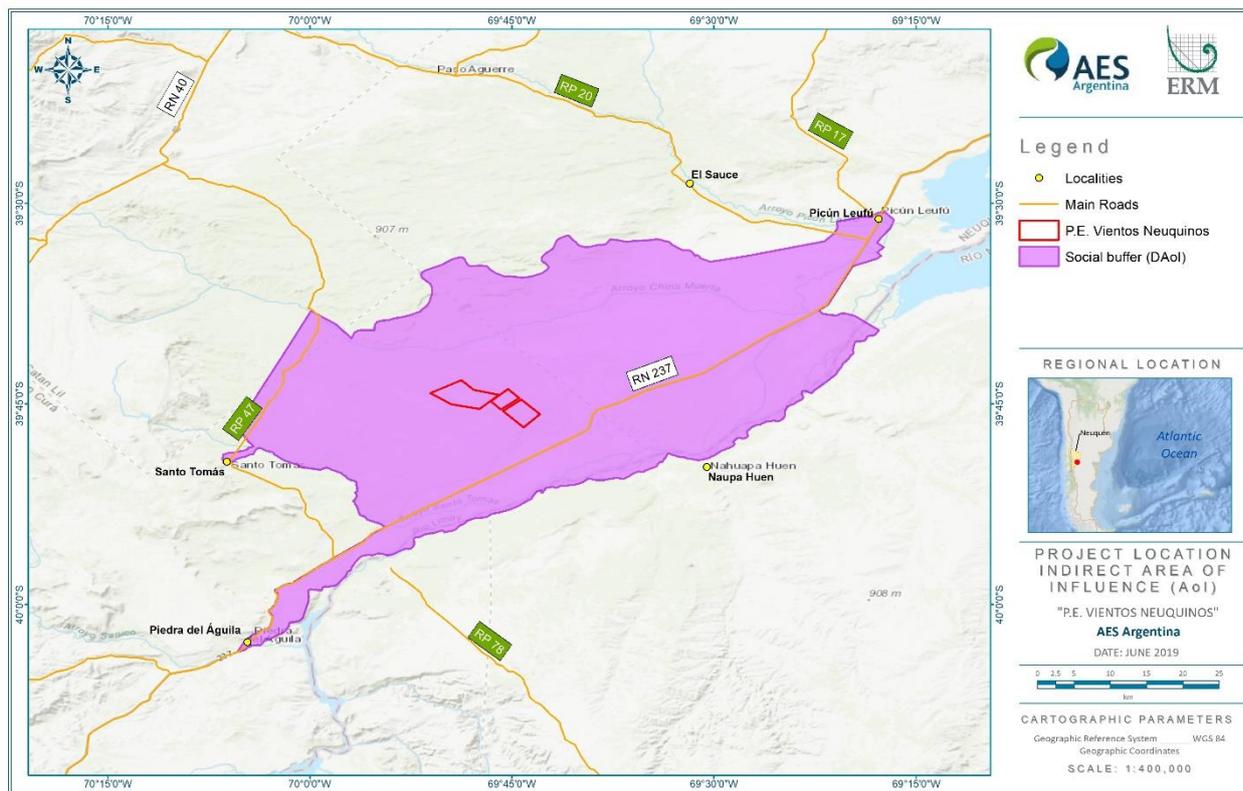
Table 4-3 Identification and description of the elements of the Indirect Aol

Element	Description
Social Aspects	
Human settlements and/or localities	The localities in the surroundings of the Project that could be affected indirectly are: <ul style="list-style-type: none"> • El Sauce to 34.48km of distance • Naupa Huen, in the Rio Negro Province, District to 19.14km of distance
Territorial and / or administrative units	The localities that could within the study area will not be affected in their cultural manifestations, however, according to the PSI of the IFC, it will be considered as the vulnerable group closest to the Project area.
Agrarian territories and private property	The current land use of the Project area is extensive cattle rearing and hydrocarbon activity.
Affectation to individual and / or collective rights	There will be no damage of collective rights for the use of land
Tangible or intangible cultural heritage	N/A. There are no cultural heritage zones that are affected by the Project
Road traffic patterns	The town of El Sauce is located near RP N°20, however, it will not have direct impacts on the access route to the Project.
Economic activity, goods and services	Its economy is based mainly on extractive activity. It is developed in relation to the oil, gas and, to a lesser extent, mining activity, while agriculture, livestock, fisheries and afforestation have a relatively high relative share little.
Environmental Aspects	
Environmental and landscape scenario	There are no environmental aspects that are affected by the Project in the study area

Source: ERM, 2019

In the map presented below, the Project Indirect Aol is shown in color purple:

Figure 4-6: Map of the Indirect Area of Influence



Source: ERM, 2019

* The information presented on the map has official data from National Census of Population prepared by the INDEC in 2010.

4.2.1 References

DNCFP, D. N. (2019, June). MECON. Retrieved from DNCFP Municipal:
<http://www2.mecon.gov.ar/hacienda/dncfp/municipal/caracterizacion/exportar2.php?provincia=q>

INDEC, (2010) National Census of Population, Households and Housing 2010.
<https://www.indec.gob.ar>

5 BASELINES

To supplement the original EIA we performed a biodiversity assessment, both in baseline description as well as in terms of habitat analysis using the IFC PS 6 requirements.

The following sections aims to complement the EIA in terms of the habitat analysis using the IFC PS 6 requirements. This assessment is based on a literature review. This process has completed the first two steps of critical habitat determination, as specified in paragraphs GN53 and GN60 of the IFC's Guidance Note 6⁴. Therefore, the scope of this assessment is limited to Step 3: Critical Habitat Determination, as defined in paragraphs GN63 to GN69.

⁴ IFC, 2019. Guidance Note 6. Biodiversity Conservation and Sustainable Management of Living Natural Resources.

5.1 Biodiversity

5.1.1 Introduction

Wind energy is considered a viable and clean alternative to fossil fuels; low operating cost and extensive availability make wind one of the most advantageous and effective renewable energy sources (Kumar et al., 2016). The advantages of this technology include an unlimited, free, renewable resource, economic value, maintenance cost, and placement of wind harvesting facilities. Unlike other power plants, it emits no air pollutants or greenhouse gases. This technology has disadvantages and may be dangerous to flying animals like birds and bats due to collision with wind turbines (Lloyd, 2014).

The Project is located in the Neuquén Province, particularly in the Department of Collón Curá, approximately 7 km north of Paraje⁵ Bajada Colorada, 38.5 km northeast of Piedra del Águila town, 49 km southwest of Picún Leufú town and 75 km southwest of the Exequiel Ramos Mexía reservoir.

The area of interest is located on an area with plains and slight changes in topography and with altitudes between 550 and 650 meters above sea level.

Within the boundaries of the Project area there are no permanent water bodies and/or important runoffs, there are only runoffs in the external sectors of the Project area, the closest is at 4.49 km distance (Figure 5-1). However, at 9 km distance approximately, is the Limay River, which is an important habitat for several bird species.

The Project area is located in the eco-region called Argentine Low Monte (*Monte de Llanuras y Mesetas*) (Figure 5-2). This eco-region extends to the east of the Andes Mountains, from the Province of Mendoza, along Neuquén and the Pampa, to the Atlantic coast of Río Negro and the northeast of Chubut (PRODIA, 1999). Its vegetal physiognomy is characterized by a scrub steppe from 1 to 3 m high, sometimes very covered, characterized by the presence of jarillas (*Larrea* genus). Jarillas predominates in the plateaus as well as in the slopes of the fluvial terraces and in the low plains. As for fauna, it is rich in species of mammals with adaptations for excavation and subterranean habits (PRODIA, 1999).

The vegetation has xerophytic characteristics: plants with small leaves, reduced to thorns or absent, photosynthesizing stems, foliar and stem cover waxy or resinous, thickened cuticles, brief annual cycle and succulent aerial and subterranean organs. The dominant and constant vegetation type is the steppe of xerophytic shrubs of perennial foliage and resinous, belonging mostly to the Zygophyllaceae family, represented especially by the genus *Larrea divaricata* (*Larrea divaricata*, *L. cuneifolia*, *L. nitida* and *L. ameghinoi*), with height between 1.5 and 2.5 m, with scarcity of grasses and trees (Morello, 1958; Roig, & Corbalán, 2009).

⁵ Paraje: relatively small and remote area where few people live or lived.

Figure 5-2 Ecological Regions in the Project Area.

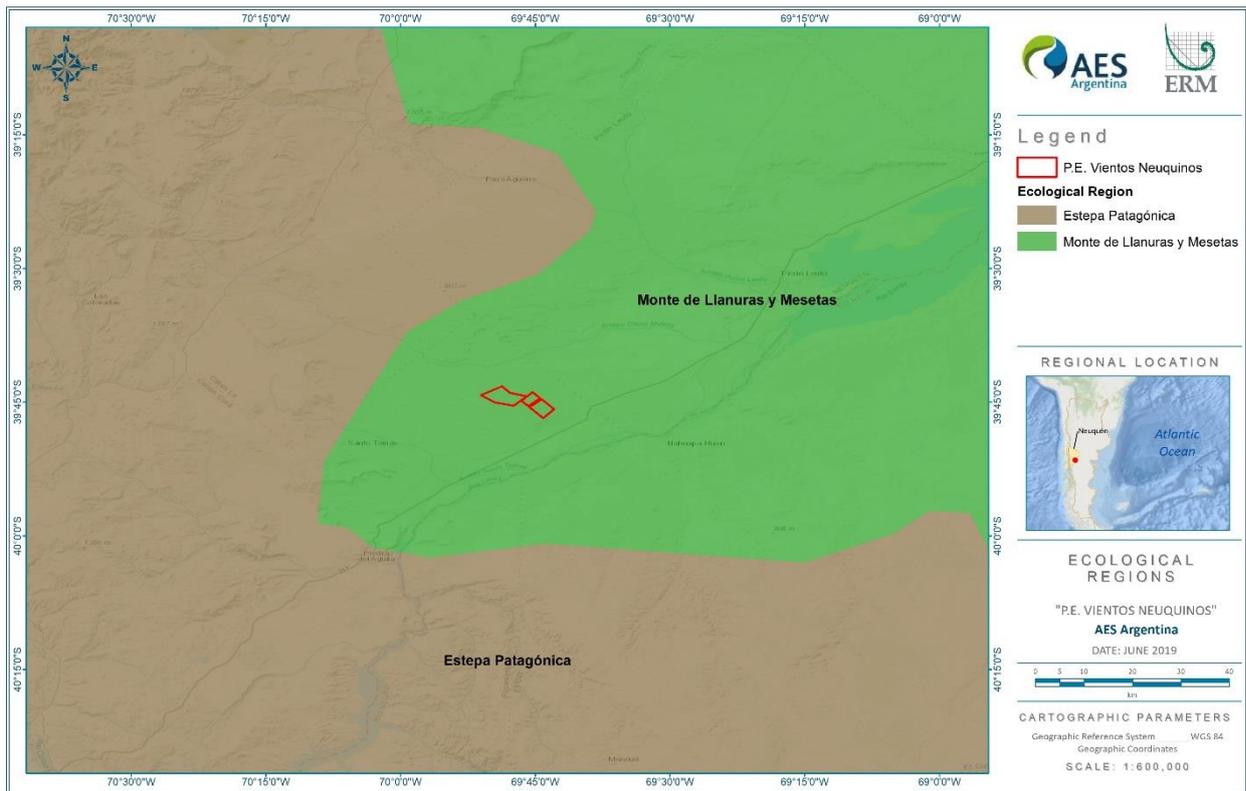
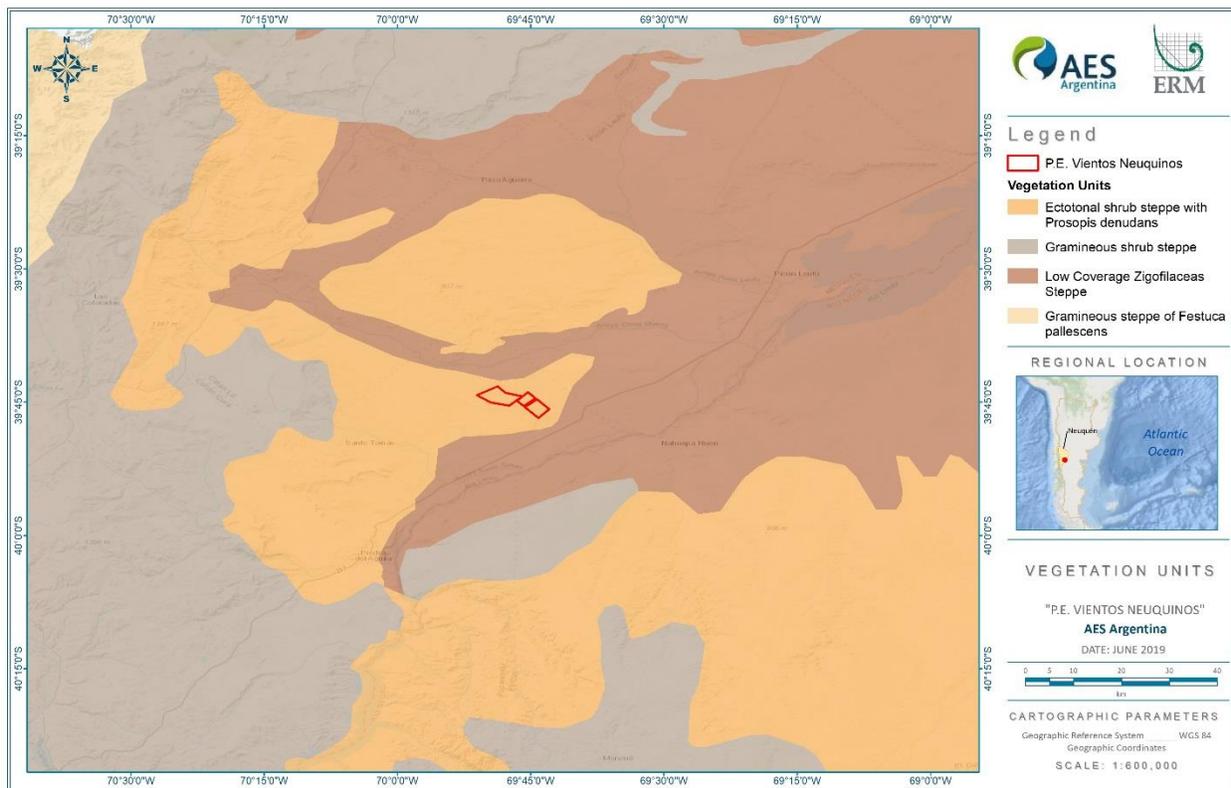


Figure 5-3. Vegetation Assemblages in the Project Area



From the zoogeographical point of view, the area of study is within the Andean-Patagonian domain (Morrone & Llorente-Bousquets, 2003). The species reflect the conditions of the environment, showing adaptability to rigorous conditions, such as scarcity of water and vegetation, or the hardships of the cold autumn-winter.

As mention before, there is no permanent water bodies in the surroundings of the Project area, however. Limay River has to be taken into consideration, as it is an important refuge for migratory birds and habitat of many species

5.1.2 Methodology

The approach to data collection and the establishment of the habitat status followed the recommendations from IFC Guidance Note 6 Paragraph 66 (2019) (6) and the broad approach set out in the CBI Good Practices for Collection of Biodiversity Baseline Data (7). This comprised a **desk study** drawing on information from relevant authorities, academic/scientific institutions, and other recognized external sources of information to collate known information about biodiversity features and their value.

The study was performed in three phases, which consisted in:

1. *Data collection*: an extensive bibliographic research was carried to collect information regarding bird, mammal, amphibian and reptile occurrences in the Neuquén Province. Initial screening was performed using the Integrated Biodiversity Assessment Tool (IBAT⁸) to obtain a list of all the species occurrences in IUCN within a 50 km buffer from the projects' areas. Additionally, a selection of articles and literature containing the species' common names, their distribution and/or their occurrences and information about their habitat was employed (^{9, 10, 11}). Literature with detailed information of the provinces fauna or the projects' area of influence were pondered before literature with information of smaller specific areas nearby or within the province (e.g. Fauna of specific natural areas).
2. *Elaboration of the primary species list*: information collected from IBAT, selected literature and the species lists published in the EIA, were compared and fused into one unique list. To avoid an overestimation of the area's species richness, we made a species-by-species revision consulting GBIF¹², IUCN¹³, Catalog of Life¹⁴ and the Argentinian Biodiversity Information System¹⁵ to eliminate repeated species because of scientific name synonyms. We also used these sources to update taxonomic and classification changes occurred since the publication date. When taxonomic variations existed between databases, we used IUCN's classification. When a species was not included in the IUCN, we used the GBIF or the Catalog of Life accepted classification. Subspecies found in the list were changed for the corresponding species name.
3. *Potentially distributed species list elaboration*: After the elaboration of the primary list that included all species found in selected literature, IBAT and the Project EIA, we analyzed every species' probable

(6) IFC. (2019). Guidance Note 6. Biodiversity Conservation and Sustainable Management of Natural Resources. Recovered from https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards/ps6

(7) Gullison, R.E., Hardner, J., Anstee, S. & Meyer, M. (2015) Good Practices for the Collection of Biodiversity Baseline Data. Prepared for the Multilateral Financing Institutions Biodiversity Working Group & Cross-Sector Biodiversity Initiative

⁸ IBAT - WORLD BANK GROUP BIODIVERSITY RISK SCREEN Report, 2019. Generated under licence number 1071-2304 held by Environmental Resources Management from the Integrated Biodiversity Assessment Tool on 30/05/2019. <http://www.ibat-alliance.org>

⁹ Veiga, J.O., F.C. Filiberto, M.P. Babarskas y C. Savigny. 2005. Aves de la Provincia de Neuquen. Patagonia Argentina. Lista Comentada y Distribución. RyC.

¹⁰ Cintia. M., Mariana, M., Ignacio, M., Breitman, F.M., y Avila. L.J. 2012. Lagartijas de la Provincia de Neuquén (Argentina): estado de conservación, diversidad genética y mapas de distribución geográfica. Technical Report.

¹¹ Bonino. N. 2005. Guía de Mamíferos de la Patagonia Argentina. Instituto Nacional de Tecnología Agropecuaria.

¹² GBIF: Global Biodiversity information Facility <https://www.gbif.org> this platform was used to consult scientific names, synonyms, classification and taxonomic changes for species that were not included in the IUCN databases, and species distribution.

¹³ IUCN: International Union for Conservation of Nature <https://www.iucn.org/>. This data platform was used to consult scientific names, synonyms, classification and taxonomic changes, species' distribution, and conservation status.

¹⁴ Catalogue of Life: <https://www.catalogueoflife.org/>, this source was used to consult scientific names' synonyms.

¹⁵ Argentinian Biodiversity Information System <https://sib.gob.ar>

occurrence in the projects' areas consulting the occurrence and distribution in GBIF, IUCN and Inaturalist¹⁶, and the species' habitat information available from all sources previously mentioned. Species whose habitat and distribution did not match the project's area and habitat were removed from the list. For the purposes of this evaluation, and considering that the EIA does not specify the methods used to elaborate their species lists, the EIA was considered as the rest of the information sources and the same criteria were applied to the species reported in it.

4. *Identifying Argentina's priority species:* wind energy parks affect flying species such as birds and bats. Priority species of Argentinian birds and bats with a potential risk of being affected by the development of wind energy in the country were identified in a workshop (Palmer et al, 2017). We compared the species of birds and bats with potential distribution in the project with the workshop's list to identify priority species.

A potential collision risk status could not be determined for the potentially present flying fauna in the project area and its surroundings. This latter risk category must be studied with the data obtained from the subsequent field surveys.

5.1.3 Criteria used to select vulnerable species

For the present document, the following IUCN criteria were used:

Data Deficient:

A taxon is Data Deficient (DD) when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking.

Least Concern:

A taxon is Least Concern (LC) when it has been evaluated against the Red List criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened.

Near Threatened:

A taxon is Near Threatened (NT) when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

Vulnerable (VU):

A taxon is Vulnerable (VU) when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable, and it is therefore considered to be facing a high risk of extinction in the wild.

Endangered (EN):

A taxon is Endangered (EN) when the best available evidence indicates that it meets any of the criteria A to E for Endangered, and it is therefore considered to be facing a very high risk of extinction in the wild.

Critically Endangered (CR): A taxon is Critically Endangered (CR) when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered, and it is therefore considered to be facing an extremely high risk of extinction in the wild.

Extinct In the Wild (EW)

¹⁶ Inaturalist <https://www.inaturalist.org/>, this source was used to corroborate species distribution, alongside GBIF and IUCN.

Vientos Neuquinos I Wind Farm Project (Neuquén, Argentina)

A taxon is Extinct in the Wild (EW) when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), and throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

Extinct (EX)

A taxon is Extinct (EX) when there is no reasonable doubt that the last individual has died. A taxon is presumed extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), and throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

5.1.4 Results

5.1.4.1 Important Bird Areas

As can be noted in Table 5-1, the Project is not in any Important Bird Area (IBA). The nearest IBA to the Project are:

- Área Natural Protegida el Mangrullo
- Parque Nacional Laguna Blanca
- Valle del Río Collón Curá

Table 5-1 Important Bird Areas near to the Project

Important Bird Area	Characteristics	Distance to the Project
Área Natural Protegida el Mangrullo	<p>The place offers a flat and typical relief of impoverished transition shrub steppe, becoming the area that shelters the southernmost sample of the western portion of the ecoregion of the Mountains (<i>Monte</i>).</p> <p>As for the birds, 102 species has been registered, the majority of which were aquatic birds. The most prominent bird is the Chilean flamingo (<i>Phoenicopterus chilensis</i>).</p>	57.77 km to the northeast
Parque Nacional Laguna Blanca	<p>Important concentrations of aquatic and migratory birds with special interest of the Chilean flamingo (<i>Phoenicopterus chilensis</i>) and the Black-necked Swan (<i>Cygnus melencoryphus</i>) that nest in the area, although in recent years there has been a decline in these populations, due to a change in the vegetation of the lagoon mainly linked to the introduction of <i>Percichthys</i> spp. In the shrub steppes the lesser rhea (<i>Rhea pennata</i>), the white-throated Cachalote (<i>Pseudoseisura gutturalis</i>), the band-tailed Earthcreeper (<i>Ochetorhynchus phoenicurus</i>) and the rusty-backed Monjita (<i>Xolmis rubetra</i>) nest among others.</p>	80.52 km to the northwest
Valle del Río Collón Curá	<p>The area is an important aquatic bird's reservoir, and has one of the few records for the province of the South American Painted-snipe (<i>Nycticryphes semicollaris</i>). Adult and juvenile populations of the Chilean flamingo (<i>Phoenicopterus chilensis</i>) and the increasingly scarce flying steamer duck (<i>Tachyeres patachonicus</i>) have been found in this BIA. There are several species of ducks, the most striking being the cinnamon teal (<i>Spatula cyanoptera</i>), the rosy-billed Pochard (<i>Netta peposaca</i>) and the scarce spectacled duck (<i>Specularnas specularis</i>).</p>	86.83 km to the southwest

Source: ERM (2019) with information provided by Di Giacomo *et al* (2007)

5.1.4.2 Natural Protected Areas

As can be noted in Figure 5-4, the Project is not in any Natural Protected Areas (NPA). The nearest NPA to the Project are:

- Provincial NPA El Mangrullo
- National NPA Laguna Blanca

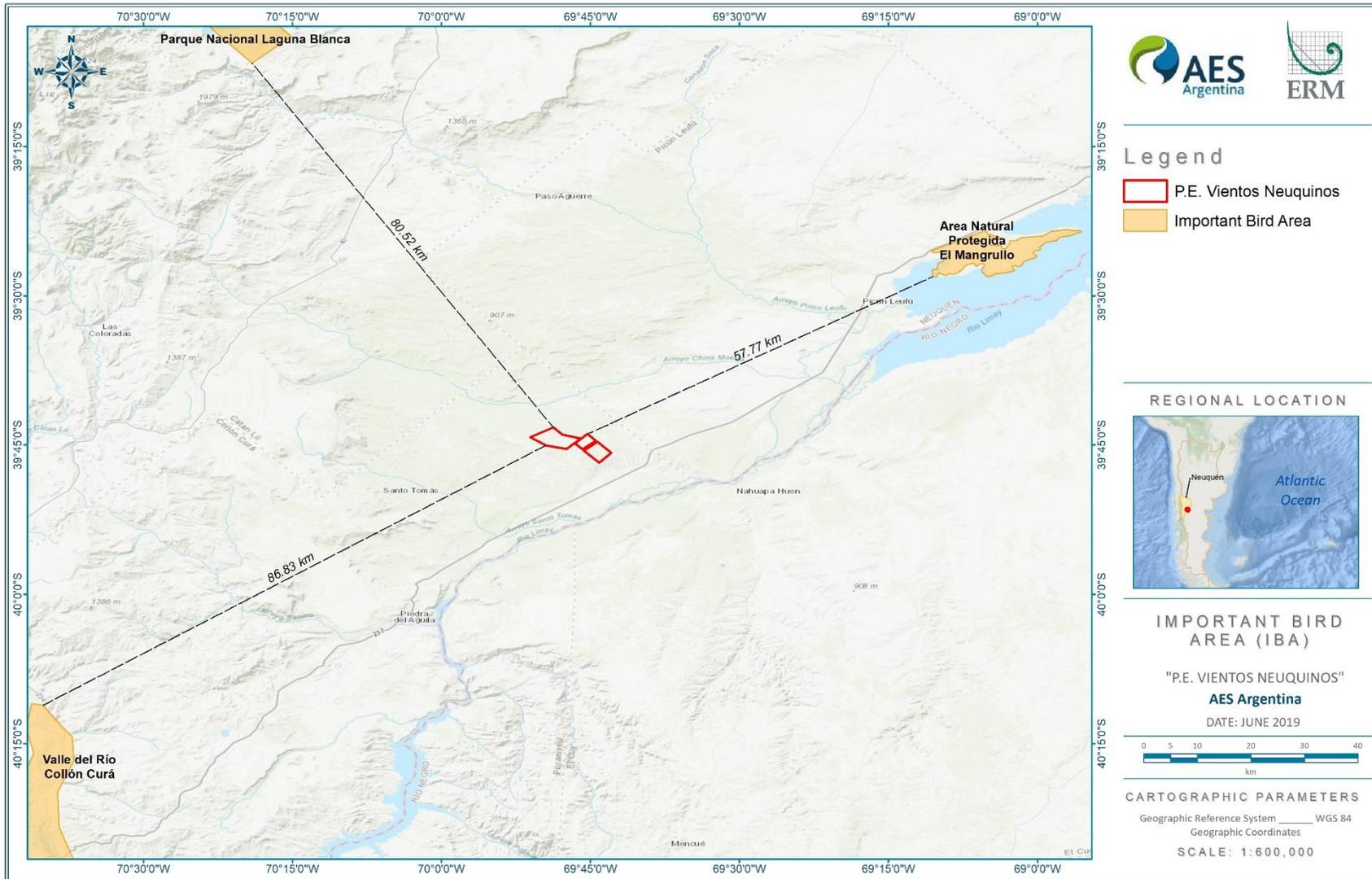
See Table 5-2 for more details.

Table 5-2 Natural Protected Areas near to the Project

Natural Protected Areas	Characteristics	Distance to the Project
El Mangrullo	<p>The vegetation corresponds to a Phytogeographical Province called Mountain (<i>Monte</i>) characterized by being a medium-high shrub steppe with the jarilla and the zampa as predominant species.</p> <p>The fauna of the protected area is very rich, although some of its members are difficult to observe. Among the most conspicuous are the birds, cormorants, black herons, ducks, ducks, black-necked swans, and cauquens, among others. This NPA has a surface of 9.24 hectares.</p>	59.04 km to the northeast
Laguna Blanca	Laguna Blanca National Park is located near Zapala, in the province of Neuquén. It has an area of 11,250 hectares belonging to the Patagonian Steppe eco-region.	81.34 km to the northwest

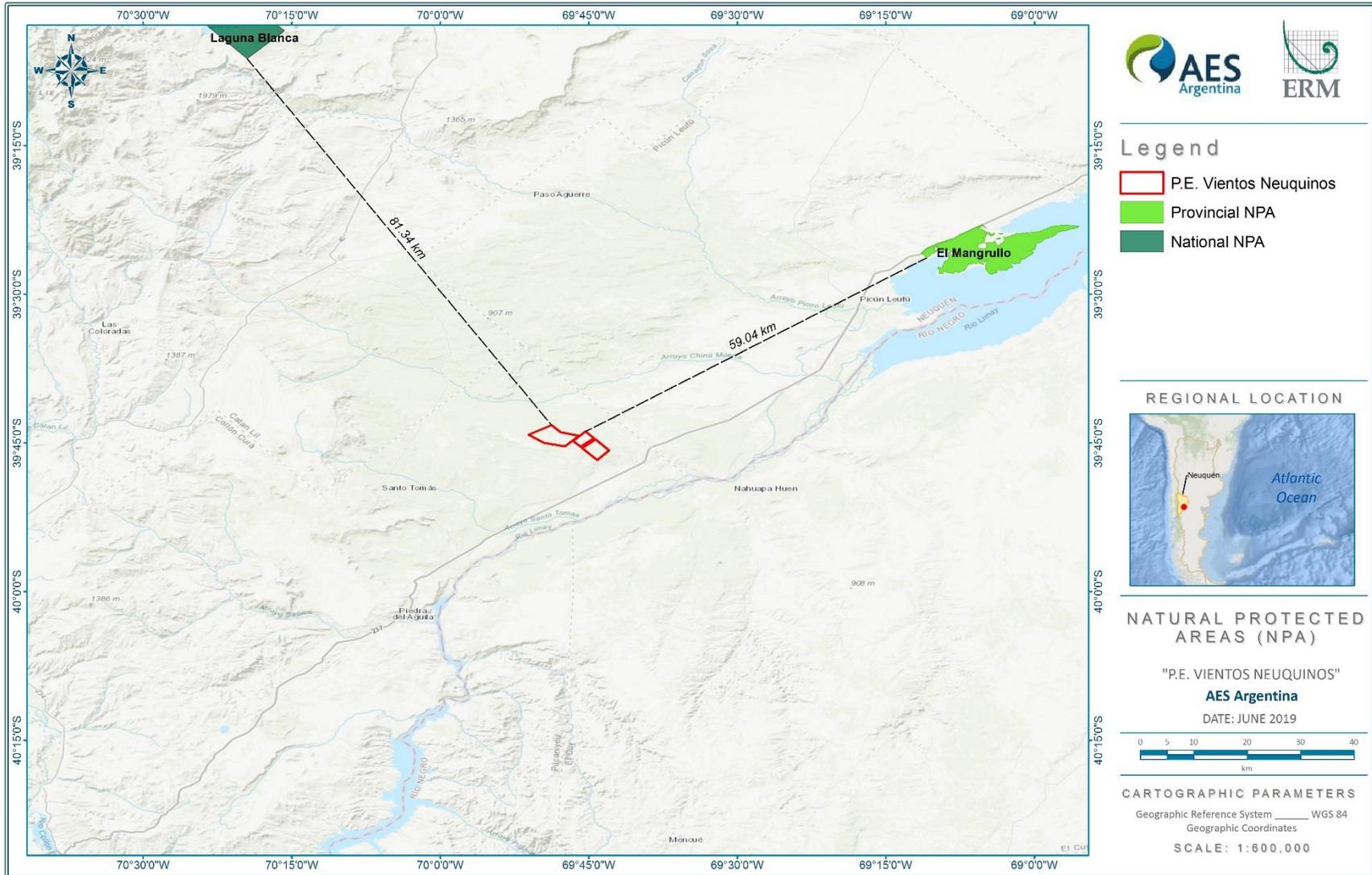
Source: ERM (2019) with information provided by Gobierno de la Provincia de Neuquén (2013) & Parques Nacionales de Argentina (2018)

Figure 5-4 Project location with respect to Important Bird Areas



Source: ERM (2019) with information provided by Aves Argentinas.

Figure 5-5 Project Location with respect to Natural Protected Areas



Source: ERM (2019) with information provided by Gobierno de la Provincia de Neuquén (2013) & Parques Nacionales de Argentina (2018)

5.1.5 Potentially distributed species

Vegetation

The vegetation corresponds to the fitogeographic province of Del Monte. The prevailing physiognomy of this region is of a medium shrub steppe with an average vegetation cover of 20 to 40%. The jarillal predominates both in the plateaus and in the slopes of the river terraces and in the low plains.

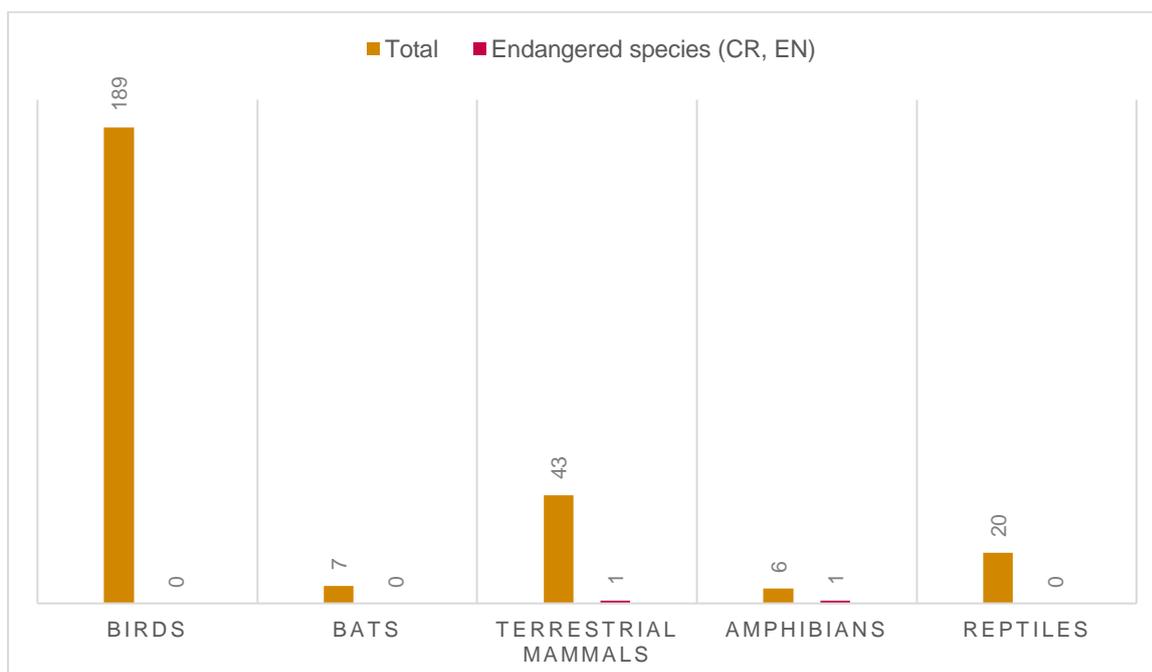
In the Environmental Impact Study approved, 26 species with potential occurrence within the project area are listed. None of them are included in IUCN Redlist but, one species “Matasebo” (*Monttea aphylla*) is an endemic species¹⁷.

A local resident informed of the presence of Yaqui (*Discaria articulata*), and pointed that it is an endemic species, however, bibliographical review indicates that this species has a wide distribution that includes Argentina and Chile, and also is not listed in the IUCN Redlist or the Red Book of threatened plant species of Argentina.

Fauna

There are 265 potentially distributed species of vertebrates for Vientos Neuquinos Project. From which a total of 189 bird’s species, 7 species of bats, 43 land mammals, 6 amphibians and 20 reptiles (Figure 5-6). From 265 species, only 2 species are enlisted as Endangered or Critically Endangered in the IUCN Red List. The full list of resulting species is in Appendix C.

Figure 5-6. Potentially Distributed Species Chart.



5.1.5.1 Birds

A total of 189 potentially distributed species were identified for the area of study. The 189 listed species are grouped into 21 orders and 42 families. Passeriformes (passerines, and seed birds) is the most represented order with 92 species (49%), Anseriformes (ducks and geese) was the second most

¹⁷ Lista Roja Preliminar de las Plantas Endémicas de la Argentina. Disponible en:
<https://www.argentina.gob.ar/normativa/nacional/resoluci%C3%B3n-84-2010-165374/texto>

represented order with 18 species (10%), and Charadriiformes (sandpipers, plovers, gulls) was the thirds with 16 species (8%). The rest of the 18 orders had 7% or less of representation.

From the 189 potentially distributed bird species, only 5 species are listed in some risk category in the IUCN Redlist, these species are presented in the next table alongside its source reference (Table 5-3). None of the Bird species are considered Endangered or Critically Endangered, only Near Threatened and their category implies that if their populations continue declining, they are expected to go endangered eventually.

Figure 5-7. Pie chart of Bird species by Order.

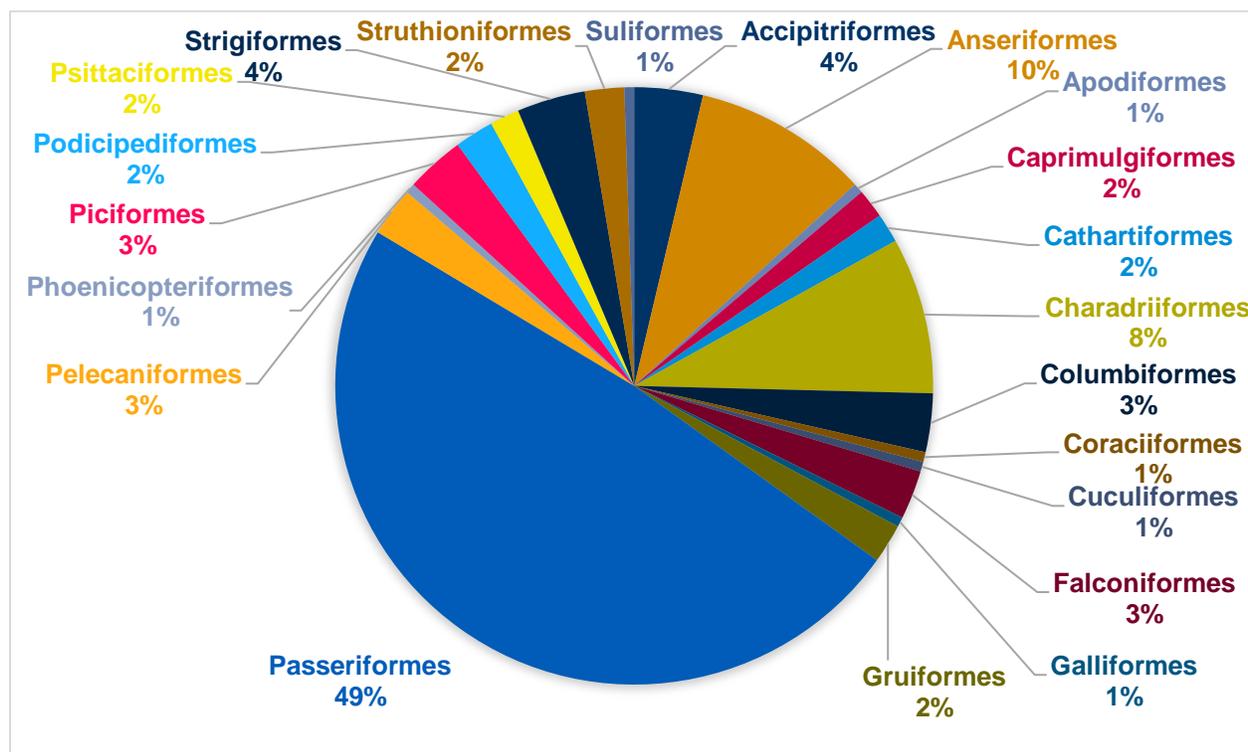


Table 5-3 potentially distributed bird species with a risk status in the IUCN Red List

FAMILY	SPECIES	ENGLISH NAME	IUCN REDLIST STATUS	REFERENCE	
				IBAT	Veiga et al (2005) ¹⁸
Anatidae	<i>Specularnas specularis</i>	Spectacled duck	NT	X	X
Cathartidae	<i>Vultur gryphus</i>	Andean condor	NT	X	X
Furnariidae	<i>Spartonoica maluroides</i>	Bay-capped wren-spinetail	NT	X	
Phoenicopteridae	<i>Phoenicopus chilensis</i>	Chilean flamingo	NT	X	X
Rheidae	<i>Rhea americana</i>	Greater Rhea	NT		X

The level of risk according to the IUCN Redlist (2019): LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = critically endangered, and DD= Data Deficient.

¹⁸ Veiga, J.O., F.C. Filiberto, M.P. Babarskas y C. Savigny. 2005. Aves de la Provincia de Neuquen. Patagonia Argentina. Lista Comentada y Distribución. RyC.

There are eight bird species with potential distribution within the project with a potential risk caused by the development of wind energy in the country (Table 5-4); one of them is classified with a high priority by the author. This species is *Vultur gryphus* and is classified as NT by the IUCN Redlist.

Table 5-4 Argentina’s bird priority species with probable occurrence in the project.

SPECIES	COMMON NAME	CLASSIFICATION IN ARGENTINA	IUCN REDLIST STATUS	PRIORITY
<i>Rhea americana</i>	Greater Rhea	A	NT	Medium
<i>Rhea pennata</i>	Lesser rhea	A	LC	Medium
<i>Chloephaga picta</i>	Upland goose	VU	LC	Medium
<i>Chloephaga poliocephala</i>	Ashy-headed goose	A	LC	Medium
<i>Phoenicopterus chilensis</i>	Chilean flamingo	LC	NT	Medium
<i>Vultur gryphus</i>	Andean condor	VU	NT	High
<i>Spartonoica maluroides</i>	Bay-capped wren-spinetail	VU	NT	Medium
<i>Knipolegus hudsoni</i>	Hudson's Black-tyrant	VU	LC	Medium

Classification in Argentina: A= Threatened, VU=Vulnerable, CR=critically endangered, EN=Endangered, LC=Least concern. The level of risk according to the IUCN Redlist (2019): LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = critically endangered, and DD= Data Deficient.

Source: ERM with data provided by Palmer, R., Gordon, C., & Petracci, P (2017). Interacciones entre la Fauna Silvestre y la Energía Eólica en Argentina: Conocimiento Científico y Prioridades para el Futuro.

5.1.5.2 Bats

A total of seven species of bats are potentially distributed within the area of study, grouped into three families and five genera. There are no bat species listed under a risk category in IUCN Redlist present in this area.

Table 5-5 potentially distributed bat species in the Project Area.

FAMILY	SPECIES	COMMON NAME	IUCN REDLIST STATUS	REFERENCE	
				IBAT	Bonino, 2005 ¹⁹
Molossidae	<i>Tadarida brasiliensis</i>	Murciélago Cola Suelta Brasileño	LC	X	X
Vespertilionidae	<i>Histiotus macrotus</i>	Big-eared Brown Bat	LC		X
Vespertilionidae	<i>Histiotus magellanicus</i>	Southern Big-eared Brown Bat	LC		X
Vespertilionidae	<i>Histiotus montanus</i>	Small big-eared brown bat	LC	X	X

¹⁹ Bonino, N. 2005. Guía de Mamíferos de la Patagonia Argentina. Instituto Nacional de Tecnología Agropecuaria.

FAMILY	SPECIES	COMMON NAME	IUCN REDLIST STATUS	REFERENCE	
				IBAT	Bonino, 2005 ¹⁹
Vespertilionidae	<i>Lasiurus varius</i>	Cinnamon red bat	LC	X	X
Vespertilionidae	<i>Myotis chiloensis</i>	Chilean myotis	LC	X	X
Vespertilionidae	<i>Myotis dinellii</i>	Mouse-eared bat	LC	X	

The level of risk according to the IUCN Redlist (2019): LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = critically endangered, and DD= Data Deficient.

There are six bat species with potential distribution within the project with a potential risk caused by the development of wind energy in the country (Table 5-6). There are three species of bats classified with a high priority by the author. These species are *Histiotus magellanicus*, *Lasiurus varius* and *Myotis chiloensis*. All six species are classified as LC by the IUCN.

Table 5-6 Argentina's bat priority species with probable occurrence in the project.

SPECIES	COMMON NAME	CLASS ARGENTINA	IUCN	PRIORITY
<i>Tadarida brasiliensis</i>	Murciélago Cola Suelta Brasileño	LC	LC	Medium
<i>Histiotus magellanicus</i>	Southern Big-eared Brown Bat	DD	LC	High
<i>Histiotus montanus</i>	Small big-eared brown bat	LC	LC	Medium
<i>Lasiurus varius</i>	Cinnamon red bat	DD	LC	High
<i>Myotis chiloensis</i>	Chilean myotis	LC	LC	High
<i>Myotis dinellii</i>	Mouse-eared bat	LC	LC	Medium

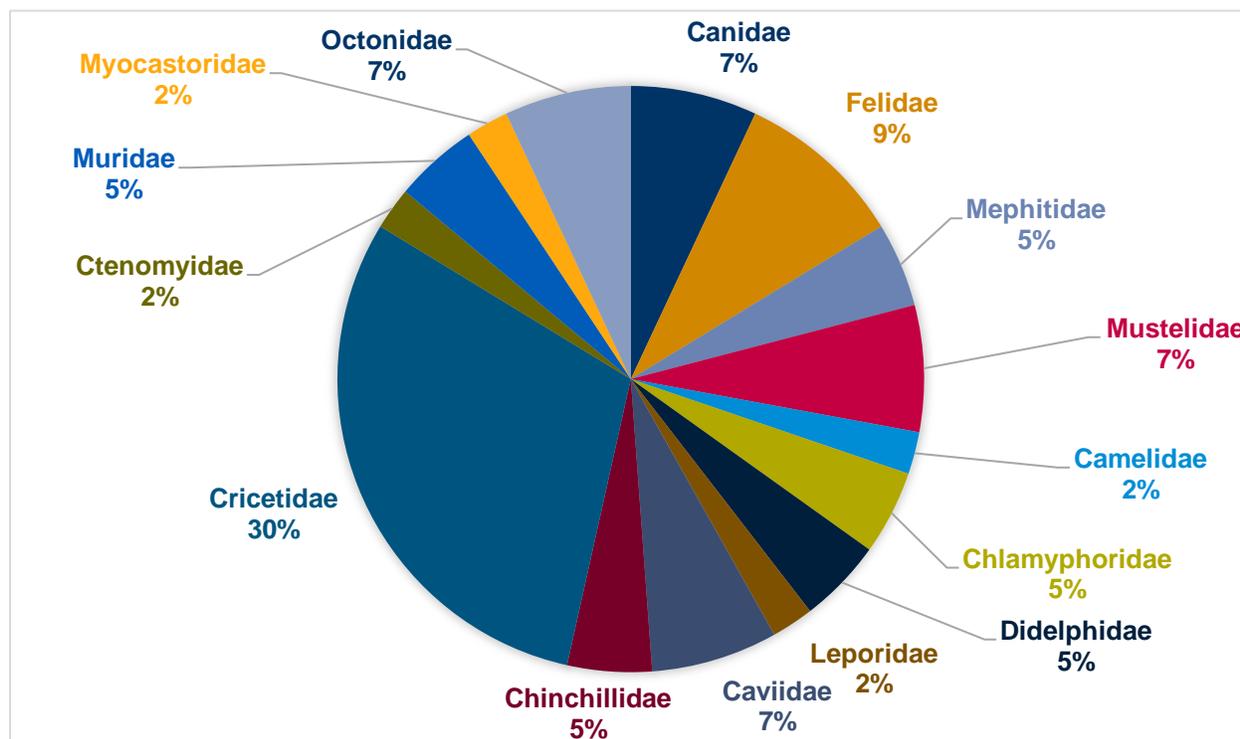
Classification in Argentina: A= Threatened, VU=Vulnerable, CR=critically endangered, EN=Endangered, LC= Least concern. The level of risk according to the IUCN Redlist (2019): LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = critically endangered, and DD= Data Deficient.

Source: ERM with data provided by Palmer, R., Gordon, C., & Petracci, P (2017). Interacciones entre la Fauna Silvestre y la Energía Eólica en Argentina: Conocimiento Científico y Prioridades para el Futuro.

5.1.5.3 Terrestrial Mammals

Within the Project area, a total of 43 potentially distributed species were identified. The 43 listed species are grouped into 6 orders and 15 families. Cricetidae (hamsters, voles, lemmings, and New World rats and mice) is the most represented Family with 13 species (30%), Felidae (cats) was the second most represented Family with 4 species (9%). The rest of the 13 families had 7% or less of representation (Figure 5-8).

Figure 5-8. Pie chart of terrestrial mammals species by Family.



From the 43 potentially distributed terrestrial mammals, only 5 species are listed in some risk category in the IUCN Redlist, these species are presented in the next table alongside its source reference (Table 5-7). Only one species, the Southern river otter (*Lontra provocax*) is listed as Endangered, the other species are also relevant (listed as NT), as their category implies that if their populations continue declining, they are expected to go threatened eventually.

Table 5-7 Potentially distributed terrestrial mammal species with a risk status in the IUCN Red List

FAMILY	SPECIES	ENGLISH NAME	IUCN REDLIST STATUS	REFERENCE	
				IBAT	Bonino, 2005 ²⁰
Felidae	<i>Leopardus colocolo</i>	Pampas cat	NT	X	X
Mustelidae	<i>Lontra provocax</i>	Southern river otter	EN	X	X
Chlamyphoridae	<i>Zaedyus pichiy</i>	Pichi	NT	X	
Caviidae	<i>Dolichotis patagonum</i>	Patagonian mara	NT	X	X

²⁰ Bonino, N. 2005. Guía de Mamíferos de la Patagonia Argentina. Instituto Nacional de Tecnología Agropecuaria.

FAMILY	SPECIES	ENGLISH NAME	IUCN REDLIST STATUS	REFERENCE	
				IBAT	Bonino, 2005 ²⁰
Octodontidae	<i>Tympanoctomys barrerae</i>	Plains Viscacha Rat	NT	X	X

The level of risk according to the IUCN Redlist (2019): LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = critically endangered, and DD= Data Deficient.

5.1.5.4 Reptiles and Amphibians

At least 6 species of amphibians and 20 species of reptiles are distributed within the Project area potentially present species of amphibians are distributed in one order (Anura) and 4 families (**Table 5-8**). With respect to their risk status within IUCN's Red List only one species, the Zapala frog (*Atelognathus praebasalticus*) is listed as Endangered.

Table 5-8 Potentially distributed amphibians species

FAMILY	SPECIES	ENGLISH NAME*	IUCN REDLIST STATUS	REFERENCE
				IBAT
Batrachylidae	<i>Atelognathus praebasalticus</i>	Zapala frog	EN	X
Bufoidea	<i>Rhinella arenarum</i>		LC	X
Bufoidea	<i>Rhinella spinulosa</i>	Warty toad	LC	X
Leptodactylidae	<i>Pleurodema bufoninum</i>		LC	X
Leptodactylidae	<i>Pleurodema nebulosum</i>	Mendoza four-eyed frog	LC	X
Odontophrynidae	<i>Odontophrynus occidentalis</i>		LC	X

The level of risk according to the IUCN Redlist (2019): LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = critically endangered, and DD= Data Deficient.

***Common names in English were not available for most species under the sources cited.**

Regarding the reptiles, there are 20 potentially present species of one order (Squamata) and 6 families (**Table 5-9**). With respect to their risk status within IUCN's Red List, there are no reptile species listed under a risk category in IUCN Redlist present in this area.

Table 5-9 potentially distributed reptile species

FAMILY	SPECIES	ENGLISH NAME*	IUCN REDLIST STATUS	REFERENCE	
				IBAT	Medina et al (2012) ²¹
Amphisbaenidae	<i>Amphisbaena plumbea</i>	Lead worm lizard	LC	X	X
Dipsadidae	<i>Erythrolamprus sagittifer</i>	Arrow ground snake	LC	X	
Dipsadidae	<i>Philodryas psammophidea</i>	Günther's Green Racer	LC	X	
Dipsadidae	<i>Philodryas trilineata</i>		LC	X	
Dipsadidae	<i>Pseudotomodon trigonatus</i>	False tomodon snake	LC	X	
Leiosauridae	<i>Diplolaemus sexcinctus</i>		LC	X	X
Leiosauridae	<i>Leiosaurus bellii</i>	Bell's anole	LC	X	X
Leiosauridae	<i>Pristidactylus fasciatus</i>	D'Orbigny's Banded Anole	DD		X
Liolaemidae	<i>Liolaemus darwinii</i>	Darwin's tree iguana	LC	X	X
Liolaemidae	<i>Liolaemus elongatus</i>	Elongate tree iguana	LC	X	X
Liolaemidae	<i>Liolaemus gracilis</i>	Graceful tree iguana	LC	X	X
Liolaemidae	<i>Liolaemus gununakuna</i>		LC	X	X
Liolaemidae	<i>Liolaemus kriegi</i>	Krieg's tree iguana	LC	X	X
Liolaemidae	<i>Liolaemus purul</i>		LC	X	X
Liolaemidae	<i>Liolaemus rothi</i>	Roth's sand iguana	LC	X	X
Phyllodactylidae	<i>Homonota andicola</i>	Cei's marked gecko	LC	X	
Phyllodactylidae	<i>Homonota darwinii</i>	Darwin's marked gecko	LC	X	X
Phyllodactylidae	<i>Homonota fasciata</i>	South American Marked Gecko	LC	X	X
Phyllodactylidae	<i>Homonota underwoodi</i>	Underwood's Marked Gecko	LC	X	X
Teiidae	<i>Aurivela longicauda</i>	Longtail Whiptail	LC		X

The level of risk according to the IUCN Redlist (2019): LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = critically endangered, and DD= Data Deficient.

***Common names in English were not available for some species under the sources cited.**

²¹ Cintia, M., Mariana, M., Ignacio, M., Breitman, F.M., y Avila. L.J. 2012. Lagartijas de la Provincia de Neuquén (Argentina): estado de conservación, diversidad genética y mapas de distribución geográfica. Technical Report.

5.1.5.5 Other species of interest

Additionally, IBAT²² Screen Report produced a short list of naturally distributed insect species with potential occurrence in the Project area (Table 5-10). The Moscardon (*Bombus dahlbomii*) is an endangered species of bumblebee endemic to southern South America and is one of the largest bee species in the world.

Table 5-10 Potentially distributed insect species

ORDER	FAMILY	SPECIES	ENGLISH NAME*	IUCN REDLIST STATUS
Coleoptera	Scarabaeidae	<i>Canthon janthinus</i>		LC
Coleoptera	Scarabaeidae	<i>Canthon lituratus</i>		LC
Coleoptera	Scarabaeidae	<i>Malagoniella argentina</i>		LC
Coleoptera	Scarabaeidae	<i>Scybalophagus patagonicus</i>		LC
Hymenoptera	Apidae	<i>Bombus dahlbomii</i>	Moscardon	EN
Hymenoptera	Apidae	<i>Bombus opifex</i>		LC
Odonata	Aeshnidae	<i>Rhionaeschna diffinis</i>		LC
Odonata	Coenagrionidae	<i>Cyanallagma interruptum</i>		LC
Odonata	Coenagrionidae	<i>Ischnura fluviatilis</i>		LC
Odonata	Lestidae	<i>Lestes undulates</i>		LC
Odonata	Libellulidae	<i>Erythrodiplax ochracea</i>		LC
Odonata	Libellulidae	<i>Pantala flavescens</i>	Wandering glider	LC
Odonata	Petaluridae	<i>Phenes raptor</i>		LC

The level of risk according to the IUCN Redlist (2019): LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = critically endangered, and DD= Data Deficient.

***Common names in English were not available for most species under the sources cited.**

5.2 Socioeconomic Baseline

This chapter provides an overview of the socioeconomic conditions in the Project's Social Study Area, in the Piedra del Águila and Picún Leufú Municipalities and the Santo Tomás Development Commission, Departments of Collón Curá and Picún Leufú, Neuquén Province, Republic of Argentina (See Appendix D: Social Baseline Map). The overview focuses in the main socioeconomic aspects that the Project may affect

²² IBAT - WORLD BANK GROUP BIODIVERSITY RISK SCREEN Report, 2019. Generated under licence number 1071-2304 held by Environmental Resources Management from the Integrated Biodiversity Assessment Tool on 30/05/2019. [http:// www.ibat-alliance.org](http://www.ibat-alliance.org)

in its construction and operation phases. Information in this section is presented at a Municipality level, and references to the Departments and Province are provided as context.

Data presented was obtained from publicly available official secondary sources, mainly the Neuquén Provincial Government website. In addition, ERM undertook a site visit on May 29 and 30 2019, to identify local stakeholders and understand general socioeconomic conditions within the Study Area. Visit included meetings with local authorities from the Piedra Del Águila Municipality and the Santo Tomás Development Commission (*Comisión de Fomento*). Qualitative data was collected through interviews with local stakeholders to gather information on local perceptions regarding the Project, social baseline and impacts.

5.2.1 Study area

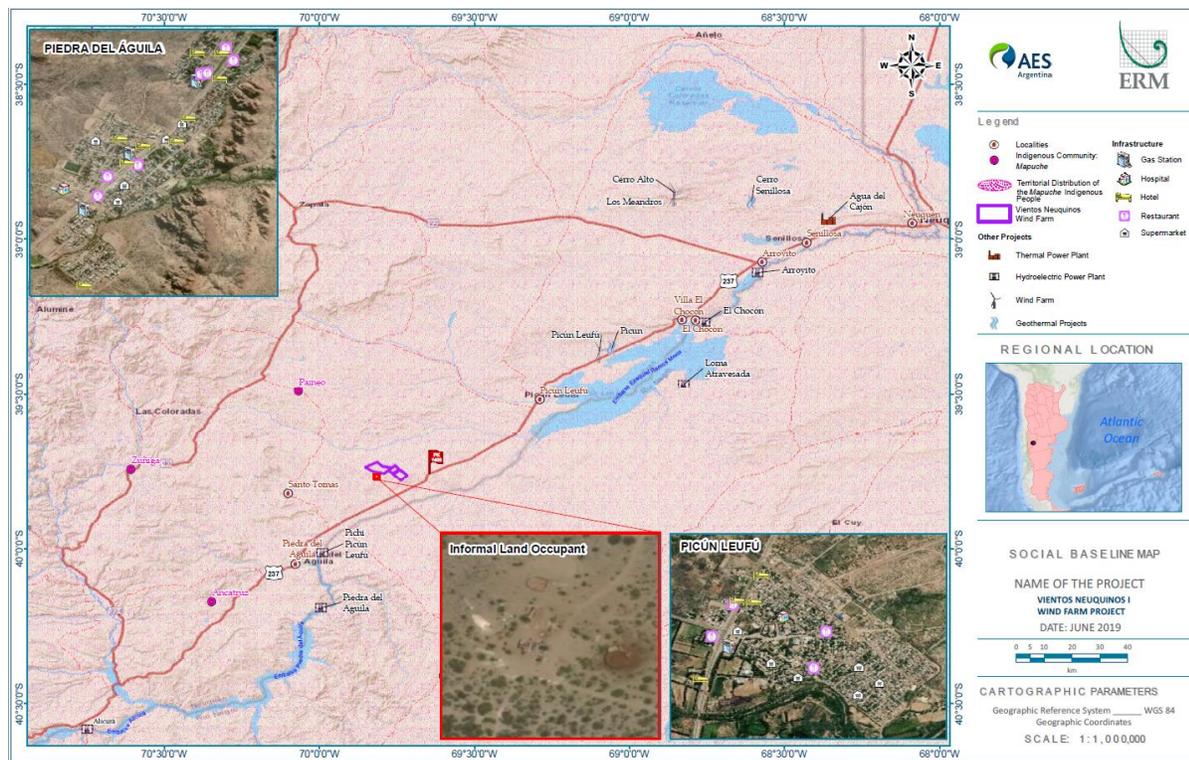
The Study area is located in the Departments of Collón Curá and Picún Leufú, in the Neuquén Province, and consists of the Piedra del Águila and Picún Leufú and the Santo Tomás Development Commission.

The following table presents the administrative structure where the Study and Project area are located.

Table 5-11 Study and Project Area Administrative Structure

Department	Municipality / Development Commission
Collón Cura	Piedra del Águila Municipality
	Santo Tomás Development Commission
Picún Leufú	Picún Leufú Municipality

Figure 5-9 Map of Socio-economic Study Area



Source: ERM 2019

5.2.2 Governance and Administration

The Republic of Argentina is divided into 24 first-order jurisdictions: 23 Provinces and 1 Autonomous City (Buenos Aires). Each is an autonomous Government, and has its own Constitution and Legislation, but still has to comply with national-level legislation. Each Province, in turn, is divided into administrative territories known as Departments, with no political government. Departments are in turn are divided into Municipalities.

5.2.2.1 Administrative Structure and Settlements in the Project Area

The Project area is located in the Collón Cura Department in a territory between the municipalities of Piedra Del Águila and Picún Leufú and the Santo Tomás Development Commission in the Neuquén Province.

Piedra Del Águila is the capital of the Collón Curá department, regarded as a second category municipality by Provincial law. Maria Adriana Figueroa currently holds intendent office.

Picún Leufú is the capital of the same name department, regarded as a second category municipality by Provincial law. Carlos Castebianco currently holds intendent office.

A Development Commission (*Comisión de Fomento*) leads the Santo Tomás locality. Gladis Pavón is the President.

5.2.2.2 Local Decision-Making

Provincial level

Neuquén is located in the south of the country, northeast of the Patagonia region; bordered to the north by Mendoza (part of its border forms the Colorado River), to the southeast by Rio Negro (much of this border forms the Limay River) and to the west by Chile.

The Government in the Neuquén Province is organized as a representative republican system, divided into Executive, Legislative and Judicial branches. The Executive, led by the Governor, is elected every 4 years in a free, secret and mandatory election, in a second round system and with the possibility of a single re-election. Neuquén also has a Legislative branch, a unicameral legislative body in charge of drafting, debating and passing Law, formed by 35 deputies or representatives, also elected every 4 years.

Municipal level

Municipalities (*Municipios*) and Development Commission (*Comisiones de Fomento*) govern territories and population at the local level in Argentinian Provinces. Each Provincial Government creates Municipalities and Development Commissions according to the definitions and classifications established in their Constitutions.

The Neuquén Province divides into 16 Departments, listed below including the corresponding capital cities (Municipalities).

Table 5-12 Departments in the Neuquén Province

Department (Capital)
Aluminé (Aluminé)
Añelo (Añelo)
Catán Lil (Las Coloradas)

Department (Capital)

Chos Malal (Chos Malal)

Collón Curá (Piedra del Águila)

Confluencia (Neuquén)

Huiliches (Junín de los Andes)

Lácar (San Martín de Los Andes)

Loncopué (Loncopué)

Los Lagos (Villa La Angostura)

Minas (Andacollo)

Ñorquín (El Hucú)

Pehuenches (Buta Ranquil)

Picún Leufú (Picún Leufú)

Picunches (Las Lajas)

Zapala (Zapala)

Source: Ministry of Economy and Public Finance.

<http://www2.mecon.gov.ar/hacienda/dncfp/municipal/caracterizacion/exportar2.php?provincia=q>

The Neuquén Province Constitution defines three categories of local government²³:

- First-category Municipalities, larger than 5,000 inhabitants;
- Second-category Municipalities, smaller than 5,000 but larger than 1,500 inhabitants; and
- Third-category Municipalities, smaller than 1,500 and more than 500 inhabitants.

Executive Power may create, at request, Development Commissions in those settlements with stable population, strong neighborhood relations and roots that do not reach the Municipality category. A president will administer Development Commissions.

5.2.3 Demographics

5.2.3.1 National

In 2017, Argentina's population numbered 44 million inhabitants²⁴, mainly concentrated in urban areas (92%). Argentina has a young population: 25% was aged under 14 in 2017, with a total average annual growth of 0.9%. Argentina's population continues to grow but at a slower pace because of a steadily declining birth rate²⁵.

5.2.3.2 Provincial

In 2010, the Neuquén Province had 551,266 inhabitants, mainly concentrated in urban areas (92%). Neuquén also had a young but aging population: 27% were aged under 14 in 2010, versus 32% in 2001,

²³ See the Neuquén Province Constitution at: <http://w2.neuquen.gov.ar/images/stories/laprovincia/Constitucionprov.pdf>

²⁴ World Bank Open Data (2017). World Bank Group. <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=AR>

²⁵ IndexMundi Argentina. https://www.indexmundi.com/argentina/demographics_profile.html

with a total average annual growth of 1.8%. Neuquén population comprises 1.4% of the Argentinian population, and totals 5.86 inhabitants per km². Neuquén is the 13th province in area (extension), 16th in population and 17th in population density.

5.2.3.3 Departmental

Collón Curá numbered 4,532 people in 2010, mainly located in urban areas (69%) but with a strong rural presence, with an average annual growth rate of 0.3%²⁶. Collón Curá has a young but aging population: 29% were aged under 14 in 2010, versus 38% in 2001. The Picún Leufú Department numbered 4,532 people, mainly located in urban areas (81%) with a total average annual growth of 0.8%²⁷. Picún Leufú too has a young but aging population: 29% were aged under 14 in 2010, versus 35% in 2001.

5.2.3.4 Municipalities

Piedra Del Águila Municipality

The Piedra Del Águila municipality had 3,689 inhabitants in 2010 (2,886 in 1991, and 3,372 in 2001)²⁸, according to that year national Census, distributed evenly across sex (approx. 50% each). Population distributed in 1,039 households and occupied 1,247 private homes. 105 households (10.1%) have at least one unmet basic need.

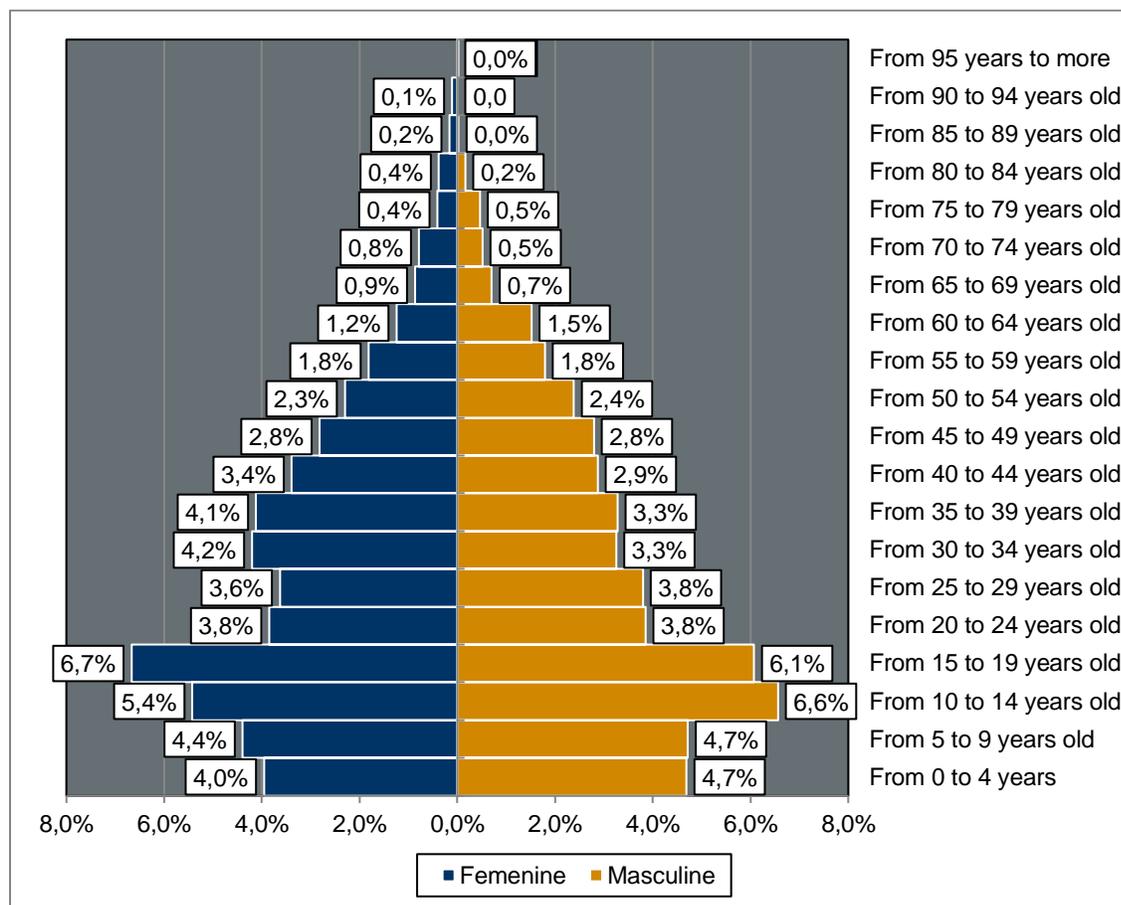
As for age/sex distribution, demographic pyramid shows a strong concentration in the younger segments of the population, for both sexes (*particularly between the ages of 0-4, 5-9, 10-14, 15-19, but also between the ages of 20-24, 25-29, 30-34 and 35-39*).

²⁶ INDEC. 2010. National Census of Population, Households and Housing 2010

²⁷ INDEC. 2010. National Census of Population, Households and Housing 2010

²⁸ INDEC. 2010. National Census of Population, Households and Housing 2010. Population yearly growth rate has descended, from 1.7% (between 1991 and 2001) to 1.0% (between 2001 and 2010). The projection computed by the Provincial Government added up to 4,146 inhabitants in 2012 and 4,514 in 2015.

Figure 5-10 Population pyramid in Piedra Del Águila



Source: INDEC. 2010. National Census of Population, Households and Housing 2010

Picún Leufú Municipality

The Picún Leufú municipality had 3,642 inhabitants in 2010 (2,524 in 1991 and 3,222 in 2001)²⁹, according to that year national Census, distributed evenly across sex (approximately 50% each). Population distributed in 1,116 households and occupied 1,341 private homes. 120 households (10.8%) have at least one unmet basic need³⁰.

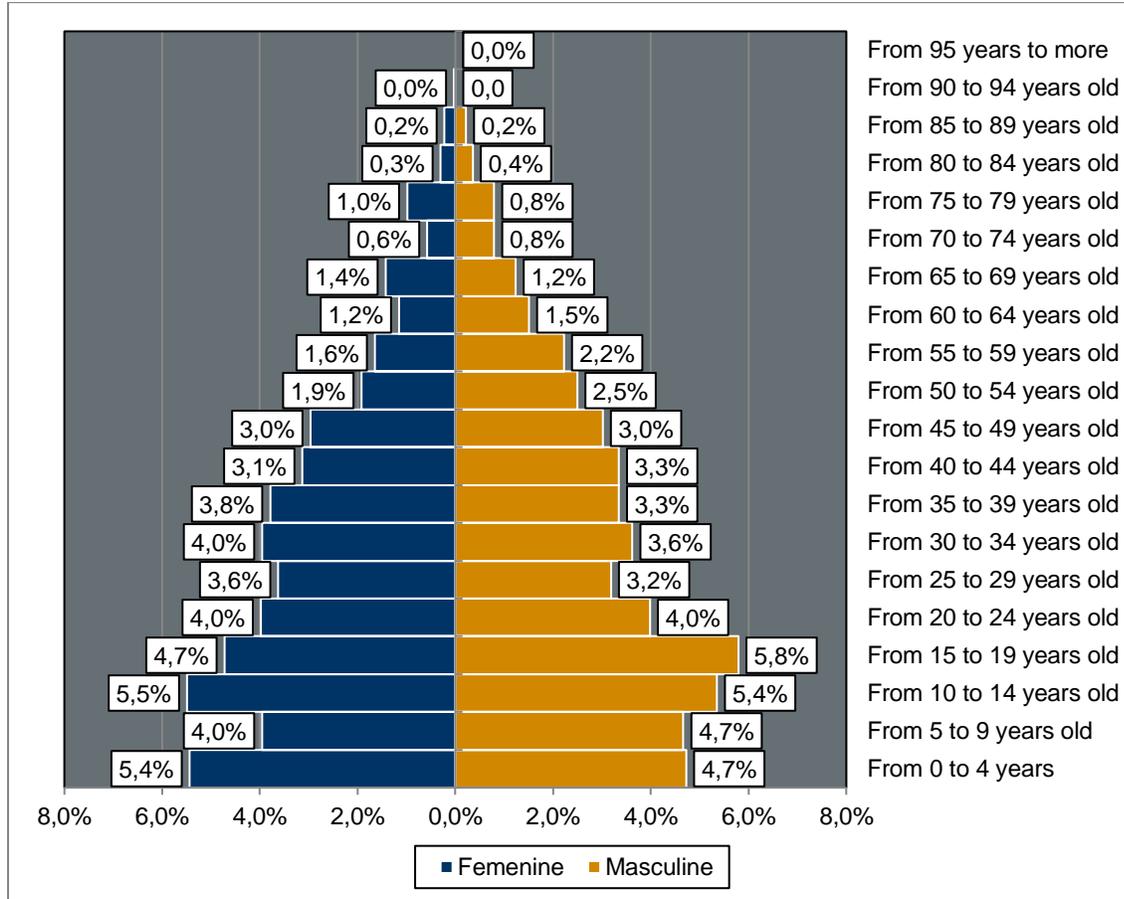
²⁹ INDEC. 2010. National Census of Population, Households and Housing 2010. Population yearly growth rate has descended, from 2.8% (between 1991 and 2001) to 1.4% (between 2001 and 2010).

³⁰ Households with NBI those with at least one deprivation indicator present:

- Households with more than 3 persons per room (critical overcrowding);
- Households living in an inconvenient type of dwelling (tenancy room, precarious dwelling or other type);
- Households without any type of toilet.
- Households with a child of school age (6 to 12 years old) who did not attend school;
- Households with 4 or more persons per employed member and whose head has not completed the third grade of primary schooling.

As for age/sex distribution, the population pyramid shows a concentration in the younger ages for both sexes (*particularly in the ages between 0-4, 5-9, 10-14 and 15-19*).

Figure 5-11 Population pyramid in Picún Leufú



Source: INDEC. 2010. National Census of Population, Households and Housing 2010

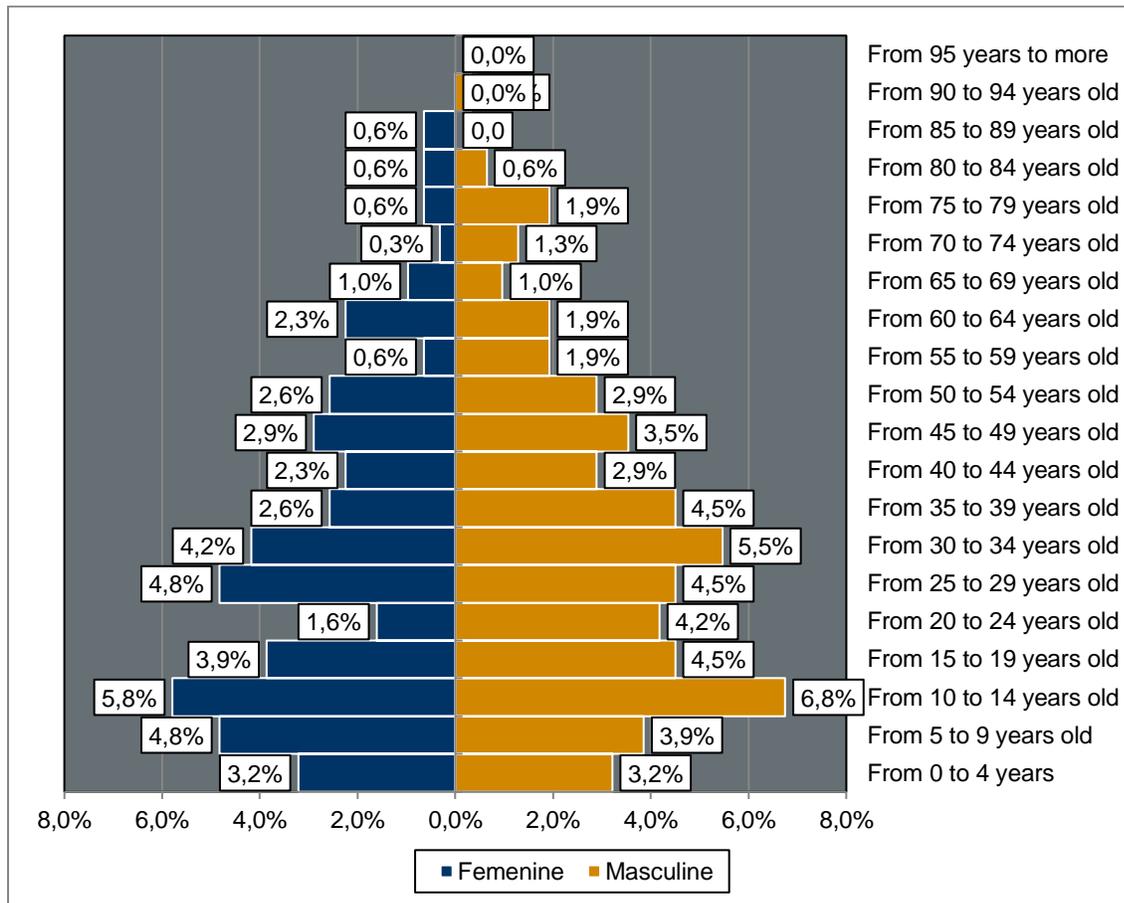
Santo Tomás Development Commission

The Santo Tomás locality had 311 inhabitants in 2010 (290 in 2001), according to that year national Census³¹, 55% men and 45% women. Population distributed in 100 households and occupied 127 private homes. 9 households (9%) had at least one unmet basic need.

As for the age/sex distribution, the demographic pyramid shows a clear concentration of younger population (*particularly men, between the ages of 10-14, 15-19, 20-24, 25-29, 30-34 and 35-39, but also younger women 0-4, 5-9, 10-14, 25-29, 30-34*). Female population is notoriously more absent, especially in the 15-19 and 20-24 segment, possibly due to higher education mobility.

³¹ INDEC. 2010. National Census of Population, Households and Housing 2010. Population yearly growth rate (2001-2010) is 0.8%.

Figure 5-12 Population pyramid in Santo Tomás



Source: INDEC. 2010. National Census of Population, Households and Housing 2010

5.2.4 Ethnicity, Language and Religion

5.2.4.1 National

Argentina is a pluricultural country due to the combination of several ethnic identities. It does not have an official language; but most of the country speaks Spanish. Indigenous peoples' languages are still present, and belong to several linguistic families. According to estimates from the latest population census (INDEC, 2010), of the 40 million inhabitants, 2.4% declare themselves indigenous, that is, more than 950,000 people³².

Some of the most prominent demographically are Guaraní in the northeast (especially in the interior of the Corrientes province), Quechua in the Santiago del Estero province and in areas of the Jujuy province, and Mapudungún in the Patagonia provinces³³.

5.2.4.2 Provincial, Departmental and Municipal

The following table shows the proportion of indigenous population in the selected territories.

³² See: <https://www.conicet.gov.ar/la-compleja-realidad-de-las-lenguas-indigenas-en-argentina/>

³³ See: <http://archivo-cdl.blogspot.com/2010/01/situacion-sociolingustica-de-los.html>

Table 5-13 Indigenous Population in the Province, Departments and Municipalities

Territory	Population	Indigenous Population	%
Neuquén Province	551,266	43,357	8%
Collón Curá Department	4,532	920	20%
Picún Leufú Department	4,578	303	7%
Piedra del Águila Municipality	3,689	609	17%
Picún Leufú Municipality	3,642	201	6%
Santo Tomás Development Commission	NA	NA	NA

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

It should be noted that, according to the National Institute of Indigenous Affairs (INAI-Argentina³⁴), the Project area is located inside the “territorial distribution” of the *Mapuche* Indigenous People³⁵. This means that said area itself is located inside a territory which, according to the national authority on indigenous matters, may potentially hold more Indigenous Communities from the *Mapuche* Indigenous People. Nevertheless, in regards to land ownership, no specific Indigenous Community holds any property or possession over any lands in or around the Project area. For more detail on this topic, see below, the chapter on Indigenous Peoples.

5.2.5 Gender and Gender Rights

The situation of women in Argentina has improved in recent years in terms of their political participation, education and sexual and reproductive health, placing the country among the top countries in the continent in terms of gender equality. However, the growing integration of women in the labor market has not been counterbalanced by a greater commitment of men to family and domestic roles³⁶.

5.2.6 Economy and Employment

5.2.6.1 National Level

Argentina is one of the largest economies in Latin America, with a Gross Domestic Product (GDP) of more than US \$500 billion. However, the historical volatility of economic growth and the accumulation of institutional obstacles have impeded the country’s development³⁷.

As the World Bank states, this country has plentiful natural resources in energy and agriculture: it has extraordinarily fertile agricultural lands and an enormous potential in renewable energies. It is a leading

³⁴ See: <https://www.argentina.gob.ar/derechoshumanos/inai>

³⁵ See: <https://www.argentina.gob.ar/derechoshumanos/inai/mapa> or https://www.google.com/maps/d/viewer?mid=1nHGKks0JZLN5K0f4QORg9xsh_c&ll=-40.199673115290615%2C-63.09439099999997&z=3

³⁶ Información para la igualdad. <http://www.amecopress.net/spip.php?article7810>

³⁷ World Bank Group- Argentina. <https://www.worldbank.org/en/country/argentina/overview>

country in food production, with large-scale industries in the agriculture and cattle sectors. Argentina also has great opportunities in manufacturing sub-sectors and in the high-tech innovative services sector³⁸.

5.2.6.2 Provincial Level

In Neuquén, hydrocarbon, petro-chemistry, tourism, agriculture (fruit) and livestock are the GDP-contributing activities. Neuquén GDP reached 12,943 million pesos, representing a GDP per capita of 21,535 pesos, and contributing 1.9% of the national GDP in 2013³⁹.

Table 5-14 Neuquén's Economic Structure⁴⁰

Sector	% of Neuquén GDP (2013)	Amount (pesos)
Primary	36.7	4,752 million
Mine Exploitation ⁴¹	35.5	
Agriculture, Livestock and Fishing	1.2	
Secondary	15	1,958 million
Tertiary	48	6,233 million
Commerce, hotels and restaurants, transportation and communication, financial intermediation, and corporate and real estate services	31	
Public administration, health, education, personal services	17	

Source: FAO/PROSAP/Neuquén Province Government 2015

In terms of employment, in the Neuquén province, two out of three of all working-age population are economically active. Nine out of ten are occupied among economically active population.

Table 5-15 Economic activity and occupation rate

Rate	Male	Female	Total
Economic activity	77.9%	57.7%	67.6%
Occupation	95.0%	92.0%	93.7%

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

³⁸ World Bank Group- Argentina. <https://www.worldbank.org/en/country/argentina/overview>

³⁹ FAO/PROSAP/Neuquén Province Government 2015

⁴⁰ FAO/PROSAP/Neuquén Province Government 2015

⁴¹ The classification of economic activities according to the International Standard Industrial Classification (ISIC) includes: the exploitation of crude oil and natural gas and related activities, the extraction of metalliferous minerals and the exploitation of mines and quarries.

5.2.6.3 Municipal /Development Commission Level

Piedra Del Águila Municipality

In Piedra Del Águila, two out of three of all working-age population are economically active. Nine out of ten are occupied among economically active population. Numbers are close to the provincial mean.

Table 5-16 Economic activity and occupation rate

Rate	Male	Female	Total
Economic activity	73.4%	54.6%	63.6%
Occupation	93.6%	91.2%	92.5%

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Picún Leufú Municipality

In Picún Leufú, two out of three of all working-age population are economically active. Nine out of ten are occupied among economically active population. Numbers are close to the provincial mean.

Table 5-17 Economic activity and occupation rate

Rate	Male	Female	Total
Economic activity	74.2%	57.2%	65.9%
Occupation	94.3%	92.1%	93.4%

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

5.2.7 Livelihoods and Income

5.2.7.1 Provincial Level

Neuquén economic units are primarily commercial. Retail commerce, accommodation and food services (oriented to tourism) and transport and storage services are prominent.

Table 5-18 Economic Units registered in Neuquén

Branch of activity	Year	
	2018	
Total	250	100%
Agriculture, livestock, hunting, forestry and fishing	-	0.0%
Mining and quarrying	-	0.0%
Manufacturing industry.	16	6.4%
Electricity, gas, steam and air conditioning supply.	3	1.2%
Water supply; sewerage; waste management, material recovery and public sanitation	-	0.0%

Branch of activity	Year	
	2018	
Construction	8	3.2%
Sale, maintenance and repair of vehicles and motor vehicles and motorcycles	8	3.2%
Wholesale and/or commission or consignment trade, except trade in motor vehicles and motorcycles.	1	0.4%
Retail trade except trade in motor vehicles and motorcycles.	97	38.8%
Transport and storage services	28	11.2%
Accommodation and meal services	29	11.6%
Information and Communications	6	2.4%
Financial intermediation and insurance services.	2	0.8%
Real Estate Services	3	1.2%
Professional, scientific and technical services	19	7.6%
Administrative activities and support services	4	1.6%
Public administration, defense and compulsory social security.	1	0.4%
Education	2	0.8%
Human Health and Social Services	1	0.4%
Artistic, cultural, sports and leisure services	8	3.2%
Association services and personal services.	14	5.6%
Services of private homes that contract domestic services.	-	0.0%
Services of extraterritorial organizations and bodies.	-	0.0%

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Main touristic attractions are fishing activities, and archaeological and paleontological resources. Fishing activities, mainly for recreational purposes, are offered in the Limay River and the Exequiel Ramos Mejía Lake/Dam, where rainbow and brown trout, silverside and perch can be caught. Municipal administration has reportedly been designing plans to develop water (rowing, skiing, boat rides and fishing trips) and land (mountain biking, trekking, horseback riding) recreation.

Regarding paleontological resources, recent work discovered dinosaur prints (similar to those found at the neighboring town of Villa Chocón). The Municipality worked on preserving them from human activity and water from the Lake/Dam. Also in the area were found petrified eggs and fossil remains.

5.2.7.2 Departmental Level

Picún Leufú Department

Picún Leufú economy is primarily based on commerce and services. Retail commerce, accommodation and food services (oriented to tourism) and transport and storage services are prominent.

Table 5-19 Economic Units registered in Piedra del Águila

Branch of activity	Year	
	2018	
Total	250	100%
Agriculture, livestock, hunting, forestry and fishing	-	0.0%
Mining and quarrying	-	0.0%
Manufacturing industry.	16	6.4%
Electricity, gas, steam and air conditioning supply.	3	1.2%
Water supply; sewerage; waste management, material recovery and public sanitation	-	0.0%
Construction	8	3.2%
Sale, maintenance and repair of vehicles and motor vehicles and motorcycles	8	3.2%
Wholesale and/or commission or consignment trade, except trade in motor vehicles and motorcycles.	1	0.4%
Retail trade except trade in motor vehicles and motorcycles.	97	38.8%
Transport and storage services	28	11.2%
Accommodation and meal services	29	11.6%
Information and Communications	6	2.4%
Financial intermediation and insurance services.	2	0.8%
Real Estate Services	3	1.2%
Professional, scientific and technical services	19	7.6%
Administrative activities and support services	4	1.6%
Public administration, defense and compulsory social security.	1	0.4%
Education	2	0.8%
Human Health and Social Services	1	0.4%
Artistic, cultural, sports and leisure services	8	3.2%
Association services and personal services.	14	5.6%
Services of private homes that contract domestic services.	-	0.0%
Services of extraterritorial organizations and bodies.	-	0.0%

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

5.2.7.3 Municipal / Development Commission

Piedra del Águila Municipality

Due to its location on Provincial Route N° 237, between Neuquén City, and Bariloche and San Martín de los Andes (two of the main mountain tourism destinations in Argentina), Piedra del Águila functions as a

rest spot for tourists, and therefore holds significant lodging, restaurant and service infrastructure to cater to travelers on the road.

A significant attraction is recreational/sport fishing in the Limay Lake and associated River, located just a few kilometers away from the main urban centre. Trouts and perchs can be captured spinning, fly-fishing and boat fishing. Tourists can access the River through private lodges.

Photo 5.1 Fly-fishing at Limay River



Source: Neuquén Tourism Ministry. Available at: <http://neuquentur.gob.ar/en/localidades-neuquinas/21793/piedra-del-aguila/>

The Kumelkayen Recreational Centre, located approximately 5 km from the main urban center, is a riverside attraction. Equipped with infrastructure and services (public restrooms and showers, restaurants, tourist information, camping and barbecue areas, parking space, boat guardianship), tourists are also offered recreational sporting areas and a birdwatching dock.

Photo 5.2 Kumelkayen Recreational Center at Limay River



Source: Neuquén Tourism Ministry. Available at: <http://neuquentur.gob.ar/en/localidades-neuquinas/21793/piedra-del-aguila/>

Historical attractions may be found in the local Museum, which displays paleontological (fauna) and archaeological (cultural) remains and Republican-era historical local artefacts.

Picún Leufú Municipality

Picún Leufú economy is primarily based on commerce and services. Retail commerce and accommodation and food services (oriented to tourism) are prominent. Picún Leufú economy is also based on familiar agriculture. Reportedly, 2.9 ha in the region are currently irrigated. Alfalfa is the main product, but fruit, vegetables and forestry are also produced.

Table 5-20 Economic Units registered in Picún Leufú

Branch of activity	Year	
	2018	
Total	209	100%
Agriculture, livestock, hunting, forestry and fishing	5	2.4%
Mining and quarrying	3	1.4%
Manufacturing industry.	9	4.3%
Electricity, gas, steam and air conditioning supply.	1	0.5%
Water supply; sewerage; waste management, material recovery and public sanitation	-	0.0%
Construction	1	0.5%
Sale, maintenance and repair of vehicles and motor vehicles and motorcycles	14	6.7%
Wholesale and/or commission or consignment trade, except trade in motor vehicles and motorcycles.	1	0.5%
Retail trade except trade in motor vehicles and motorcycles.	116	55.5%
Transport and storage services	8	3.8%
Accommodation and meal services	17	8.1%
Information and Communications	8	3.8%
Financial intermediation and insurance services.	1	0.5%
Real Estate Services	2	1.0%
Professional, scientific and technical services	5	2.4%
Administrative activities and support services	-	0.0%
Public administration, defense and compulsory social security.	1	0.5%
Education	-	0.0%
Human Health and Social Services	3	1.4%
Artistic, cultural, sports and leisure services	7	3.3%
Association services and personal services.	7	3.3%
Services of private homes that contract domestic services.	-	0.0%
Services of extraterritorial organizations and bodies.	-	0.0%

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Santo Tomás Development Commission

Santo Tomás economy is primarily based on industry, commerce and services. Manufacturing (bakery wares, except biscuits and crackers, soda and water, cement and furniture and parts of furniture, wood mainly), retail (and essential services (electricity, gas, etc.) are prominent.

Public administration (not registered) and familiar agriculture and sheep and goat livestock (also not registered) are also prominent.

Table 5-21 Economic Units registered in Santo Tomás

Branch of activity	Year	
	2018	
Total	9	100%
Agriculture, livestock, hunting, forestry and fishing	-	0.0%
Mining and quarrying	-	0.0%
Manufacturing industry.	4	44.4%
Electricity, gas, steam and air conditioning supply.	2	22.2%
Water supply; sewerage; waste management, material recovery and public sanitation	-	0.0%
Construction	-	0.0%
Sale, maintenance and repair of vehicles and motor vehicles and motorcycles	-	0.0%
Wholesale and/or commission or consignment trade, except trade in motor vehicles and motorcycles.	-	0.0%
Retail trade except trade in motor vehicles and motorcycles.	2	22.2%
Transport and storage services	1	11.1%
Accommodation and meal services	-	0.0%
Information and Communications	-	0.0%
Financial intermediation and insurance services.	-	0.0%
Real Estate Services	-	0.0%
Professional, scientific and technical services	-	0.0%
Administrative activities and support services	-	0.0%
Public administration, defense and compulsory social security.	-	0.0%
Education	-	0.0%
Human Health and Social Services	-	0.0%
Artistic, cultural, sports and leisure services	-	0.0%
Association services and personal services.	-	0.0%
Services of private homes that contract domestic services.	-	0.0%
Services of extraterritorial organizations and bodies.	-	0.0%

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

The local bottled mineral water plant reportedly employs approx. 17 workers and when it closed last year (2018) the Provincial Governor (Omar Gutiérrez) worked closely with the local president (Gladis Pavón) to reopen it⁴²; an event that highlights the economic and social importance of the company to the locality.

5.2.8 Education

5.2.8.1 National Level

Argentina⁴³ divides the education system in (4) four levels:

- Early education (*educación inicial*)
- Primary education (*educación primaria*)
- Secondary education (*educación secundaria*)
- Higher education (*educación superior*)
- Vocational training (*formación profesional*)

5.2.8.2 Provincial Level

The following table presents an educational overview of the Neuquén Province in 2017⁴⁴. See table below.

Table 5-22 Educational overview of the Neuquén Province

Indicator	Value
Educational centers	809
Students enrolled at the primary level	82,302
Students enrolled at the secondary level	49,319

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

5.2.8.3 Departmental Level

Collón Cura Department

The following table presents an educational overview of the Collón Curá Department in 2017. See table below.

Table 5-23 Educational overview of Collón Curá (Department)

Indicator	Value
Educational centers	13
Students enrolled at the primary level	586
Students enrolled at the secondary level	344

⁴² See the local media coverage at: <https://www.lmneuquen.com/volveran-vender-el-agua-mineral-santo-tomas-n613610>

⁴³ Argentinian Education Law 26.206.

⁴⁴ Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Picún Leufú Department

The following table presents an educational overview of the Picún Leufú Department in 2017. See Table below.

Table 5-24 Educational overview of Picún Leufú (Department)

Indicator	Value
Educational centers	13
Students enrolled at the primary level	612
Students enrolled at the secondary level	352

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

5.2.8.4 Municipal / Development Commission

Piedra del Águila Municipality

In 2017, Piedra del Águila had 7 educational institutions, from kindergartens to primary and secondary schools.

See Table below.

Table 5-25 Educational overview of Piedra del Águila (Municipality)

Indicator	Value
Educational centers	7
Students enrolled at the primary level	485
Students enrolled at the secondary level	344

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Picún Leufú Municipality

In 2017, Picún Leufú had 10 educational institutions, including kindergarten, elementary and high schools.

See Table below.

Table 5-26 Educational overview of Picún Leufú (Municipality)

Indicator	Value
Educational centers	10
Students enrolled at the primary level	537
Students enrolled at the secondary level	329

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Santo Tomás Development Commission

In 2017, Santo Tomás had a public kindergarten and elementary school.

See Table below.

Table 5-27 Educational overview of Santo Tomás

Indicator	Value
Educational centers	1
Students enrolled at the primary level	47
Students enrolled at the secondary level	-

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

5.3 Public Health

5.3.1 Provincial Level

Neuquén Province public health infrastructure is summarized in the following table.

Table 5-28 Healthcare infrastructure in Piedra del Águila

Service	Year	Number
Hospitals	2016	29
Public health care center	2016	81
Private clinics and/or sanatoriums	2016	13

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

5.3.2 Departmental Level

Collón Cura Department

Collón Cura Department public health infrastructure is summarized in the following table.

Table 5-29 Healthcare infrastructure in Collón Cura Department

Service	Year	Number
Hospitals	2016	1
Public health care center	2016	-
Private clinics and/or sanatoriums	2016	-

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Picún Leufú Department

Picún Leufú Department public health infrastructure is summarized in the following table.

Table 5-30 Healthcare infrastructure in Picún Leufú Department

Service	Year	Number
Hospitals	2016	1
Public health care center	2016	-
Private clinics and/or sanatoriums	2016	-

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

5.3.3 Municipal / Development Commission

Piedra del Águila Municipality

Piedra del Águila has 1 public hospital (low complexity level, III⁴⁵), located 130 m from Route N° 237. Piedra del Águila public health infrastructure is summarized in the following table.

Table 5-31 Healthcare infrastructure in Piedra del Águila

Service	Year	Number
Hospitals	2016	1
Public health care center	2016	-
Private clinics and/or sanatoriums	2016	-

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

An overview of Piedra del Águila's population health indicators is presented on the following table.

Table 5-32 Health indicators in Piedra del Águila

Indicator	Rate per 1,000
Main pathologies: Accidents in the home	0.3
Main pathologies: Road accidents	12.5
Main pathologies: Bronchiolitis in children under 2 years old	6.2
Main pathologies: Acute diarrhea	141.2
Main pathologies: Influenza type disease (ETI)	178.9

⁴⁵ Low Complexity Hospitals (Level III) provide undifferentiated medical care through professionals trained in General Medicine. See Ministry of Health, Neuquén Provincial Government: <https://www.saludneuquen.gob.ar/organizacion-sectorial/>

Main pathologies: Hepatitis A	0.0
Main pathologies: Hydatidosis	0.0
Main pathologies: Mumps	0.0
Main pathologies: Tuberculosis	0.5
Main pathologies: Chickenpox	39.3
Automobile Traffic Accidents	24.1
Automobile traffic accidents with material damage	14.1
Serious Injury Motor Vehicle Accidents	1.4
Mildly Injurious Motor Vehicle Accidents	7.3
Motor vehicle accidents with fatalities	1.4

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Picún Leufú Municipality

Picún Leufú has 1 public hospital (low complexity level (III)⁴⁶). Picún Leufú public health infrastructure is summarized in the following table.

Table 5-33 Healthcare infrastructure in Picún Leufú

Service	Year	Number
Hospitals	2016	1
Public health care centers	2016	-
Private clinics and/or sanatoriums	2016	-

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

An overview of Picún Leufú's population health indicators is presented on the following table.

Table 5-34 Health indicators in Picún Leufú

Indicator	Rate per 1,000
Main pathologies: Accidents in the home	12.1
Main pathologies: Road accidents	20.6
Main pathologies: Bronchiolitis in children under 2 years old	0.8
Main pathologies: Acute diarrhea	50.0

⁴⁶ Low Complexity Hospitals (Level III) provide undifferentiated medical care through professionals trained in General Medicine.

See Ministry of Health, Neuquén Provincial Government: <https://www.saludneuquen.gob.ar/organizacion-sectorial/>. See local media coverage at: <https://www.lmneuquen.com/reclaman-medicos-la-zona-picun-n535753>

Main pathologies: Influenza type disease (ETI)	83.5
Main pathologies: Hepatitis A	0.0
Main pathologies: Hydatidosis	0.0
Main pathologies: Mumps	0.3
Main pathologies: Tuberculosis	0.0
Main pathologies: Chickenpox	1.4
Automobile Traffic Accidents	14.8
Automobile traffic accidents with material damage	8.8
Serious Injury Motor Vehicle Accidents	1.4
Mildly Injurious Motor Vehicle Accidents	4.1
Motor vehicle accidents with fatalities	0.5

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Santo Tomás Development Commission

Santo Tomás health services are comprised by a first-aid room. In order to evacuate (ambulance) and for more complex medical attention, Santo Tomás population relies on the public hospital of the neighboring Piedra del Águila municipality⁴⁷.

Table 5-35 Healthcare infrastructure in Santo Tomás

Service	Year	Number
Hospitals	2016	-
Public health care centers	2016	-
Private clinics and/or sanatoriums	2016	-

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

5.4 Security

5.4.1.1 Municipal / Development Commission

Piedra del Águila Municipality

An overview of Piedra del Águila's population security indicators is presented on the following table

Table 5-36 Security indicators in Piedra del Águila

Indicator	Rate per 1,000
Crimes with police intervention	20.3

⁴⁷ Source: Interview with Santo Tomás' local authorities.

Vientos Neuquinos I Wind Farm Project (Neuquén, Argentina)

Crimes against sexual integrity	0.5
Crimes against freedom	2.4
Crimes against property	14.6
Crimes against persons	0.8
Other crimes	1.9

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

Picún Leufú Municipality

An overview of Picún Leufú's population security indicators is presented on the following table

Table 5-37 Security indicators in Picún Leufú

Indicator	Rate per 1,000
Crimes with police intervention	70.6
Crimes against sexual integrity	0.5
Crimes against freedom	5.8
Crimes against property	47.5
Crimes against persons	6.9
Other crimes	9.9

Source: Provincial Directorate of Statistics and Censuses. Provincial Register of Economic Units (RePUE), based on the information provided by the Municipalities and Development Commissions.

5.5 Accommodation Infrastructure and Services

5.5.1.1 Municipal /Development Commission

Piedra del Águila Municipality

According to information provided by local authorities⁴⁸, in Piedra del Águila there are 9 hostels with a capacity of around 160 beds (140 are currently available), and 4 restaurants with a 30 people per restaurant capacity.

Picún Leufú Municipality

According to information provided by local authorities⁴⁹, Picún Leufú has around 50 beds available, distributed in 4 hostels.

⁴⁸ Source: Interview with Piedra del Águila's local authorities.

⁴⁹ Source: Interview with Picún Leufú's local authorities.

Santo Tomás Development Commission

According to information provided by local authorities, Santo Tomás has 1 public hostel with five beds, and one cabin, with three beds⁵⁰.

5.6 Stakeholder Mapping

Stakeholder mapping is a tool for identifying and analyzing Project stakeholders and planning the Project communication process. It helps define *who* should the Project engage, and *how* should it engage them. Mapping is also useful for effectively managing stakeholder expectations when deciding timing for stakeholder involvement. Key aspects to consider in stakeholder mapping are: a) *position* regarding the Project (which maybe negative, neutral or positive) and b) *influence* on other stakeholders (which may be low, medium or high).

A stakeholder (or actor) is an individual, group or organization who has an interest in the results of a particular intervention or action from other actors. Commonly regarded as stakeholders are those individuals, groups or organizations that affect or are affected by the development of certain activities; or who possess information, resources, experience or some form of power to influence the actions of others in a determined area (ECFAO, 2006). The following table lists the main stakeholders identified in the Project's Social Study Area. For further information, refer to Appendix I of this report, where it was enclosed the Stakeholder Engagement Plan (SEP) for this project

Table 5-38 List of representative stakeholders in the Project influence area

Category	Stakeholder	Description
Public administration	Neuquén Investment Agency (ADINQN)	Promotes investment in the Neuquén Province
	Mining Direction of the Neuquén Provincial Government	Issues permits for the exploitation of quarries for construction works.
	Cultural Heritage Direction of the Neuquén Provincial Government	Issues permits for all interventions on or close to cultural heritage assets or areas, affecting either its structure or image. Will supervise the development of the Project earthworks through a licensed professional.
	National Roads and Highways Direction of the Neuquén Provincial Government	Issues transit permits to circulate through Neuquén routes.
	Municipalities of Piedra del Águila, Picún Leufú and Santo Tomás Development Commission.	They promote local development and private investment in its municipality and articulate with local authorities and the private sector to secure job opportunities for its inhabitants. Habilitates lodgings to assure that they fulfill the minimum requirements.
Workers' Unions	Argentine Construction Workers' Union (Unión Obrera de la	Supervises Working Conditions and Environment in the construction industry (CyMAT) on construction sites.

⁵⁰ Source: Interview with Santo Tomás' local authorities.

	Construcción de la República Argentina, UOCRA)	Delegates are appointed on site to supervise working conditions. Piedra del Águila does not have a delegate. UOCRA has signed an agreement with Nordex whereby they commit to 70% of the workforce being local.
Private Sector	Owners of accommodation, food, tourist and other services.	Companies dedicated to providing lodging and food services to passing tourists and fishermen in the town of Piedra del Águila and Picún Leufú.
Affected communities	Families affected by the physical and/or economic displacement generated by the Project.	A family has been identified; occupying a house located less than 500 m away from the Project, which carries out grazing activities in the Project area.
NGOs	FUNDASUR	International, national, and local non-government organization that could generate an opinion due to the Project's environmental and social performance.
Communications media	Neuquén: Channel 18 DAVITEL; newspapers La Mañana de Neuquén and Río Negro; Websites: https://www.neuqueninforma.gob.ar . Piedra del Águila: Radio: Gregorio Alvarez, Channel 8, www.rionegro.com.ar . Websites: www.lmneuquen.com , www.eldiariodelturismo.com.ar ,	Could influence public opinion and awaken general interest regarding the Project.

Source: ERM Recognition Visit, 2019.

During the visit performed to the Project influence area on May 29th and 30th, interviews were held with local authorities of Piedra del Águila, Santo Tomás and the Executive Director of ADINQN. In addition, an interview was held with the household head of the nearby family potentially affected by the Project's construction activities. Primary data collected during the visit contributed to the elaboration of a preliminary map of Project stakeholders, shown in Table below.

Table 5-39 Preliminary mapping of Project stakeholders

Category	Stakeholder	Project Role	Position ⁵¹	Power hierarchy ⁵²
Public administration	ADINQN Lic. Carlos Pereyra – Executive Director Ing. Hipolito	Promotes investment in the Neuquén Province	In favor	High
	Piedra del Águila Municipality Marcelo Ortiz – Council President Maria Belén Vasquez – Council Women Natalia Zea –Culture Secretary Martín Rucci – Tourism Secretary	Coordinates with authorities and the private sector to promote job opportunities for its inhabitants through job banks. Habilitates lodgings to ensure that they comply with the minimum requirements. They have identified available lodgings and they are willing to engage Nordex and AES.	In favor	High
	Santo Tomás Development Commission Intendent – Gladis Pavón	Coordinates with the Neuquén Province to promote the local development in Santo Tomás. It has a community lodging with 8 beds. Santo Tomás has spring water sources to provide drinking water to the locality and other areas. Potentially it could supply drinking water to the Project. In Santo Tomás there is a private mineral water company that can supply drinking water to Project workers.	In favor	High
Private sector	Land owners	Owners of lands where the Project's right-of-way easement will be enabled.	In favor	Low
Affected communities	Nearby family	Has a house located less than 500 m away from the Project, and carries out grazing activities in the Project area?	In favor	Low

Source: ERM fieldwork, May 29th, 30th, 2019.

A Stakeholder Engagement Plan (SEP) was prepared for the project (See Appendix I). It is important to mention that community engagement tasks have been taking place with the priority stakeholders. In addition, the Environmental and Social Management System establishes as a commitment to keep the aforementioned Plan with periodic updates.

⁵¹ In favor, indifferent, against.

⁵² High, medium, low.

5.6.1.1 Local perceptions regarding the Project

Local perceptions of the Project are available below:

ADINQN

The Executive Director of ADINQN stated that the development of the Vientos Neuquinos Project is important for the entity because the other two initiatives (Picún Leufú and Los Meandros) are paralyzed. In the case of Picún Leufú it does not have the capacity to transmit energy and in the case of Los Meandros (125 MW) they have delays in financing. In the short term, Vientos Neuquinos will be the first wind farm in the locality and they hope that the Project will be executed with an appropriate standard.

On the other hand, he pointed out that as an authority they are articulating efforts with the different government instances to speed up the procedures and permits required by the Project in order to reduce delays. In addition, he noted that they are enabling a public access road to the Project by the provincial route to Santo Tomás.

The promotion of the Project by ADINQN is relevant, since as a provincial authority it articulates efforts with the local authorities for the communication of the Project and for the promotion of the job exchanges of the localities of the area of influence of the Project with the UOCRA and Nordex.

It should be noted that ADINQN notified all local authorities, easement owners and the family located nearby to the Project start, by means of letters sent in April 2019.

Piedra del Águila Municipality

Local authorities have a position in favor of the Project. They think it is very positive that AES engages the municipality, since they see the Project as an opportunity to generate jobs for the inhabitants. In this regard, they have developed a job bank of 100 workers, composed of 100% unskilled labor (welders, masons, pawns, etc.). This job bank has been shared with ADINQN. They indicated that they have no relationship with the UOCRA and that the UOCRA has no delegates in the area.

According to the presentation made by ADINQN, a few weeks ago, they are aware that the Project will require around 70 specialized professionals and the difference may be covered by local labor. In addition, 15 people will be required in the operation stage. They expressed their interest in articulating the technical training they provide locally with the technical requirements of employment in the operation phase, to guide the technical training of young people to these branches, and thus ensure that the local population has the priority to occupy these positions. In this regard, AES indicated that Nordex signed an agreement with the UOCRA, in which the UOCRA is committed to 70% of the workforce will be local and the difference may be covered with people from other provinces, and in the operational stage, it was indicated that according to the contract signed between AES and Nordex, the first two years, the Park will be operated by Nordex.

They also stated that the Project generates expectations in the local population because they have had previous experiences with major works, such as the two hydropower stations built in the area, which generated negative impacts on local services and on the workforce that was unemployed after construction of these projects finished. They hope that construction activities can be planned and coordinated with them to avoid generating negative impacts on tourist operators and on lodging and restaurant services.

They pointed out that the arrival of the first companies, Districuyo and NS Austral, has generated impacts in the locality. For lodgings and restaurants, the impact is positive since the leases signed are for several months long.

In addition, they indicated that the district is a transit destination between Rio Negro and Bariloche. Every year between June 15 and July 15, there is a peak of tourists because the July vacation (first half of July), coincides with the increase in snowfall, which causes the closure of Route N° 237 and tourists who are

stranded spend the night in Piedra del Águila. They expressed their concern about how the roadblocks will be handled and the accommodation of tourists, if most of the lodgings are occupied by staff of the companies.

They indicated that in low season, the Project will generate a great benefit to the local economy, since it will cover the vacuum generated by the low influx of tourists. In addition, it will allow to diversify the services that they offer locally. They also said they are concerned that the cabins are rented, since sport fishing is done all year round and fishermen usually rent the cabins during the days they stay in the locality.

The representatives of the municipality indicated that they will support the execution of the Project from its role as articulator. However, they asked for an adequate planning of activities so as not to affect tourist services, at least during the winter period.

Photo 5-3 Meeting with Municipality of Piedra del Águila officials



Source: ERM, field visit, May 2019

Santo Tomás Development Commission

Commission representatives have a position in favor of the Project. Just as in Piedra del Águila they see the Project as an opportunity to generate work for local inhabitants. They have also created a job bank with 20 people.

They stated that job opportunities in the town of Santo Tomás are limited, most of the population works in the Commission and in the mineral water plant located in the town. They pointed out that they have potable water that they can provide to the Project, they also have a communal lodging with eight beds that they can rent to the Project.

In addition, the local authority indicated that the local water company in Santo Tomás can provide mineral water for the construction workers.

In relation to the indigenous population, local authority pointed out that there are some communities that are quite far from the Project (more than 20 km). On the other hand, local authority stated that Santo Tomás provide social support in the form of drinking water to the nearby family using a cistern.

Photo 5-4 Meeting with Santo Tomás Development Commission officials



Source: ERM, field visit, May 2019.

The perception of the Project expressed by the household head of the nearby family is presented in the section Land Acquisition.

It is important to point out that the preliminary mapping represents the opinion of the interviewed persons at the moment of the dialogue, and it can vary depending on the attention of their expectations. It should be noted that AES needs to develop a more detailed mapping of local stakeholders as a social management planning tool.

6 INDIGENOUS PEOPLE

In Collón Curá, the *Ancatruz Mapuche* Indigenous Community⁵³ is located at a 67 km distance of the Project area, distributed in the *Zaina Yegua*, *Paso Yucón*, *Piedra Pintada* and *Sañizo* sites (*parajes*), 30 km from the Piedra del Águila urban center, composed of approximately 80 families, with an estimated population of 320 people, mostly made up of adults and elderly citizens. This Community offers tourists lodging in cabins and fishing activities.

There are two other Mapuche Indigenous Communities: *Paineo*⁵⁴ (in *El Sauce*), located at a 37 km of distance of the Project area, and *Lof Zuñiga*⁵⁵ (in *La Picasa*), located at a 71 km distance from the Project area, with 24 (estimated population 100 people) and 60-80 families (estimated population 320-360 people) respectively. These Communities are located 50 km from Santo Tomás. The main economic activity that these families develop is goat and sheep breeding. These Indigenous Communities are not considered within the Project's Area of Influence because no direct or indirect adverse impacts from the Project on these are expected.

According to the local authorities interviewed in Piedra del Águila and Santo Tomás, only the nearby family occupies the land near the Project area (the house hold head of the nearby family does not identify himself as indigenous, he identifies himself as an occupant of the land dedicated to grazing). There is no temporary or permanent presence of other families or family groups that may belong or self-identify as members of any Indigenous Communities.

It should be noted that, according to the National Institute of Indigenous Affairs (INAI-Argentina⁵⁶), the Project area is located inside the "territorial distribution" of the *Mapuche* Indigenous People⁵⁷. This means that the Project area itself is located inside a large territory which, according to the national authority on indigenous matters, holds several Indigenous Communities from the Mapuche Indigenous People. However, no specific Indigenous Community holds any property or possession over any lands in or around the Project area (except for those already mentioned: Paineo, Ancatruz, and Lof Zuñiga, located 37 km, 67 km and 71 km away from the Project, respectively).

IFC PS 7 states that "11. *Affected Communities of Indigenous Peoples may be particularly vulnerable to the loss of, alienation from or exploitation of their land and access to natural and cultural resources*" and that a Free, Prior, and Informed Consent is required when the Project generates "Impacts on Lands and Natural Resources Subject to Traditional Ownership or Under Customary Use". Project activities do not generate impacts on indigenous communities' lands or natural resources subject to a traditional property regime or under customary use, as these are located 37 km, 67 km and 71 km away from the Project, respectively. Project Area holds no Indigenous Communities that could be affected by the Project.

⁵³ See: https://datos.gob.ar/dataset/justicia-listado-comunidades-indigenas/archivo/justicia_f9b57566-3e7c-4449-b984-49a26897eb77. Indigenous Community location was confirmed by local authorities during interviews.

⁵⁴ See: https://datos.gob.ar/dataset/justicia-listado-comunidades-indigenas/archivo/justicia_f9b57566-3e7c-4449-b984-49a26897eb77. Indigenous Community location was confirmed by local authorities during interviews.

⁵⁵ See: https://datos.gob.ar/dataset/justicia-listado-comunidades-indigenas/archivo/justicia_f9b57566-3e7c-4449-b984-49a26897eb77. Indigenous Community location was confirmed by local authorities during interviews.

⁵⁶ See: <https://www.argentina.gob.ar/derechoshumanos/inai>

⁵⁷ See: <https://www.argentina.gob.ar/derechoshumanos/inai/mapa> or https://www.google.com/maps/d/viewer?mid=1ntHGKks0JZLN5K0f4QORg9xsh_c&ll=-40.199673115290615%2C-63.09439099999997&z=3

7 LAND ACQUISITION AND COMPENSATION PROCESS

This section presents a description of the legal status of the land assigned to the Project, a description of the land use context, the efforts made by ADINQN for the release of the land and the supplementary efforts made by AES to minimize the socio-economic impact on the family using the land assigned to the Project.

7.1 Administrative Easement assigned to the Project

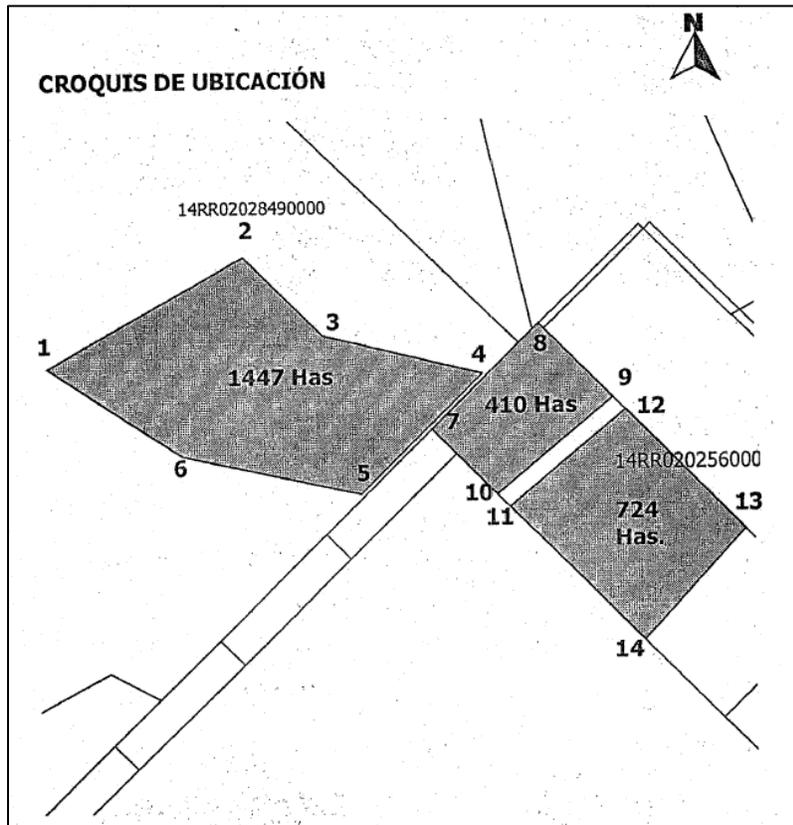
The lands where the Project is located are fiscal lands registered with a domain certificate in the name of the Neuquén Province.

Disposition N°184 S.T. /13. - Neuquén, issued on July 10, 2013, establishes:

- a legal limitation on the necessary area for the Project⁵⁸
- and an Administrative Easement, on the area identified as Bajada Colorada (Department Collón Cura, Neuquén Province), in favor of Vientos Neuquinos I S.A.; corresponding to a total area subject to measurement of 2580 ha. This area consists of Block 21, a fraction of official Blocks 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18 (Section XXIV N.C.14-RR-020-2849-0000) and a fraction of official Block 7 (Section XXIV N.C 14-RR-020-2560-0000). See Appendix E: Disposition N°184 S.T. / 13. - Neuquén.

⁵⁸ It specifies that the area assigned to the project must be of exclusive use for the Project Development.

Figure 7-1 Fiscal Lands in Administrative Easement in favor of the Vientos Neuquinos I Project



Source: Disposition N°184 S.T. /13 - Neuquén.

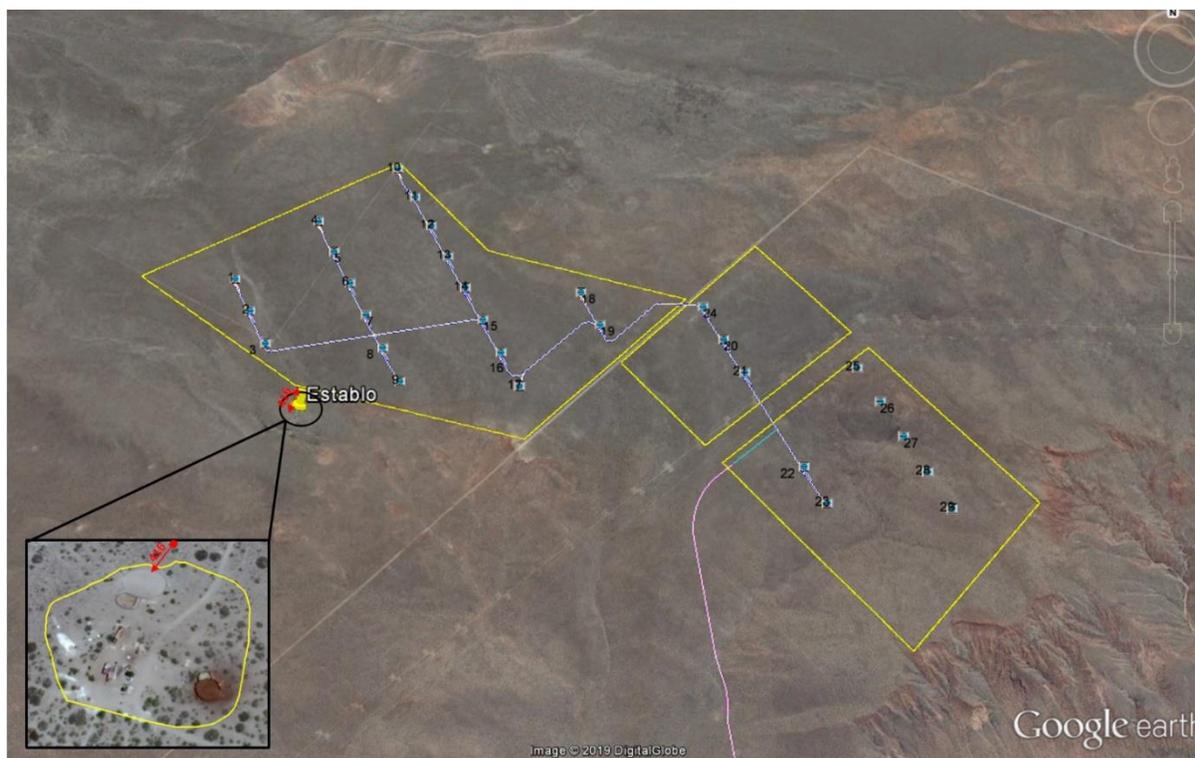
According to the land use contract signed with ADINQN, this entity is responsible for guaranteeing the use of the land assigned to the Project, free of any type of restriction.

7.2 Use of land assigned to the Project

At a distance of 416 m from the Project area, there is a house and several cattle corrals property of the nearby family, who does not hold property rights over the lands where they are located.

According to information provided by AES, the nearby family has taken steps before the Neuquén Provincial Government to obtain recognition of property rights over the entire Block 21 in their favor. For its part, the Neuquén Provincial Government conducted a survey of the land to verify occupation and activities carried out, in order to present a proposal to the household head of the nearby family that excludes the segment of Block 21 to be occupied by Project components and the access route. AES has requested the ADINQN to comply with the contract, which guarantees the use of the land free of any type of restriction.

Figure 7-2 Location of the house close to the Project area



Source: Google Earth

7.2.1 Interview with household head of nearby family

During the recognition visit to the Project area on May 30, 2019, a telephone interview was conducted by the household head of the nearby family who expressed their concern over access to land and water and recognition of potential Project impacts. This person maintains communication with AES regarding his concern and potential mitigation measures.

The nearby family has no formal rights to the land that they occupy or to the grazing areas within Block 21. Project construction activities may result in restrictions on livestock access to grazing areas and water sources. There is dependence on land for cattle grazing. Project activities may generate a temporary economic displacement for this family, which needs to be properly managed by AES.

7.2.2 Actions carried out by AES regarding the nearby family

As indicated in the previous section, Project construction activities may result in restrictions on livestock access to grazing areas and water sources and may generate a temporary economic displacement of the nearby family. The Vientos Neuquinos I team plans to temporarily restrict the movement of animals through the construction areas. However, this activity has not yet been coordinated with the referred family.

IFC PS 5 states in paragraph 28: *“the client will allow continued access to affected resources or provide access to alternative resources with equivalent livelihood-earning potential and accessibility. If*

circumstances prevent the client from providing land or similar resources as described above, alternative income earning opportunities may be provided, such as credit facilities, training, cash, or employment opportunities. Cash compensation alone, however, is frequently insufficient to restore livelihoods". And in paragraph 29: *"Transitional support should be provided as necessary to all economically displaced persons, based on a reasonable estimate of the time required to restore their income-earning capacity, production levels, and standards of living".*

Activities performed to date by the Vientos Neuquinos I team align with PS 5. To date, the following activities has been conducted:

- AES has taken note of the household head's concerns and requirements and is currently analyzing what requirements are feasible to be met in the short term. As of the closing of this report, the compensation management strategy that will be applied during construction has not been defined.
- During the recognition visit, it was evident that the Vientos Neuquinos I team maintains a fluid communication with the household head of the nearby family.
- AES is currently following up on the steps taken by the nearby family in the Neuquén Provincial Government, and maintains communication with ADINQN to learn about progress in the negotiations with the nearby family.

In addition to the activities performed, AES will implement the following activities:

- AES will conduct a survey of the areas used by the nearby family for cattle grazing and water sourcing (baseline) to identify if and how much the area is superimposed with the Project area. If this is the case, AES must either provide for the transfer of the animals of this family to an area with pastures and with water available -to mitigate resource access restriction- or to offer a sufficient compensation.
- AES will hire in the short term a local expert with experience in community relations, in order to maintain a communication and coordination channel with stakeholders and particularly with the nearby family, to minimize construction impact on grazing activity.
- During construction, AES will conduct quarterly monitoring of the nearby family's livelihoods, according to the compensation/restoration measures defined.
- In the operation stage, quarterly monitoring will be carried out during the first year to verify that livelihoods have been restored.

During operation, no restrictions are anticipated on access to grazing areas.

7.3 Right-of-way Easement

The shortest access to the Project is through National Route 237. At km 1406, a right turn allows access to the Project through a dirt road approximately 5 km long. A Right of way easement is required by Vientos Neuquinos to use this dirt road. Vientos Neuquinos I was obtained a provisional permit from landowners that expired on June 17, 2019. See Appendix F.

To date, the negotiations with owners to obtain right-of-way easement are concluded. See Appendix G: Right-of-way easement signed agreement.

It should be noted that PS 5 requirements are not triggered because the landowners are not obliged to grant the right-of-way easement.

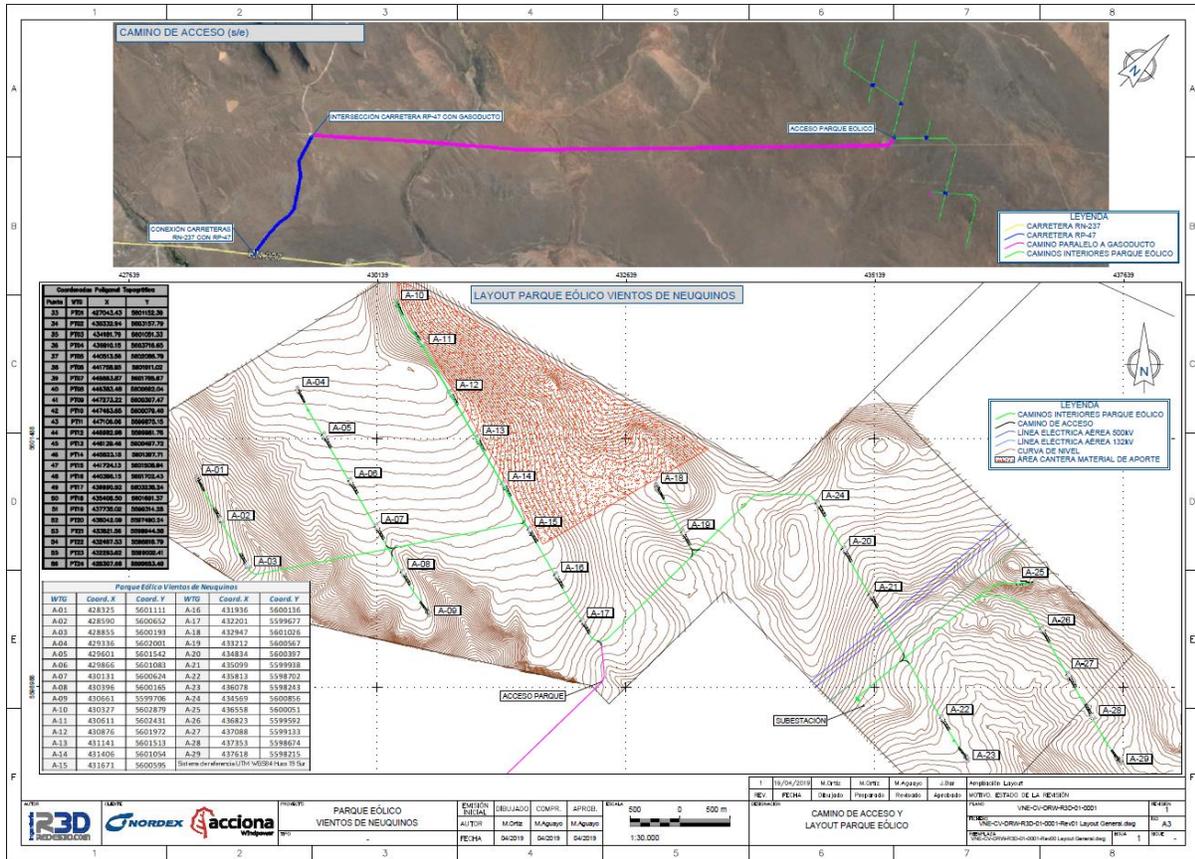
AES has two other options to access the Project area.

Vientos Neuquinos I Wind Farm Project (Neuquén, Argentina)

First option is the public access: in an interview held on May 29, 2019 with the Executive Director of ADINQN, Lic. Carlos Pereyra, and with the Coordinator of Technological Innovation Projects, Eng. Hipolito Salvatori, they stated that the ADINQN has planned Provincial Route 47 expansion in the Santo Tomás area, to provide public access to the Project. This route is planned to be operational in the next three months.

Second option is the electroduct easement: AES is authorized by EPEN to enter the Project area due to the electroduct easement during construction.

Figure 7-3 Project access through Route 237



Source: AES

8 PUBLIC CONSULTATION

According to IFC;

“Public consultation is a tool for managing two-way communication between the project sponsor and the public. Its goal is to improve decision-making and build understanding by actively involving individuals, groups and organizations with a stake in the project. This involvement will increase a project’s long-term viability and enhance its benefits to locally affected people and other stakeholders”.

Companies that start the process early and take a long-term, strategic view are, in essence, developing their local “social license to operate.” (*Doing Better Business Through Effective Public Consultation and Disclosure: Good Practice Manual*)

In accordance with articles °90 and °93 of the Neuquén Provincial Constitution and the articles °24 and °31 of Law 1875, a Public Consultation was held for the Project Vientos Neuquinos I (VNI) in September 2016 (this was managed by AES and its consultants at the time with no involvement of ERM).. As a result, the under secretariat of Environment of the Government of the Province of Neuquén issued the Notification Certification No. 204117 in the Environmental License VNI 88317 (see Annex I) on September 14, 2016.

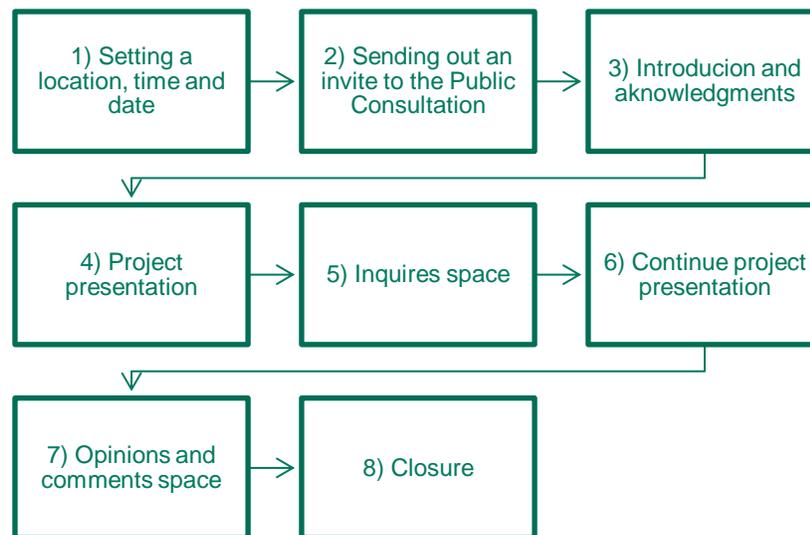
The Environmental License VNI 88317 (See Appendix B) mentions that:

- Considering third.-Notifications were issued to the provincial substantive bodies in order to inform the Vientos Neuquinos I Project, as well as request the opinion regarding the Project;
- Considered fourth. - Indicates the need for the applicant to communicate permanently, both in the construction stage and in the operational stage, with the operating companies of the Area and the Under secretariat of hydrocarbons, in such a way that activities do not decrease the risks that they could cause;
- Considering fifth.-the Company TGS S.A was considered for the project;
- Considering sixth.-The call for a Public Consultation was arranged on December 10, 2014 at 12:00 pm at the "Creo en Dios" site, located at km 1352 , National Route N°237 of the town of Picún Leufú;
- Considering seventh. - The Public Consultation was disseminated through the Official Gazette of the Province on October 17, 2014, in the newspapers of “La Mañana del Neuquén” and Río Negro on November 6, 2014.

8.1 Methodology used

The public consultation carried out by Vientos Neuquinos used a methodology that can be divided into eight (8) parts; they are showed in the diagram below and described further on.

Figure 8-1. Methodology Used



Source: ERM, 2019

Description of each step:

1. Setting a location, time and date to carry out the consultation. It was set to be on December 10, 2014 at 12:00 pm at the "Creo en Dios" site.
2. Sending out an invite to assist to Vientos Neuquinos' Project presentation. Within the assistants were governmental authorities, local authorities, company authorities, engineers and public.
3. Introducing the public consultation and acknowledging of the assistants.
4. Presenting the Project; in which was introduced the team leading the project, described the wind farm components, the way wind turbines work, as well as the way the integration process was to be carried out. Legal aspects were also mentioned in the presentation, and it was given detailed description of the project.
5. Inquiries space; the assistants had the opportunity to give their opinion or ask questions.
6. Continued project presentation; in which was described the stages of the project, mentioned the time frames and the needed resources (human and economic). In addition, the local people was invited to be part of the construction team. The Environmental Impact Assessment was explained and it was described the positive and negative impacts of the project. Finally, it was informed to the public that the project is considered as environmentally fit.
7. Opinions and comments space. The assistants shared their opinions and gave comments on the wind farm Project proposed by Vientos Neuquinos. People were supportive and gave positive feedback.
8. Closure, the consultation came to an end.

8.2 Results and conclusions

The Notification Certification No. 204117 issued by the Under secretariat of Environment of the Government of the Province of Neuquén validates the public consultation carried out by Vientos Neuquinos, since the assistants were informed about the Project, were given the chance to ask or comment any inquiry, showed support and gave positive feedback towards the Project.

Vientos Nequinos must comply with the requirements emanating from the substantive technical bodies that authorize the works related to the project, with IFC Performance Standard 1 and International Best Practices.

By carrying out the public consultation, Vientos Neuquinos established an open dialogue between the company and the public; they were able to build understanding and involve individuals in the Project and therefore increase the Project's long term viability. Therefore, the Project complies with the provisions of item 4 of Annex V of Provincial Decree No. 2656/99

The client did not share a copy of the Public Consultation report.

9 IMPACT ASSESMENT

9.1 Environmental Impacts

This section assesses how the Project will interact with physical, ecological or social elements which will lead to potential impacts to resources/ receptors.

This IA is a complement to the Environmental Impact Assessment (EIA) of the Project.

The impacts already identified in the Project's EIA are the following:

- Air quality
- surface water
- Ground water
- soil quality (includes edaphology, topography, erosion and restriction on the land use)
- biological indicators (flora and fauna)
- Landscape
- noise levels
- Cultural heritage
- Electrical and road infrastructure
- Public health and safety
- Waste generation
- Shadow flickering

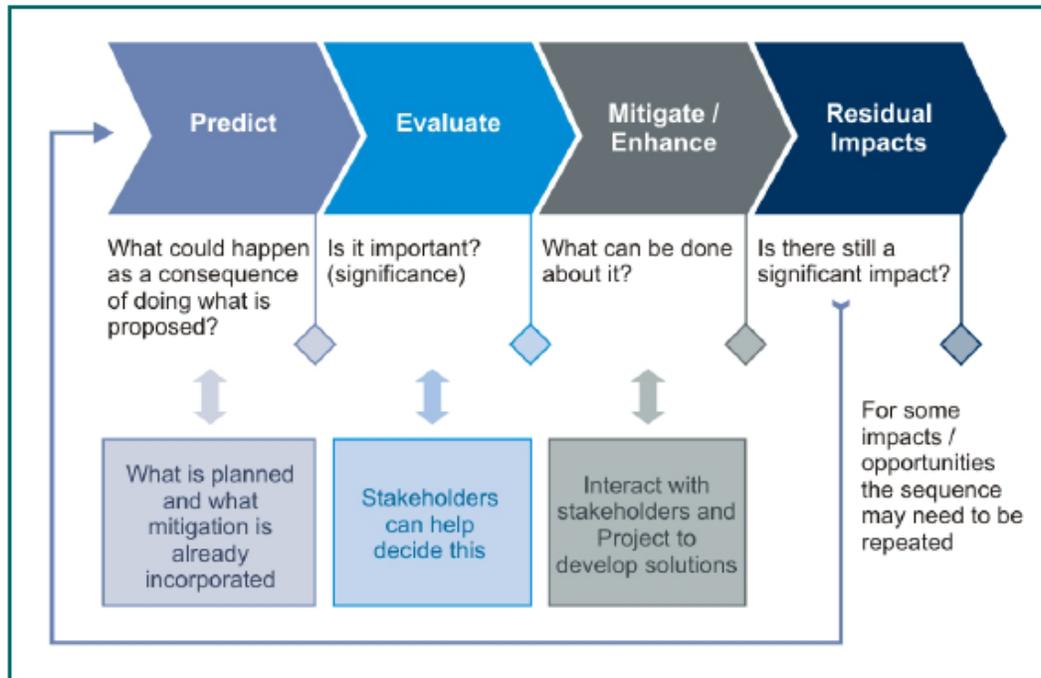
Additional impacts not identified in the EIA are assessed in this section, and also those that were already evaluated in the EIA but are considered relevant. The methodology is as follow:

9.2 Assessment Methodology

Impact identification and assessment requires the following steps:

- **Impact prediction:** to determine what could potentially happen to resources/receptors because of the projects and its associated activities.
- **Impact evaluation:** to evaluate the significance of the predicted impacts by considering their magnitude and likelihood of occurrence, and the sensitivity, value and/or importance of the affected resource/receptor.
- **Mitigation and enhancement:** to identify appropriate and justified measures to mitigate negative impacts and enhance the positive ones.
- **Residual impact evaluation:** to evaluate the significance of impacts assuming effective implementation of mitigation and enhancement measures.

Figure 9-1. Impact Assessment steps



Source: ERM, 2019

The impact assessment was carried out to determine what is likely to happen to the environment as a consequence of the Project and its associated activities.

Every impact was assigned a level of Magnitude according to its characteristics. Magnitude describes the intensity of a change that could occur in a receptor as a result of the impact. The magnitude varies on a resource/receptor-by- resource/receptor basis. The universal magnitude designations are:

- Negligible
- Small
- Medium
- Large
- Positive

Additionally, vulnerability of the impacted receptor is analyzed. There are a range of factors (physical, biological, cultural or human) with different levels such as:

Figure 9-2 Level of Vulnerability

Degree of Significance	Description
Low	Minimal areas of vulnerability; consequently with a high ability to adapt to changes brought by the Project and opportunities associated with it.
Medium	Some, but few areas of vulnerability; retaining an ability to at least in part adapt to change brought by the Project and opportunities associated with it.
High	Profound or multiple levels of vulnerability that undermine the ability to adapt to changes brought by the Project and opportunities associated with it.

Source: ERM, 2019

Once the magnitude and vulnerability is defined, then the significance of the impact is assigned. See Figure below.

Figure 9-3 Impact Significance

		Sensitivity/Vulnerability/Importance of Resource/Receptor		
		Low	Medium	High
Magnitude of Impact	Negligible	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	Large	Moderate	Major	Major

Source: ERM, 2019

The matrix applies to all resources/receptors. The following Figure provides a context of what the various impact significance ratings imply:

Figure 9-4 Context of Impact Significance

- An impact of **negligible** significance is one where a resource/receptor (including people) will essentially not be affected in any way by a particular activity or the predicted effect is deemed to be 'imperceptible' or is indistinguishable from natural background variations.
- An impact of **minor** significance is one where a resource/receptor will experience a noticeable effect, but the impact magnitude is sufficiently small (with or without mitigation) and/or the resource/receptor is of low sensitivity/ vulnerability/ importance. In either case, the magnitude should be well within applicable standards.
- An impact of **moderate** significance has an impact magnitude that is within applicable standards, but falls somewhere in the range from a threshold below which the impact is minor, up to a level that might be just short of breaching a legal limit. Clearly, to design an activity so that its effects only just avoid breaking a law and/or cause a major impact is not best practice. The emphasis for moderate impacts is therefore on demonstrating that the impact has been reduced to a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that impacts of moderate significance have to be reduced to minor, but that moderate impacts are being managed effectively and efficiently.
- An impact of **major** significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. An aim of IA is to get to a position where the Project does not have any major residual impacts, certainly not ones that would endure into the long-term or extend over a large area. However, for some aspects there may be major residual impacts after all practicable mitigation options have been exhausted (i.e. ALARP has been applied). An example might be the visual impact of a facility. It is then the function of regulators and stakeholders to weigh such negative factors against the positive ones, such as employment, in coming to a decision on the Project.

Source: ERM, 2019

Once the significance of an impact has been characterized, the next step is to evaluate what mitigation and enhancement measures are warranted.

9.3 Environmental Impacts

Environmental impacts were assessed in the original EIA and its two addendums. For this SLIP the following impacts require a detailed assessment and adequate mitigation measures (See Table below):

Table 9-1. Preliminary identification of interactions during the project development

Environmental Impacts	Ambient Noise	Biodiversity (Fauna and flora)	Landscape	Community Health and Safety	Soil	Water alteration	Transportation rout impact	Shadow Flickering
<i>On site preparation & Construction</i>								
Vegetation removal		N	N		N	N		
Soil removal and compaction	N		N		N			
Vehicle and machinery operation	N						N	
Operation electric generators	N				N	N		
Construction of permanent facilities	N	N	N		N			
Filling, leveling	N	N	N		N	N	N	
<i>Operation & Maintenance Phase</i>								
Circulation and operation of vehicles	N	N	N		N		N	
Presence of permanent installations		N	N					
Operation of wind turbines	N	N	N	N				N
<i>Abandonment/Decommissioning phase</i>								
Decommission of Wind turbine			P					P
Circulation and operation of vehicles	N	N	N	N			N	
Filling, leveling, scarification and revegetation	N	P	P	P	P	P	N	
Inadequate waste management		N			N	N		
Removal of foundations and permanent installations.		P	P		P			
Unemployment				N				

LEGEND

	Possible interaction generating significant effects		Possible interaction generating non-significant effects	P / N	Positive (P) , negative (N) or both (P/N) interactions		No probable interaction
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Note: Only interactions considered to require a deeper and more detailed assessment were considered in this table

9.3.1 Ambient Noise

Noise in a wind farm during its development is generated mainly by the operation of wind turbines. According to Henin et al (2010), noise emissions in wind turbines can have two different origins: mechanical noise and aerodynamic noise. Aerodynamic noise corresponds to the dominant part of wind generator noise at present. It is composed of wideband noise and amplitude modulation, which is mainly caused by the flow of air around the outside of the blades.

The Project will have 29 turbines with a rated capacity of 3.465 MW each. The hub height will be 120 m. Based on the available information from the estimated sound power levels, the noise generated in the direct surroundings of each wind turbine is around 55 dB(A), with lower noise emissions at a greater distance from wind turbines, dissipating up to 35 dB (A).

The noise produced by wind turbines can be especially annoying when the receiver is located near wind farms, and can produce negative health effects including difficulty falling asleep, particularly when exposed to sound pressure levels greater than 40 dB(A) (Knopper and Ollson, 2011). According to the World Health Organization (2009), sleep disturbance can occur at an average sound level at the facade at night of 40 dB and higher.

Living in areas with wind turbines is associated with an increased percentage of highly annoyed residents. Nevertheless, a common conclusion of observational and experimental studies seems to be that Amplitude Modulation appears to aggravate existing annoyance, but does not lead to annoyance in persons who benefit from or have a positive attitude towards wind turbines, which will be the case of the closest sensitive receptors to the windfarm (van Kamp and van den Berg, 2017).

The expected noise levels in the nearest sensitive receptors will be up to 40 dB(A) (Figure 11-1), therefore the significance is considered Minor; depending on the results of the noise baseline the significance of the impact may change.

According to the EIA, a noise monitoring will be carried out during the Construction stage. It was established that six samples will be taken every two months. The proposed location of the points are follows:

- A measurement in the office sector.
- A measurement in the dining room sector.
- Two measurements in the vicinity of the construction sites of the wind turbine equipment foundations.
- Two measurements near the cable trenches.

For the Operation and Maintenance stage in the EIA was established that three noise monitoring will be conducted annually, two at the base of the wind turbines and one at the transformer area.

According to the IFC (2007) noise impacts should not exceed 55 dB in residential, institutional, educational areas, so the project complies with this guideline. Although a noise-monitoring proposal was provided in the EIA, it did not describe the methodology or the equipment to be used.

The IFC (2007) recommend that a trained specialist must perform a noise monitoring and enough data should be appropriate for statistical analysis. Noise monitoring should be carried out 1.5 m above the ground and not less than three meters from any reflecting surface.

For more technical detail, conduct the noise-monitoring program in accordance with the IEC 61400-11 Wind Turbines - Part 11: Acoustic Measurement Techniques (2006) as required by the Wind Energy Environmental Health and Safety Guideline (IFC, 2015).

Fauna

Wind turbines are very noisy when active, a feature that may interfere with the lives of animals beneath them (Rabin et al., 2006). Noise levels generated may also lead to secondary effects on fauna, resulting in avoidance and displacement behaviors.

It is considered that the fauna distributed around a wind farm may be affected by interfering with some of its activities due to the noise generated by the operation of the wind turbines (Rabin et al., 2006). Noise levels generated may also lead to secondary effects on fauna, resulting in avoidance and displacement behaviors.

Mitigation measures

- Grievance procedure.
- Operating turbines in reduced noise mode.
- Curtailing turbine operations above the wind speed at which turbine noise becomes unacceptable in the project-specific circumstances.
- Regular maintenance of wind turbines.
- Design and conduct a monitoring program for the operational stage according to the IEC 61400-11 Wind Turbines – Part 11: Acoustic Measurement Techniques (2006) as required by the Wind Energy Environmental Health and Safety Guideline (IFC, 2015).

Residual impact evaluation

Based on the distance to the existing sensitive receptors and the expected attenuation of the noise with the distance the residual impact of noise generated during the operation of the windfarm is expected to be negligible over sensitive human receptors. Similarly, despite initial displacement behaviors, the habituation of fauna to persistent noise levels would result in a negligible impact in the long term, so the significance of this impact was assessed as minor.

Impact rating for noise On site preparation & Construction phase	Minor
Impact rating for noise on Operation & Maintenance Phase	Minor
Impact rating for noise on Abandonment/Decommissioning phase	Positive

9.3.2 Biodiversity (Fauna and flora)

9.3.2.1 Impact on birds

Impact description

The main negative impacts of wind farm operations on birds include collision mortality, species displacement due to habitat modification, barrier effect, and habitat loss. Collision mortality can occur not only from collisions with rotors, but also with meteorological towers, nacelles and associated structures such as support cables and transmission lines (Uribe-Rivera *et al.*, 2018).

Atienza *et al* (2008) mentions the following as direct impacts to avifauna generated by the operation of wind farms:

- Collisions. Collisions with moving blades, with the tower or with associated infrastructure, such as evacuation power lines, are direct causes of death. Rotors can cause injuries due to the turbulence they produce.
- Habitat destruction. The installation of wind turbines and associated infrastructures entails the transformation or loss of habitat, with multiple effects that can produce the loss of habitat in animal populations, including decreasing in the size of population and changes in migratory routes (Dolman and Southerland, 1995).
- Nuisance. Wind turbines produce nuisances that cause birds to avoid them and may even cause them to avoid using the entire area occupied by the wind farm. If birds are displaced from their preferred habitats

for this reason and are unable to find alternative sites, their reproductive success and survival may be reduced due to increased energy expenditure caused by the need to locate new territories.

- Barrier effect. Wind farms are a barrier to bird mobility, as they fragment the connection between feeding, breeding and other important areas for its life cycle. In addition, the movements necessary to avoid wind farms cause greater energy expenditure that can lead to a decrease in their physical condition. This type of effect can occur both in the case of a large linear wind farm and by the cumulative effect of several parks.

Indirect impacts:

The construction and operation of a wind farm involves the construction and installation of other auxiliary elements such as accesses to the National Electricity Network. These elements, in turn, can generate a series of negative impacts of their own on the environment: alteration and destruction of habitat, destruction of eggs and juvenile individuals, disturbances, electrocutions, electromagnetism, erosion, alteration of water flow, among others.

Mitigation measures

- Avoid the use of red lights to avoid attracting bird species.
- A system of flashing strobe lights or LEDs shall be used on the turbines to be visible at night. Constant light should not be used at night, as it may attract nocturnal migrants or predatory birds.
- The number of lights placed in the wind turbines should not be greater than necessary for aviation, to affect as little as possible migratory birds or nocturnal habits.
- Use of strobe white lighting in the towers (with the longest possible interval between pulses, and the pulses synchronized for all turbines within the wind farm).
- Maintain a bird mortality registry, recording all carcasses within 500 m of any project element and apply temporary shutdown, to lock the rotors in place during peak migration periods or relocation of towers if mortality is significant. Depending on the results of these monitorings, then the Project will establish a Biodiversity Management Plan in line with IFC Performance Standard 6.
- Regular checking of the vacuums or holes in the towers for nesting bird species should be practice;

Residual impact evaluation

Considering that, five protected potential species have been registered in the surroundings of the site and the implementation of the above mentioned mitigation measures, which may decrease the magnitude of the impact, the residual impacts on avifauna derived of the operation of the wind farm has been assessed to be of moderate significance.

Impact rating for avifauna on site preparation & Construction phase	Minor
Impact rating for avifauna Operation & Maintenance Phase	Moderate
Impact rating for avifauna on Abandonment/Decommissioning phase	Positive

9.3.2.2 Impact on bats

Although studies of the impact of wind turbines on wildlife have focused on birds, it has recently expanded to include bats (Arnett et al., 2008), which have higher mortality rates than birds (Camina, 2012; Strickland et al., 2011).

Bats are affected by wind turbines because their rest areas, feeding areas and migratory routes coincide with the most suitable sites for the installation of wind farms (EKOenergy, 2015).

Wind turbines damage bats primarily because the blades hit and kill bats that fly at high altitudes, so direct impacts of wind farms on bats include collision and barotrauma (damage to tissues from changes in air pressure in the vicinity of wind turbines), while indirect impacts may include habitat loss and fragmentation (BCT, 2019).

According to Laranjeiro *et al* (2018) the risk of collision, or probability of mortality due to collision of individuals crossing a wind turbine, occurs during the operational phase of a wind farm. Species that do not generally conduct avoidance behavior toward man-made structures, specifically wind turbines, run the risk of colliding with turbine blades or towers. On the other hand, displacement can be occurred and it is produced as a reduction of flight activity within the wind farm area as a result of a functional loss of habitat (May, 2015), it can also be considered as a reduction of flight activity within the wind farm area as a result of a functional loss of habitat (May, 2015). This is valid for resident species and for migratory species due to the loss of resting places. It can also result in increased energy expenditure when individuals need to modify their flight path to avoid wind farms (also known as barrier effect), which can have potential consequences for the health of the bat population (Laranjeiro *et al.*, 2018).

Bat mortality from wind turbines is caused by collision as well as barotrauma and is explained by factors other than those that cause bird collisions, mainly because bats use a different method to locate themselves in space. In general terms, the occurrence of the impact on bats can be much greater than that described for birds since the latter are often able to see the blades of wind turbines and avoid them, but not bats. Barotrauma is defined as the rapid decompression experienced by bats, due to changes in atmospheric pressure between one side of the turbine and the other, which are called vortices. Bats, being small in size, are affected at the pulmonary and cardiovascular levels. This effect is observed in animal carcasses that do not show external traumas, but internal lesions in the thoracic and abdominal cavity (González *et al.*, 2014).

Seven bat species with potential distribution in the area were considered for the Project: *Tadarida brasiliensis*, *Histiotus macrotus*, *Histiotus magellanicus*, *Histiotus montanus*, *Lasiurus varius*, *Myotis chiloensis*, *Myotis dinellii*, all included in the LC category according to IUCN. The receptor sensitivity has been assessed as low because according to records obtained from biodiversity databases; in this area few records of individuals and species of bats have been reported and the species with potential distribution are included under LC category. On the other hand, the magnitude has been evaluated as medium because there are different sources of impact on the bats to be generated during the operation of the Project and this impact will be produced in a constant way while the Project is operating.

Mitigation measures

- In addition to mitigation measures considered for birds, use of the starting speed⁵⁹ to avoid the impact of collisions and barotrauma.

Residual impact evaluation

Considering that, only seven potential species of bats have been recorded in the zone and none of them are protected and the implementation of the above mentioned mitigation measure, which may decrease the magnitude of the impact, the residual impacts on bats derived of the operation of the wind farm has been assessed to be of minor significance.

Impact rating for bats on site preparation & Construction phase	Minor
Impact rating for bats Operation & Maintenance Phase	Minor
Impact rating for bats on Abandonment/Decommissioning phase	Positive

⁵⁹ The increase of the starting speed is a mitigation measure that consists of avoiding the operation of those wind turbines considered as problematic (those that have registered mortalities) during the periods in which bats register a greater activity, which is achieved by increasing the threshold of wind speed required for the wind turbines to start operating (González *et al.*, 2014).

9.3.2.3 Impact on Vegetation

Impact Assesment and Mitigation measures for Vegetation was presented in the ESIA section 9. Identification, Description and Valoration of Environmental Impacts and section 10.1 Prevension and Impact Mitigations Measures. Measures listed are adequate to address the impact of the project. Additional measures were not considered necessary.

9.3.3 Landscape

The landscape perception is considered subjective and while one element can be obtrusive for some, it can be positive for others. The presence of wind turbines, with all of its elements and the constant rotational movement of the blades are elements that stand out in the perception of the landscape. However, as stated above the Project is developed in a flat rural zone without visual iconic elements and low population flow.

For all that, the site selected for the Project is considered as a suitable place for the development of a wind farm being sufficiently far from communities, and sensitive receptors.

Mitigation measures

- A detailed visual and landscape study must be conducted, the following must be assessed:
- Project description (wind turbine layout, wind turbines, aviation obstacle lighting, substation facility, power lines, on site access tracks)
- People's perception of wind farms.
- The view shields (zones of visual impacts).
- Planning considerations (local planning policy framework, regional planning policy framework, particular provisions).
- Landscape units within the view shield.
- Seen area analysis.
- Assessment of indicative viewpoints from publicly accessible locations.
- Impact on residential properties.
- Cumulative impact
- Night lighting assessment

Residual impact evaluation

Even once the wind turbines are decommissioned and the landscape will recover its original state, sequential and simultaneous visual impact is greatest from the main roads and highways where the development of wind farms may lead to a change in people's perception of a region and will be evident as they travel through the road network. Alternation to the perception of a landscape will occur when a visitor is able to view two or more wind farms.

Impact rating for Landscape On site preparation & Construction phase	Minor
Impact rating for Landscape (Operation & Maintenance Phase)	Moderate
Impact rating for Landscape Abandonment/Decommissioning phase	Positive

9.3.4 Soil quality

During the construction phase, the chemical features of the soil may be modified due to the potential affectation by hydrocarbon derivatives during contingencies. These contingencies could happen while carrying out the work tasks or due to the improper management of waste and sewage effluents and the subsequent discharge to the field. The physical characteristics of the soil may also be modified by the tasks of soil movement, filling, levelling, scarification and compaction. The construction of permanent facilities will involve the physical modification of specific areas of land for the period in which the wind farm find in operation. Finally, the elimination of the vegetal cover by clearing the land will be able to contribute with the increase of hydric and pluvial erosion processes that degrade the edaphic layer.

Once the wind turbines, cables and foundations of the facilities have been removed, the excavations that contained them must be filled. During the decommissioning activities, waste will be generated that could be inadequately stored and / or disposed. However, this potential negative impact will be largely compensated by the filling, leveling, scarification and revegetation with native species that will allow the restitution of the vegetal cover by the restoration of the superficial surface of the soil of the potentially affected areas.

The transit of vehicles of the construction and operation personnel of heavy and large machinery, can affect the quality of the soil due to fuel, oil or lubricant losses. Although transport and machinery will be required for a short period, this action could affect the surrounding soil, generating negative impacts if they are not immediately cleaned up.

Mitigation measures

- Adequate planning of road and drainage construction must be carried out.
- Once the wind turbines are placed, the foundations will be fixed with a concrete grout and covered with the previously extracted soil (first the non-organic one and then, if it existed, with the organic soil object of edaphic selection). The environment of each foundation should be scarified.
- Carry out periodic monitoring of sewage effluents.
- The collected soil should be covered with low density polyethylene to avoid blasting by wind.

Residual impact evaluation

With the recommended protection measures, the areas where permanent installations are not located will be restored once the construction stage has been completed. It is considered a negative and low level impact, which will be mitigated during the recomposition of the land.

For the alteration of the geomorphology a negative and low level impact is expected, which will be mitigated by a correct recomposition of the land. Appropriate mitigation measures should be taken when the works are concentrated in nearby depressed and low flood areas.

Impact rating for Soil on site preparation & Construction phase	Moderate
Impact rating for Soil Operation & Maintenance Phase	Minor
Impact rating for Soil on Abandonment/Decommissioning phase	Positive

9.3.5 Water alteration

According to the EIA, the water requirements for the projects are minimal. Use of water for cleaning equipment in the field or the setting up of concrete is not foreseen. During the operation and maintenance phase for personnel use it is estimated that each worker uses approximately 75 liters of water per day. This includes washing hands and using toilets. There will be storage of water in a plastic tank reinforced with glass fibers (10 m³ of volume). The tanks

will be supplied frequently by tank trucks coming from the nearby town of Piedra del Águila and/or Picún Leufú by companies authorized by the competent authority for the water extraction and supply service.

During the field survey, no permanent watercourses or significant runoff were observed inside the project area. Only significant runoff was observed in the sectors external to the project area. However, during the construction the alteration of the natural drainage network, the decrease of the recharge rate and alteration of the surface hydrology could be generated as negative impacts.

In case of a change in the drainage patterns of temporary watercourses (runoff) due to the inadequate construction of roads and / or the location of facilities, water erosion processes may be generated which will degrade the land. To the extent that the action of soil movement generates this phenomenon, the probability of impact on surface runoff in rainy seasons, will be enhanced. Another constructive element to consider is the trenching of wiring in the interior of the Wind Farm. If the ditches remain open for a long time to lay the underground wiring, they will constitute channels for channeling the surface runoff, modifying the drainage patterns and further favoring the processes of water erosion. Given the temporary nature of the watercourses, this potential affectation will remain in the waterbed and it is unlikely that it will reach a permanent course and / or reservoir of surface water. Finally, the chemical modification of the underground water resource could be due to the filtration to the water table of pollutants, present in solid, semi-solid and liquid wastes that are incorrectly disposed.

Mitigation measures

- Have a properly constructed Transitory Waste Management Facility.
- Train personnel in proper waste management.
- Carry out periodic monitoring of sewage effluents.
- Adequate planning should be carried out for the construction of roads and drainages to avoid the affectation of run-off and temporary and permanent accumulations.
- The rapid closing of cable laying ditches should be ensured.
- Implement a Waste Management Program.

Impact rating for Water on site preparation & Construction phase	Minor
Impact rating for Water Operation & Maintenance Phase	Minor
Impact rating for Water on Abandonment/Decommissioning phase	Minor

9.3.6 Air

Impacts on Air

Impact description

Dust in terms of Total Suspended Particles (TSP) is expected to be the main air pollutant during the construction of the Project. Particulate matter emissions will occur because of the movement of soil, and those produced by the circulation of vehicles and machinery, as well as operation of machinery and equipment, especially when the activities are carried out with windy days. Construction activities will include site formation, foundation construction, cable laying, wind turbine erection and landscaping works.

The main emissions to the atmosphere correspond to the diffuse emissions of particulate material product of:

Impacts on Air

- The movement of soil linked to the construction of areas for the collection of materials and supplies; waste management area, work platforms for cranes, wind turbine foundations, roads, ditches for wiring and drains, temporary and permanent installations for personnel.
- The circulation and operation of vehicles, machinery and equipment on internal roads and access to the project area.
- The filling, leveling and scarification of excavations of foundations, ditches, temporary roads and temporary installations.

Due the diffuse emissions of combustion gases originated from the circulation and operation of vehicles and motor generators are punctual, sporadic and diffuse nature, the impact on the air is considered minor.

During the operation of the wind turbines, minor air emissions are expected only from the transit maintenance vehicles. Vientos Neuquinos I S.A. through 29 wind turbines will prevent the generation and emission of carbon dioxide (CO₂), nitrogen oxide (NO_x), sulfur dioxide (SO₂) and particulate matter (PM), compared to what would be emitted from the generation of energy electricity through a thermal power plant, whose energy resource is natural gas, coal or oil (fossil fuels).

Considering Vientos Neuquinos will provide power to electricity system and given that the Project contributes directly to the reduction of greenhouse gas emissions and climate change, the impact during the operation phase will be positive.

Finally, during abandonment phase, the main impacts will be also generated by the circulation of vehicles and its gaseous and particulate matter emissions.

Mitigation measures

- All vehicles entering the Project Area will be in perfect maintenance conditions
- The circulation of vehicles at speeds above 20 km / h will be prohibited by placing adequate road signs on roads / accesses.
- The contractors will be required to verify the vehicle's technical specifications in order to reduce the diffuse emissions of combustion gases.
- Activities will be suspended during windy days. Covering entirely by impervious sheet or frequently watering of the on-site stockpile of excavated materials to keep wet always before backfilling;
- Frequent watering of exposed area or worksite of excavation to maintain surface wet, if necessary and practical;

Residual impact evaluation

Due the nature of the Project, which consist in the construction and operation of a Wind Farm, no residual air quality impacts would be anticipated during construction, operational and abandonment phase.

Impact rating for air affectations during construction phase	Minor
Impact rating for air affectations during operational phase	Positive
Impact rating for air affectations during abandonment	Minor

9.3.7 Shadow Flickering

Impact description

Shadow flickering is a well-known impact related with wind turbines. This impact is produced by interruption of sunlight by the turbine blades. Several factors determine the exposure to flicker as the height and the diameter of the blades, the height of the sun and the direction of the blades relative to the observer. Additionally these variables are affected by the time of year, time of year, wind direction, and geographical location (Vekuijlen and Westra, 1984).

A study made by Voicescu et al., (2016) and taken up by van Kamp and van den Berg, (2017) on the effect of shadow flicker exposure in combination with sound levels and distance, describes the annoyances and health complaints including dizziness. As shadow flicker exposure increased, the percentage of highly annoyed increased. Variables associated with the percentage highly annoyed due to shadow flicker included concern for physical safety and noise sensitivity. Reported dizziness was also found to be significantly associated with shadow flicker.

The recommended standards outlined in the Wind Energy Environmental, Health, and Safety (EHS) Guidelines, (2015), prepared by International Finance Corporation (IFC), were followed. Following is the specific language from the IFC guideline regarding the shadow flickering impact from wind turbines:

“If it is not possible to locate the wind energy facility/turbines such that neighboring receptors experience no shadow flicker effects, it is recommended that the predicted duration of shadow flicker effects experienced at a sensitive receptor not exceed 30 hours per year and 30 minutes per day on the worst affected day, based on a worst-case scenario.”

According to this IFC guideline, the predicted duration of shadow flicker should be less than 30 hours per year and be less than 30 minutes per day at all sensitive locations.

Based on modelling results, due the location of possible sensitive receptors, only one house is located within the area affected by shadow flickering. This property will have 10-30 minutes of shadow flickering per day (in compliance with the IFC limit), in the worst case scenario.

Considering these aspects, the impact is rated as minor.

Mitigation measures

- Install natural fences like shrubs or trees closer to the residential windows, this could reduce the impact of shadow flickering in the properties.
- Install a control software to shut down the blade spinning during the specific hours of shadow flickering.
- Implement a grievance mechanism to record the frequency of shadow on receptors.

Impact rating for Shadow flickering On site preparation & Construction phase	Minor
Impact rating for Shadow Flickering Operation & Maintenance Phase	Minor
Impact rating for Shadow flickering on Abandonment/Decommissioning phase	Positive

9.4 Social Impacts

Social impacts were not assessed in the original EIA and the addendum. In the table below is shown the social impact identified in the influence area of the project.

Table 9-2. Preliminary identification of interactions during the project development

Project activities / Social Impacts	Local Employment	Land and Livelihoods	Local traffic	Worker influx	Accommodations and food services	Local economy		
<i>On site preparation & Construction</i>								
Vegetation removal	P	N	N	N	N	P		
Soil removal and compaction	P	N	N	N	N	P		
Vehicle and machinery operation	P	N	N	N	N	P		
Operation electric generators	P	N	N	N	N	P		
Construction of permanent facilities	P	N	N	N	N	P		
Filling, leveling	P	N	N	N	N	P		
<i>Operation & Maintenance Phase</i>								
Circulation and operation of vehicles	P							
Presence of permanent installations	P							
Operation of wind turbines	P							
<i>Abandonment/Decommissioning phase</i>								
Decommission of Wind turbine	P	P						
Circulation and operation of vehicles	P	P						
Filling, leveling, scarification and revegetation	P	P						
Removal of foundations and permanent installations.	P	P						
Unemployment	N							

LEGEND

	Possible interaction generating significant effects		Possible interaction generating non-significant effects	P / N	Positive (P) , negative (N) or both (P/N) interactions		No probable interaction
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Note: Only interactions considered to require a deeper and more detailed assessment were considered in this table

9.4.1 Impacts on Construction Phase

9.4.1.1 Impact on Economy and Employment

<p><i>Impact description - Employment</i></p> <p>During the construction phase, the Project's EPC Contractor and Subcontractors will need to hire workers. Temporary employment during construction includes people directly employed or subcontracted by the EPC Contractor for the preparation of temporary storage areas and office facilities (pre-construction) and construction of the access roads and wind farm components (wind turbine generators, Project substation, transmission lines) – <i>direct employment</i>. It also includes jobs to supply the goods and services needed to support the construction process, including food and transport services and support staff in the construction camp – <i>indirect employment</i>. In addition, the increased income of the employees may lead to an increase in general spending on goods and services as well as potentially related job creations – <i>induced employment</i>.</p> <p>According to AES, Project EPC Contractor and Subcontractor workers during construction will peak at 300-400. According to local authorities⁶⁰, the unskilled local labor force in Piedra del Águila, Santo Tomás and Picún Leufú amounts to 170 workers total. About 230 workers are expected to come from other neighboring locations. EPC Contractor is currently coordinating the local labor provision with the local labor union (UOCRA).</p>	
<p><i>Enhancement measures</i></p> <p>During construction, maximization of local employment opportunities will be prioritized, in coordination with the local labor union (UOCRA). Apply the following measures:</p> <ul style="list-style-type: none"> ▪ EPC Contractor will develop and implement recruitment procedures, including reasonable disclosure of open positions to the local union (UOCRA) and the local authorities, to foster and prioritize local employment to the extent possible, considering unskilled, semi-skilled and skilled workforce. AES will coordinate with the EPC Subcontractors active on the Project to also foster and prioritize local employment wherever possible. AES will establish a mechanism to verify that EPC Contractor and subcontractors respect this requirements, for instance via audits. 	
<p><i>Residual impact assessment</i></p> <p>Measures defined above will enhance Positive impacts on employment. The residual impact of the Project will remain Positive (but see below, Impacts on Accommodation and Services, and Community Health, Safety and Security).</p>	
Impact Rating for Employment	Positive

9.4.1.2 Impact on Livelihoods and Land

<p><i>Impact description – Livelihoods</i></p> <p>At 416 m distance from the Project area, there is one (1) house and several cattle corrals property of a nearby family, who do not hold property rights over these lands.</p>

⁶⁰ Source: Interview with Piedra del Águila's, Picún Leufú's and Santo Tomás' local authorities.

The household head of the nearby family stated that⁶¹, in the summer, his cattle and goats keep near a local stream to drink water, and, in the winter, they would walk to the stream to drink water. The stream comes from the freshwater spring that supplies Santo Tomás. Regarding grazing, this person indicated that his cattle and goats use the area where the Project is performing activities (civil works), and that there are other areas where they can find natural pastures; however, they are further away and he fears that his animals will get lost.

The mentioned household head indicated that he is aware that the Project will build an access road cutting through the area used by his animals to go to the stream and that this concerns him because there are no other sources of drinking water in the area (only brackish water). Project works cause him uncertainty and fear because, during construction, machinery and equipment can scare his animals and they can get lost.

The nearby family has no formal rights to the land that they occupy or to the grazing areas within Block 21 (project area). However, Project construction activities may result in restrictions on livestock access to grazing areas and water sources and may generate a temporary economic displacement of the nearby family, which needs to be properly managed by AES.

The household head of the nearby family indicated that he communicates regularly with the AES team and has sent a list of requirements:

- A generator to power his home;
- Construction of a water well;
- Jobs for 4 of his family members;
- Construction of a fence to prevent the passage of animals;
- Improvement of an access (picada);
- A economic compensation.

Mitigation measures

AES has received concerns expressed by the nearby family and is currently analyzing the feasibility of the requirements in the short term. As of the closing of this report, compensation management measures have not been defined.

AES will hire in the short term a local expert with experience in community relations, in order to maintain a communication channel with stakeholders and particularly with the nearby family, to minimize construction impact on livestock activity. During operation, however, no restrictions are anticipated on access to grazing areas and water sources.

AES must conduct a survey of the areas used by the nearby family for cattle grazing and water sourcing to identify if and how much the area yuxtaposes with the Project area. If this is the case, AES must either provide for the transfer of the animals of the nearby family to an area with pastures and with water available -to mitigate resource access restriction- or to offer a sufficient economic compensation. Negotiations are currently in progress to mitigate and/or offset the impact and will soon reach an agreement.

Residual impact assessment

⁶¹ Source: Interview with house hold head of nearby family.

Impact rating accounts for residual impact after mitigation measures already defined by AES/Vientos Neuquinos, but before mitigations not already determined.	
Impact Rating for Land and Livelihoods – Project area	Moderate

<i>Impact description – Access road</i>	
<p>One alternative for Project access roads goes through the alleged property of co-owners of a rural land adjacent to the area where the Project will be built. Projected road would be 5 km long and the total area is 8.5 ha.</p>	
<i>Mitigation measures</i>	
<p>Vientos Neuquinos has approached the co-owners and requested authorization to enter the land. The co-owners have already temporarily authorized access to the Project for a two-month period starting on April 17 2019. Vientos Neuquinos has committed to negotiating a right-of-way easement with the co-owners over this period. To date, negotiations are in progress to obtain right-of-way easement for the total area of 8.5 ha. AES expects to complete negotiations before June 17, 2019. An easement agreement has already been drafted, which includes a proposed economic compensation. The easement will not result in any significant loss of livelihood or economic activity for these two land owners.</p> <p>Alternatives are available in case the easement negotiations do not reach an agreement. If the right-of-way easement negotiations are delayed or if no agreement is reached with the co-owners, AES is authorized by the Neuquén Power Provincial Entity (EPEN) to access the Project area through to the electroduct easement during the construction phase.</p> <p>The Neuquén Investment Agency (ADINQN)⁶² has stated that they have planned Provincial Route N° 47 expansion in the Santo Tomás area, to provide public access to the Project. This route is planned to be operational in the next three months. The second option for permanent access to the Project will be the extension of the Provincial Route N° 47.</p>	
<i>Residual impact assessment</i>	
<p>Land access restrictions will be compensated economically through the right-of-way easement agreement. Alternatives are available in case the easement negotiations do not reach an agreement. No residual impacts are expected.</p>	
Impact Rating for Land and livelihoods – Access road	Negligible

9.4.1.3 Impact on Local Traffic

<i>Impact description</i>
<p>Considering the presence the Project in the area, with have access to the National Route N° 237, transit may generate negative impacts to the local population. These impacts may be more acute during construction stage when the Project requires more equipment, goods and workers. Two distinct phases affecting traffic are expected, during wind turbine parts transfers. According to AES, two routes for transportation are considered. Both are connected to the Project via the National Route</p>

⁶² Source: Interview with Executive Director Lic. Carlos Pereyra and Coordinator of Technological Innovation Projects, Eng. Hipolito Salvatori

<p>N° 237. Nevertheless, if both transfers are to be done at the same time it is not defined yet. Particularly, the Picún Leufú area might be impacted.</p>	
<p><i>Mitigation measures</i></p> <p>In addition to the Traffic Management Plan to be approved by the Neuquén Traffic Authority, AES must ensure that contractors coordinate the wind turbines transfer schedules with local Municipalities to avoid risk of accidents and traffic congestion during rush hours that can affect other local activities.</p>	
<p><i>Residual impact assessment</i></p> <p>No residual impacts are expected.</p>	
<p>Impact Rating for Accommodation and Food Services</p>	<p>Negligible</p>

9.4.1.4 Impact due to Workers' Influx

<p><i>Impact description</i></p> <p>Project workers will peak at 300-400. According to interviews with local authorities⁶³, the unskilled local labor force in Piedra del Águila, Santo Tomás and Picún Leufú amounts to 170 workers total. About 230 workers are expected to come from other locations.</p> <p>According to information provided by local authorities⁶⁴, in Piedra del Águila there are around 140 beds available and 4 restaurants with a 30 people per restaurant capacity. Picún Leufú has around 50 beds available.</p> <p>AES has not development guidelines regarding Workers Influx and Workers Accommodation Monitoring and Control. According to the contract signed with Nordex – Acciona, compliance with the local regulation is the only requirement. The contract does not feature a specific appendix with obligations regarding Workers' Code of Conduct to regulate interaction with communities, and community health and safety.</p> <p>For the construction stage, the EPC contractor, Nordex – Acciona, has not implemented procedures respect to surveillance programs for contractors and subcontractor regarding several topics: accommodations, potable water, effluents and waste management, food providing, local transportation, workers code of conduct regarding host communities and workplace safety. In addition, induction and training have not included topics such as unacceptable conduct toward local community members, specifically women; and national laws and internal policies that address sexual harassment and gender-based violence.</p> <p>Although the project has a positive social impact due to the employment of local labor and the demand for local services and goods, the absence of management guidelines due to the influx of workers can generate negative social impacts, because it can lead to an increase in the prices of goods and services, greater competition for services and a feeling of marginalization among the local population. It can also lead to sex trafficking and gender-based violence.</p> <p>Close interaction with local population increases community health risks, including pregnancy and communicable diseases incidence.</p> <p><i>Mitigation measures</i></p>

⁶³ Source: Interview with Piedra del Águila's, Picún Leufú's and Santo Tomás' local authorities.

⁶⁴ Source: Interview with Piedra del Águila's, Picún Leufú's and Santo Tomás' local authorities.

AES must ensure that main contractors and subcontractors develop and enforce a Code of Conduct among workers (direct and indirect) that includes references to inappropriate behaviors while interacting with surrounding communities. In addition, induction and training must include topics such as unacceptable conduct toward local community members, specifically women; and national laws and internal policies that address sexual harassment and gender-based violence.

AES must also ensure that surveillance programs for main contractors and subcontractors are developed and implemented, regarding several topics: accommodations, potable water, effluents and waste management, food providing, local transportation, and workplace safety. In addition, AES must implement a procedure for supervising contractor and subcontractor performance.

All precedent items have to be integrated in one consolidated logistic and accommodation Plan to handle worker's influx for the Project.

This mitigation measures must be integrated in the Project Stakeholder Engagement Plan.

Residual impact assessment

Residual impacts from Workers' Influx are expected

Impact Rating for Workers' Influx

Moderate

9.4.1.5 Impact on Accommodation and Food Services

Impact description

According to AES, the Project does not plan to build a camp to accommodate and feed workers during the construction phase. Local private businesses will attend accommodation and food needs for workers. Local economy is based partially on tourism. These local businesses commonly cater to recurring tourists on the road, travelling from Neuquén to Bariloche or San Martín de los Andes, or looking to practice sport fishing in the local river (Limay). According to information provided by local authorities⁶⁵, in Piedra del Águila there are around 9 hostels with 160 beds (140 currently available) and 4 restaurants with a 30 people per restaurant capacity. Picún Leufú has around 4 hostels with 50 beds available, and Santo Tomás 1 hostel and 1 cabin with 8 beds total available.

Considering that Project workers will peak at 300-400, current accommodations are not sufficient quantitatively and might be saturated by the Project's EPC workers. Businesses will have to choose between accommodating Project workers (a stable but lower income that might disrupt local tourism-oriented economy) and tourists (a higher but less steady income that also contributes to the local economy, i.e. restaurants, tourist and fishing guides, etc.), which might impact their income.

Mitigation measures

In previous winter seasons, extreme weather conditions forced the local police to close the National Route 237 to avoid traffic accidents and protect the local population and visitors, leaving visitors stranded. Visitors (mainly tourists) in numbers greater than available accommodations, in turn, forced the local government to accommodate stranded visitors (without accommodations) in the local stadium. Since the Piedra del Águila Municipality already developed Contingency Plans in response to road-closing and accommodation-saturation scenarios, the Project should be able to collaborate with local authorities to address the issue jointly.

⁶⁵ Source: Interview with Piedra del Águila's, Picún Leufú's and Santo Tomás' local authorities.

<p>AES and NORDEX, the EPC contractor, already signed an agreement that does not feature a workers' camp. Maximizing the local labor is an alternative but will not be enough to address the issue since the local working-population is scarce and Project demand for workers will surpass the local supply. Currently the Project plans to ensure foreign workers' accommodation prioritizing closer locations, securing lodging in Piedra del Águila, Picún Leufú and Villa Chocón first. No accommodate workers further away from the Project. For instance, worker accommodation in Neuquén city would not be an option, due to the increased risk of traffic accidents and the lack of rest caused by the approximately 6 hours round trip.</p> <p>Renting local housing is an alternative; however, close interaction with local population increases community health risks, including pregnancy and communicable diseases incidence. To reduce such risks, it is important to communicate and enforce a Code of Conduct among workers (direct and indirect) that includes references to inappropriate behaviors while interacting with surrounding communities. AES will develop a procedure for supervising subcontractors that incorporates regular inspections to their accommodations.</p>	
<p><i>Residual impact assessment</i></p> <p>Residual impacts on accommodations and food services are expected.</p>	
<p>Impact Rating for Accommodation and Food Services</p>	<p>Minor</p>

9.4.2 Impacts on Operations Phase

9.4.2.1 Impact on Economy and Employment

<p><i>Impact description - Employment</i></p> <p>During the operation phase, the Project will need to hire workers. Employment during operation includes people directly employed or subcontracted by the Project for the operation of the Wind Farm – <i>direct employment</i>. It also includes jobs to supply the goods and services needed to support the operation, including food and transport services and support staff – <i>indirect employment</i>. In addition, the income of the employees may lead to an increase in general spending on goods and services as well as potentially related job creations – <i>induced employment</i>.</p> <p>Project job creation has the potential to help prevent young local population from migrating to seek job opportunities, benefiting social integration in the local communities. According to AES, Project workers during operation will amount to 15.</p>	
<p><i>Enhancement measures</i></p> <p>Impact on employment and the economy will be positive but non-significant and hence no enhancement measures are expected.</p>	
<p><i>Residual impact assessment</i></p> <p>The residual impact of the Project will remain positive but non-significant.</p>	
<p>Impact Rating for Employment</p>	<p>Positive</p>

9.4.3 Impacts on Decommissioning Phase

9.4.3.1 Impacts on Economy and Employment

In the decommissioning phase, the potential source of the impacts on economy and employment are the following:

<i>Impact description: Economy and employment</i>	
<ul style="list-style-type: none"> ■ The Project will require workforce during the Project decommissioning, which, however, is likely to be much smaller than the construction workforce is. ■ The Project decommissioning will require good and services during the decommissioning phase, in a smaller quantity than the construction or operation phase. 	
<i>Enhancement measures</i>	
Impact on employment and the economy will be positive but non-significant and hence no enhancement measures are expected.	
<i>Residual Impact evaluation</i>	
The residual impact of the Project will remain positive but non-significant	
Impact Rating for Land and Livelihoods	Positive

9.4.3.2 Impacts on Land and Livelihoods

<i>Impact description</i>	
At this stage, it is unclear if, at the end of the operational lifetime of the Project, the site will be rehabilitated and reused as an industrial facility or if the land will be sold and/or used for other purposes. This will require further discussion with the Project proponent and local authorities at the future time. Impacts from land use changes at the time of decommissioning are assessed as positive.	
<i>Enhancement measures</i>	
At the time of decommissioning, the Project proponent will conduct an assessment of possible uses for the land once the wind farm has been dismantled and site rehabilitated, in coordination with local authorities. Public use and/or benefit should be prioritized.	
<i>Residual Impact evaluation</i>	
With enhancement, the overall significance will be positive.	
Impact Rating for Land and Livelihoods	Positive

10 VISUAL IMPACT

In the EIA surrounding landscape, community input, and proximity of turbines to residential areas/properties was not considered for establishing turbine layout, size and scale.

The Project is located in a flat area with slopes below 3%, so that not being in a mountainous area greatly reduces the impact on the landscape. The existing landscape is mainly rural and slightly undulated, though with no mountains elements considered to be indicative of areas of higher visual sensitivity. Existing landscape considered of low scenic value with absence of iconic elements that could be disturbed by the presence of the wind turbines. At the same time, the Project area is located more than 18 km from the nearest community, which has small population and due to the distance to the wind farm the inhabitants of that site will not be affected in visual terms. In the same way, there are no residential areas near the wind farm only such located in the nearest human settlement, so they are not considered to be affected. The presence of 29 wind turbines will affect the visual scenario within the area through the introduction of external elements that will be seen by the observers from the nearby roads and mainly by the habitants of rural housing located in the surroundings of the project (250 m).

The landscape perception is considered subjective and while one element can be obtrusive for some, it can be positive for others. The presence of wind turbines, with all of its elements and the constant rotational movement of the blades are elements that stand out in the perception of the landscape. However, as stated above the Project is developed in a flat rural zone without visual iconic elements and low population flow.

For all that, the site selected for the Project is considered as a suitable place for the development of a wind farm being sufficiently far from communities, and sensitive receptors. As a reference of the area, a map of the socio-economical overview of the study area can be seen in the following Figure.

Figure 11.10-1 Socio-economical overview of the Study Area



Source: ERM, 2019

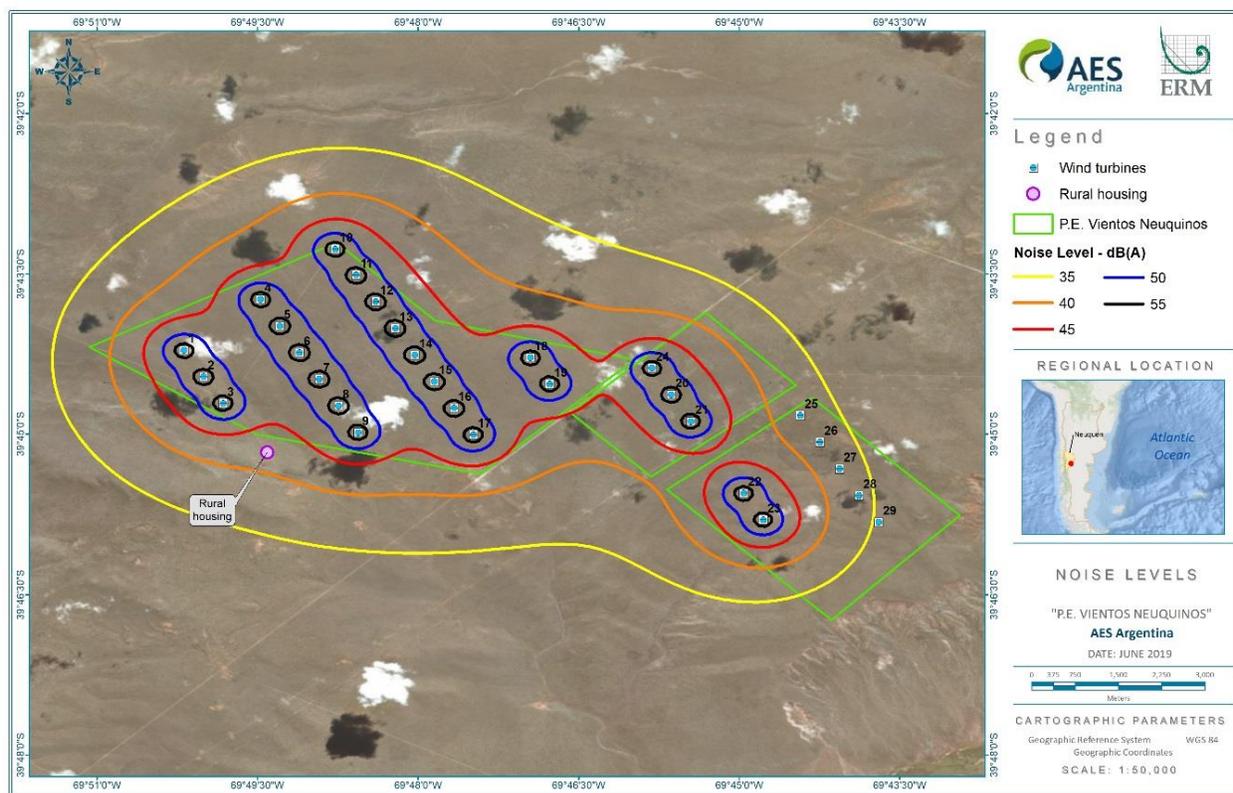
11 NOISE

According to the available information, the range of affectation based on the magnitude of the generated sounds are presented in Figure 11.1.

The nearest receptor to the wind farm is a rural housing located outside the Project area, approximately 250 m to the south, which according to the estimated sound power levels will be exposed to noise levels up to 40 dB(A).

Based on the distance to the nearest community (19 km approximately), and considering the attenuation of the sound levels from the generation point to the community, it is expected that these are not significant receptors of the noise generated by the wind farm.

Figure 11-1 Noise levels in the Project surroundings



Source: ERM, 2019

12 SHADOW FLICKERING

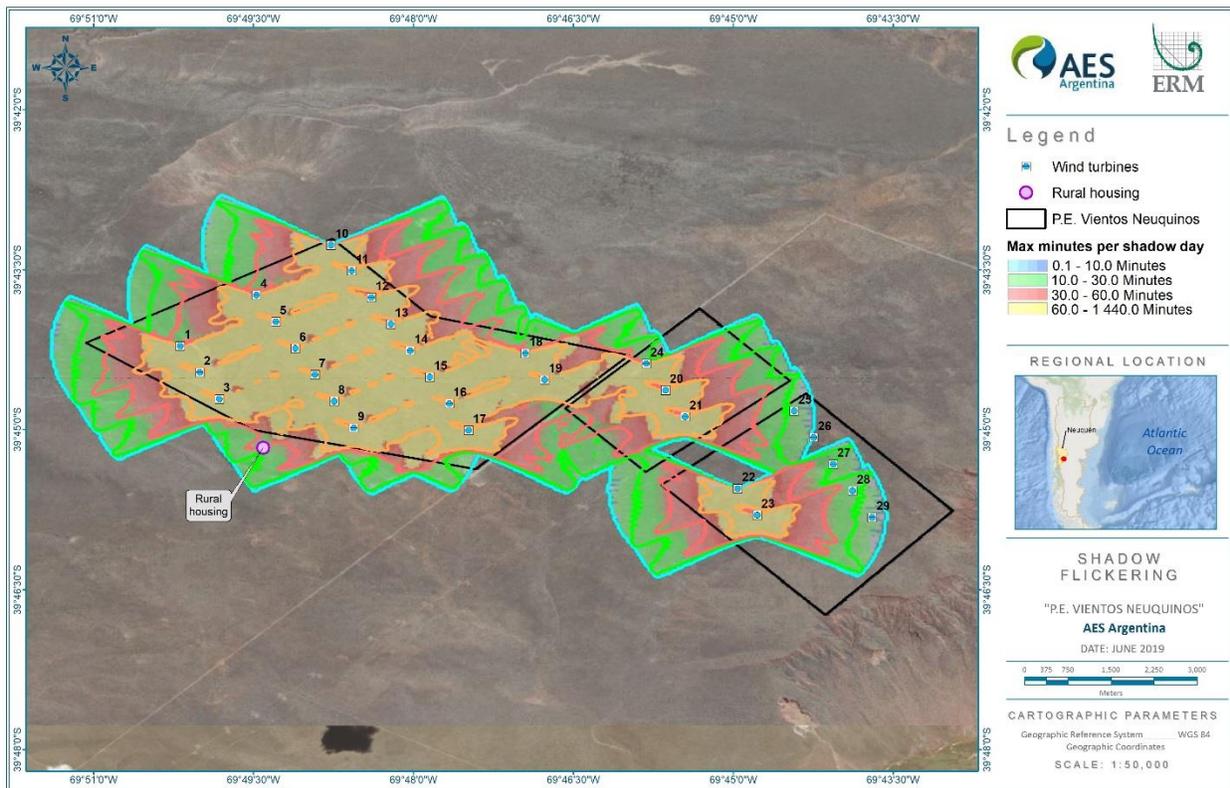
A study made by Voicescu et al., (2016) and taken up by van Kamp and van den Berg, (2017) on the effect of shadow flicker exposure in combination with sound levels and distance, describes the annoyances and health complaints including dizziness. As shadow flicker exposure increased, the percentage of highly annoyed increased. Variables associated with the percentage highly annoyed due to shadow flicker included concern for physical safety and noise sensitivity. Reported dizziness was also found to be significantly associated with shadow flicker.

The recommended standards outlined in the Wind Energy Environmental, Health, and Safety (EHS) Guidelines, (2015), prepared by International Finance Corporation (IFC), were followed. Following is the specific language from the IFC guideline regarding the shadow flickering impact from wind turbines:

“If it is not possible to locate the wind energy facility/turbines such that neighboring receptors experience no shadow flicker effects, it is recommended that the predicted duration of shadow flicker effects experienced at a sensitive receptor not exceed 30 hours per year and 30 minutes per day on the worst affected day, based on a worst-case scenario.”

According to this IFC guideline, the predicted duration of shadow flicker should be less than 30 hours per year and be less than 30 minutes per day at all sensitive locations.

Figure 12-1 Graphic representation of the Shadow flickering areas



Source: ERM, 2019

Based on modelling results, only one house is located within the area affected by shadow flickering. This property will have 10-30 minutes of shadow flickering per day (in compliance with the IFC limit), in the worst case scenario (Section 12).

13 CLIMATE CHANGE RISK ANALYSIS

13.1 Overall Approach

This analysis was performed based on data from the web-based tool *ThinkHazard!* developed by GFDRR (Global Facility for Disaster Reduction and Recovery) in partnership with the World Bank Group and various other international and national institutions active in the field of climate change research and analysis⁶⁶.

Country climate-fact-sheets developed by the KfW Development Bank and the German Climate Service Center (GERICS)⁶⁷ were also used, as these provide information about future climate change at country level based on the climate change projections presented in the 5th Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC)⁶⁸.

The area of focus of the climate change risk analysis is in the region of Collon Cura, in the province of Neuquén.

Low to high emissions scenarios as developed by the IPCC were considered to obtain the most likely levels of risk.

Level of confidence however remains medium on average given the uncertainty of climate projections for the risks considered.

13.2 Summary of Risk Assessment

13.2.1 Key Climate Change Risks Related to the Project

The main risks to the Project area, related to climate change, are likely to be:

- Floods (mainly due to changes in precipitation patterns and increased frequency of extreme weather events);
- Wildfire (increased risks of forest or bushfires due to prolonged periods of drought).

Potential change in wind patterns was also assessed as part of this analysis since this could have an impact on the productivity of the wind farm.

In this chapter, these risks are assessed for the long term (by convention, a time horizon of 2050 has been used), and are compared to the current risks.

All the abovementioned risks were estimated as low for the Project for short and long-term with the exception of wildfire risk. Wildfires at the Project location have currently a high likelihood of occurrence

⁶⁶ The Global Facility for Disaster Reduction and Recovery (GFDRR) defines itself as “a global partnership that helps developing countries better understand and reduce their vulnerability to natural hazards and climate change. GFDRR is a grant-funding mechanism, managed by the World Bank, that supports disaster risk management projects worldwide. Working on the ground with over 400 local, national, regional, and international partners, GFDRR provides knowledge, funding, and technical assistance.” (www.gfdr.org/)

⁶⁷ As per its official website presentation, “The Climate Service Center Germany (GERICS) was initiated by the German Federal Government in 2009 as a fundamental part of the German hightech-strategy for climate protection. Since June 2014, GERICS has been a scientific organizational entity of Helmholtz-Zentrum Geesthacht – Zentrum für Material- und Küstenforschung GmbH.” (www.climate-service-center.de/)

⁶⁸ As per its official website presentation: “Created in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), the objective of the IPCC is to provide governments at all levels with scientific information that they can use to develop climate policies. IPCC reports are also a key input into international climate change negotiations. The IPCC is an organization of governments that are members of the United Nations or WMO.” (www.ipcc.ch/)

which will increase on the long-term due to expected increase in temperature and variance in rainfall, added to the aridity of the region. However, the vegetation at the Project location is of relatively limited density (low-lying shrub lands typical of steppe environments). We have assumed that a wildfire on this type of vegetation would have limited potential to impact the Project facilities. Nevertheless, such a fire could threaten workers and third parties in the area. It should therefore be ensured that all processes required for appropriate response in case of fire are in place, in particular during the construction phase.

13.2.2 Risk Rating Methodology and Results

13.2.2.1 Methodology

Risks induced by climate change may have diverse impacts on the production capacity and working conditions of a wind turbine.

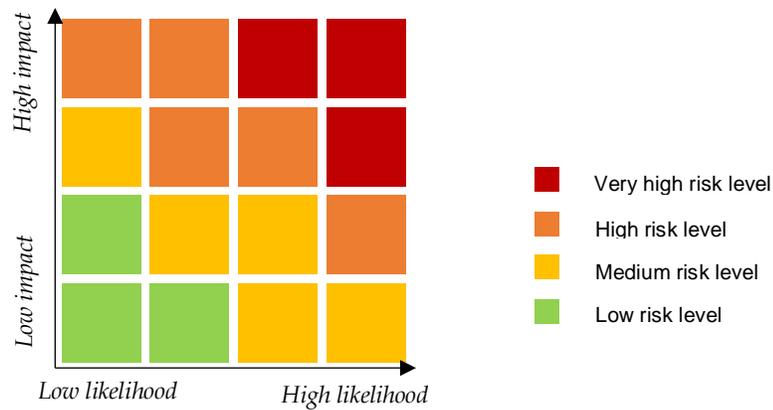
Four levels of likelihood and impact have been set based on information coming from reputable databases using combined (low, medium and high emissions) IPCC climate scenarios (See *Table 13-1*).

Table 13-1 – “Likelihood” and “impact” definition for the analysis

Likelihood	Impact
Very high likelihood: the event already occurred or is very likely to occur according to available <i>scenarios</i> , <i>ceteris paribus</i> .	Very high impact: potentially disruptive consequences on activities.
High likelihood: the event is likely to occur following the current trend.	High impact: potential significant consequences on activities and operations of the site (high operational or commercial impact).
Medium likelihood: the event may occur according to available projections, but depending on the development of other linked phenomena, that might be more or less likely to occur.	Medium impact: potential consequences on activities and operations of the site (e.g. operational impact without significant commercial impact).
Low likelihood: the event is not likely to occur according to available projections.	Low impact: low consequences on the activities and operations of the site (“business as usual”).

The overall risk level is obtained by combining the likelihood and the impact as illustrated in the risk matrix presented in Figure 13-1.

Figure 13-1 – Risk level definition according to impact and likelihood



Key Results for Vientos Neuquinos Project

For this Project, the following overall risk levels (considering likelihood and magnitude of impact) were obtained (see Table 13-2).

Table 13-2 – Level of current risk and of risk in 2050 with likelihood and impact levels

Risk	Current		2050		Current	2050
	Likelihood	Magnitude of impact	Likelihood	Magnitude of impact	Overall risk level	
Flood	Low	Medium	Low	Medium	Low	Low
Wildfire	High	Low	Very high	Low	Medium	Medium
Change in wind patterns	-	-	Low	Medium	-	Low

The following sections provide a more in-depth discussion of likelihood and impact for each risk.

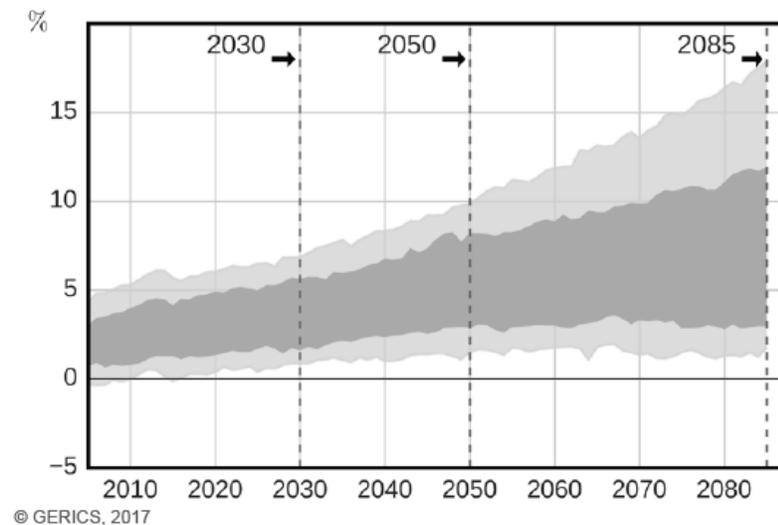
13.3 Topic-by-Topic Assessment

13.3.1 Floods

13.3.1.1 Heavy Rains

Heavy rain events are expected to increase from +3% to +8% in intensity by 2050 (likely range considering all model simulations from IPCC AR5) compared to the reference period from 1971 to 2000 (see Figure 13-3)

Figure 13-3 – Projection of possible development of heavy rains intensity



**Dark grey: likely range (central 66%)*

Light grey: very likely range (central 90%)

The frequency of heavy rainfall is expected to increase by 12% by 2050 compared to the reference period from 1971 to 2000⁶⁹. This increase in intensity and frequency of heavy rainfalls will have little effect on the flood likelihood.

River Flood

The likelihood of river floods in the region of Collon Cura is classified as low⁷⁰. In addition, the Project is located between 600 and 650 m above sea level while the nearest river (Río Limay) is located at 425 m above sea level and distant of 9 km from the Project location.

The access route is however located at 4 km from the river and at 430 m above sea level, which makes it more exposed to a river flood that would potentially cause access disruption. However, the hydroelectric dam located approximately 26 km upstream could regulate the streamflow of the river and reduce the river flood likelihood, which would still be considered low for the Project.

In central Argentina, model projections are inconsistent in changes in rainfall. The present likelihood is projected to increase in the long term due to the effects of climate change but remains low.

Combining the two previous flood causes (i.e. heavy rains and river flood), the flood **likelihood** is assessed to be **low** for **both short and long-term** due to non-proximity to river and a limited change in rain patterns.

The **magnitude of impact** can be considered as **medium**. Indeed, wind farms are not very sensitive to flood in general, but the electrical grid infrastructure might be affected, potentially causing electrical disruption.

The **flood overall risk level** is **currently low** and projected to **stay low** in the **long-term** (2050) due to the low likelihood in the area of the Project and a medium impact.

⁶⁹ From Climate-Fact-Sheets, Updated Version 2015; Argentina; Helmholtz-Zentrum Geesthacht Zentrum für Material-und Küstenforschung GmbH, GERICS, May 2018

⁷⁰ <http://thinkhazard.org/en/report/4740-argentina-neuquen-collon-cura/FL>

13.3.1.2 Wildfire

In extreme fire weather events, elevated temperatures combined with strong winds and wind born debris may weaken the integrity of infrastructure.

The **likelihood** of wildfires occurring in the Project area is **currently** classified as **high**. This means that there is 50% likelihood occurrence every year of a weather propitious to significant wildfire.

Future climate projections suggest a likely increase in daily temperatures and greater variability in rainfall. This is likely to increase the frequency of occurrence in the region of weathers propitious to fires. In areas already affected by wildfire hazard, the fire season is likely to increase in duration, and include a greater number of fire events. Climate projections also indicate that there could also be an increase in the severity of fire⁷¹. Wildfire **likelihood** is therefore classified as **very high** on the **long-term**.

According to satellite views and data collected on site, the Project area is mainly composed of shrub lands with a low density of vegetation which would reduce the **magnitude of impact** to a **low** level in case of potential fire.

Both **current** and **long-term (2050) wildfire overall risk level** can be considered as **medium** although the likelihood is already high and will increase with climate change.

13.3.1.3 Change in Wind Patterns

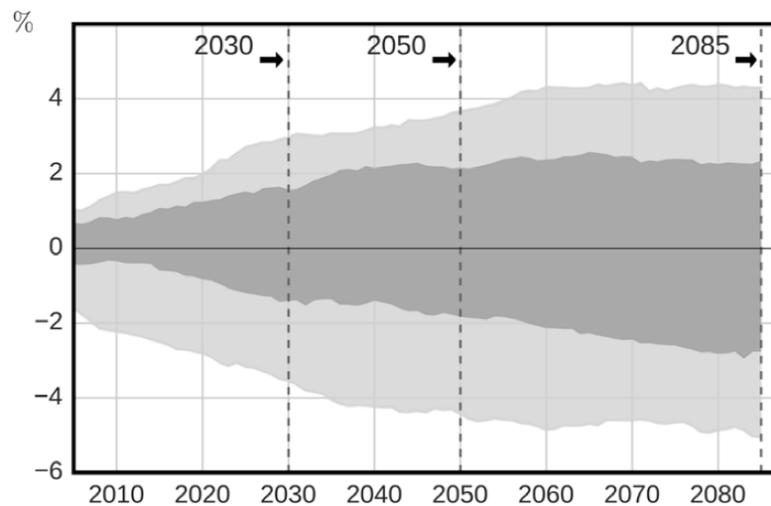
A significant increase or reduction of the annual average wind speed can directly impact the productivity of the plant since current wind turbines operate within a defined range of wind speed (up to 25 m/s for the turbine AW132/3300 used for the Project). **Impact** is assessed as **medium** for the Project and its commercial model.

The likely range of projected change in annual mean wind speed indicates almost no change by 2050 compared to reference period from 1971 to 2000⁷². The very likely range is from -4 to +4% (see *Figure 13-4*). Confidence in these figures is medium. The **change in annual mean wind speed** can therefore be considered to be **low**.

⁷¹ <http://thinkhazard.org/en/report/4740-argentina-neuquen-collon-cura/WF>

⁷² From Climate-Fact-Sheets, Updated Version 2015; Argentina; Helmholtz-Zentrum Geesthacht Zentrum für Material-und Küstenforschung GmbH, GERICS, May 2018

Figure 13-4 – Projection of possible development of wind speed



© GERICS, 2017

*Dark grey: likely range (central 66%)

Light grey: very likely range (central 90%)

Change in wind speed regularity and wind speed extreme values might also have an impact on the productivity of the wind turbine. However, no further information was available to draw conclusions on impact on productivity.

Potential impacts on the wind farm's productivity have been identified but no significant changes (inferior to 4%) are expected in the annual average wind speed. **Long-term change in the wind speed overall risk level** can be considered as **low** at country level.

13.4 Mitigation Measures Proposed

No high risk was identified for the wind turbines through this climate change risk assessment.

This is largely related to the fact the Project is not located in an area with high natural hazards exposure such as floods and given wind turbines are generally engineered to be resilient to physical risks.

The wildfire risk is the only risk classified as medium overall. It's very high likelihood is due to expected increase in temperature and variance in rainfall, added to the aridity of the region. However, the vegetation at the location of the plant is relatively low in density and composed of shrub lands. We have assumed that a wildfire on this type of vegetation would not seriously threaten the Project installations themselves. Nevertheless, such a fire could threaten workers and third parties in the area. It should therefore be ensured that all processes required for appropriate response in case of fire are in place, in particular during the construction phase.

14 BIODIVERSITY (CRITICAL HABITAT SCREENING AND PRELIMINARY ASSESSMENT)

14.1 Definition of Critical Habitat

The term «critical habitat» is defined in Paragraph 16 of IFC Performance Standard 6, 2012 (PS6) as areas with high biodiversity value. This includes areas that meet one or more of the following criteria (Guidance Note [GN] 53):

- Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species;
- Criterion 2: Endemic and/or restricted-range species;
- Criterion 3: Migratory and/or congregator species;
- Criterion 4: Highly threatened and/or unique ecosystems; and
- Criterion 5: Key evolutionary processes.

In addition, as specified by paragraph GN54 of IFC/WB Guidance Note 6, the determination of critical habitat can include other recognized high biodiversity values which are to be evaluated on a case-by-case basis. Paragraph GN54 provides the following two examples:

- Areas that meet the criteria of the IUCN's Protected Area Categories Ia, Ib and II.
- Key Biodiversity Areas (KBAs), which encompass Important Bird and Biodiversity Areas (IBAs), and meet the criteria and thresholds described in paragraphs GN70-GN83.

14.1.1 Gradient of Critical Habitat

IFC Guidance Notes GN70 through GN83 detail critical habitat criteria and thresholds, based on relative vulnerability (degree of threat) and irreplaceability (rarity or uniqueness). For Criteria 1 to 4, quantitative thresholds are provided to assign critical habitat.

Table 14-1 details the relevant thresholds. Criteria 1 through 3 are focused on species level, whilst Criteria 4 and 5 focus on ecosystem and landscape levels.

These thresholds rely on the availability of estimates of species global/local population (either from published sources or obtainable by reasonable means through an in-field assessment in the case of the local population). Should this type of information not be available for any of the species under consideration, the Project proponent is expected to use expert opinion to determine the significance of the unit of analysis for critical habitat (CH) determination with respect to the global population. Surrogates of population size (e.g., extent of occurrence, estimates of total area of known sites, estimates of area of occupied habitat) can aid in this process.

Table 14-1 Description and thresholds for Critical Habitat Criteria.

Criteria		Description	Threshold(s)
Criterion 1	Critically Endangered (CR)/ Endangered (EN) Species	<p>Species threatened with global extinction and listed as CR and EN on the IUCN Red List of Threatened Species shall be considered as part of Criterion 1. Critically Endangered species face an extremely high risk of extinction in the wild. Endangered species face a very high risk of extinction in the wild.</p> <p>The inclusion of species in Criterion 1 that are listed nationally/regionally as CR or EN in countries that have adhered to IUCN guidance, shall be determined on a project-by-project basis in consultation with competent professionals.</p>	<p>(a) Areas that support globally-important concentrations of an IUCN Red-listed EN or CR species (> 0.5% of the global population AND > 5 reproductive units of a CR or EN species).</p> <p>(b) Areas that support globally-important concentrations of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of the IUCN Red List status to EN or CR and meet the thresholds in Criterion 1.</p> <p>(c) As appropriate, areas containing important concentrations of a nationally or regionally-listed EN or CR species.</p>
Criterion 2	Endemic/ Restricted Range Species	<p>For purposes of this Guidance Note, the term endemic is defined as restricted-range. Restricted range refers to a limited extent of occurrence (EEO). For terrestrial vertebrates and plants, a restricted-range species is defined as those species that have an EEO less than 50,000 square kilometers (km²).</p>	<p>Areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species.</p>
Criterion 3	Migratory/ Species Congregatory	<p>Migratory species are defined as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem).</p> <p>Congregatory species are defined as species whose individuals gather in large groups on a cyclical or otherwise regular and/or predictable basis.</p>	<p>(a) Areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle.</p> <p>(b) Areas that predictably support ≥10 percent of the global population of a species during periods of environmental stress.</p>
Criterion 4	Highly Threatened or Unique Ecosystems	<p>The IUCN is developing a Red List of Ecosystems, following an approach similar to the Red List for Threatened Species. The client should use the Red List of Ecosystems where formal IUCN assessments have been performed. Where formal IUCN</p>	<p>a) Areas representing ≥5% of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN.</p>

Criteria	Description	Threshold(s)
	<p>assessments have not been performed, the client may use assessments using systematic methods at the national/regional level, carried out by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally-recognized NGOs).</p>	<p>b) Other areas, not yet assessed by IUCN, but determined to be of high priority for conservation by regional or national systematic conservation planning.</p>
<p>Criterion 5</p>	<p>Key Evolutionary Processes</p> <p>Evolutionary processes are often strongly influenced by structural attributes of a region, such as its topography, geology, soil and climate over a period of time.</p> <p>Guidance Note GN96 provides the following examples of spatial features that are associated with evolutionary processes:</p> <ul style="list-style-type: none"> ■ • Level of isolation (e.g., islands, mountaintops, lakes are associated with populations that are phylogenetically distinct); ■ • Extent of endemism (areas of high endemism often contain flora and/or fauna with unique evolutionary histories); ■ • Spatial heterogeneity; ■ • Presence of environmental gradients (ecotones produce transitional habitat which has been associated with the process of speciation and high species and genetic diversity); ■ • Edaphic interfaces; and Connectivity between habitats (e.g. biological corridors). 	<p>Criterion 5 is usually considered to be heavily reliant on scientific knowledge, and thus would be triggered in areas that have already been investigated or where significant research results are available to indicate the potential or existence of unique evolutionary processes.</p>

Source: IFC/WB (Guidance Note PS6), 2019.

14.2 Critical Habitat Methodology

The following section outlines the basic steps in defining the biodiversity features within an *ecologically appropriate area of analysis (EAAA)* that have the potential to trigger critical habitat status.

The IFC PS6 recognizes critical habitats to be based on either modified or natural habitats. The process of recognizing critical habitats therefore follows an approach that can be summarized in three key steps (*Paragraph 60, GN6; IFC 2019*).

1. Stakeholder Consultation and Initial Literature Review.
2. Field Data Collection and Verification of Available Information
3. Critical Habitat Determination.

GN63. Based on the broad pool of data obtained as part of Steps 1 and 2, biodiversity values should be screened using critical habitat criteria and thresholds (paragraphs GN70–83 in this note) at an appropriate ecological scale, as defined in GN59.

GN59. The project should identify an ecologically appropriate area of analysis to determine the presence of critical habitat for each species with regular occurrence in the project's area of influence, or ecosystem, covered by Criteria 1-4. The client should define the boundaries of this area taking into account the distribution of species or ecosystems (within and sometimes extending beyond the project's area of influence) and the ecological patterns, processes, features, and functions that are necessary for maintaining them. These boundaries may include catchments, large rivers, or geological features. The client will use this area of analysis to assess applicability of the critical habitat criteria and thresholds (see paragraphs GN70–GN83 of this note) in order to determine critical habitat for the species and/or ecosystems concerned.

The *ecologically appropriate area for analysis* determined for the Project is described in section 14.2.2 of this assessment.

GN64. By carrying out these steps, the client should be in a position to determine if the project is located in a critical habitat based on identified high biodiversity values. *This determination is independent of the project type, impacts or its mitigation strategy.*

GN65. Where estimates of species' global population and/or local population are not available (or not obtainable by reasonable means through a field assessment in the case of the local population), the client is expected to use expert opinion to determine the significance of the potential critical habitat with respect to the global population. Surrogates of population size (for example, extent of occurrence, estimates of total area of known sites, estimates of area of occupied habitat) will be essential in this decision-making. This statement applies to Criteria 1 through 3.

14.2.2 Ecologically Appropriate Area for Analysis (EAAA)

The area surrounding the Vientos Neuquinos project is mainly a homogeneous area. The only hydrological element that disrupts this homogeneity is the Río Negro River, that flows approximately at 10km from the project area. The Río Negro river cannot be considered as a hydrology delimitation because it does not represent a natural barrier for bird and bat species – the most affected by wind energy projects – that occur within the surroundings of the project. Besides this element, the projects surroundings' homogeneity suggests few variations in flora and faunal occurrences within them. A 50 km buffer was considered as an ecologically appropriate area for analysis (EAAA), obtained from the initial screening using the Integrated Biodiversity Assessment Tool (IBAT⁷³), which was the buffer that the system used to build the probable

occurrence list of species presented on the biotic baseline on previous section. The homogeneity of the area suggests that species composition within it has few variations, which makes the 50 km buffer adequate and appropriate to evaluate species occurrences for the initial screening. Regarding the species composition variation caused by the Río Negro river, the extension of the river that flows within the EAAA (approximately 100 km), was considered sufficient to evaluate species occurrences along the river for the initial screening. In the Figure 14-1 the 50 km buffer used as an ecologically appropriate area for analysis is presented.

Figure 14-1. Ecologically appropriate area for analysis. Generated under license number 1071-2304 held by Environmental Resources Management



14.2.3 Criterion 1: Critically Endangered and/or Endangered Species

Footnote 11 of the IFC's Performance Standard 6 (2018) defines Critically Endangered and/or Endangered Species as species either:

- Listed nationally/regionally as critically endangered or endangered, in countries that have adhered to IUCN guidance, the critical habitat determination will be made on a project by project basis, in consultation with competent professionals.
- In instances where nationally or regionally listed species' categorizations do not correspond well to those of the IUCN (e.g., some countries more generally list species as "protected" or "restricted"), an assessment will be conducted to determine the rationale and purpose of the listing. In this case, the critical habitat determination will be based on such an assessment.

- Critically Endangered and Endangered species that have the potential to be present within the Project Area have been identified. This has been completed with reference to the IUCN Red List.

14.2.4 Criterion 2: Endemic and/or Restricted Range Species

Quoting the text of the IFC PS 6 Guidance Note:

GN74. For purposes of this Guidance Note, the term endemic is defined as restricted-range. Restricted range refers to a limited extent of occurrence (EEO). (IFC PS6 Guidance Notes)

- For terrestrial vertebrates and plants, a restricted-range species is defined as those species that have an EEO less than 50,000 square kilometers (km²). (IFC PS6 Guidance Notes)

14.2.5 Criterion 3: Migratory and Congregatory Species

GN76. Migratory species are defined as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem).

GN77. Congregatory species are defined as species whose individuals gather in large groups on a cyclical or otherwise regular and/or predictable basis. (IFC PS6 Guidance Notes) Examples include the following:

- Species that form colonies.
- Species that form colonies for breeding purposes and/or where large numbers of individuals of a species gather at the same time for non-breeding purposes (for example, foraging and roosting).
- Species that utilize a bottleneck site where significant numbers of individuals of a species occur in a concentrated period of time (for example, for migration).
- Species with large but clumped distributions where a large number of individuals may be concentrated in a single or a few sites while the rest of the species is largely dispersed (for example, wildebeest distributions).
- Source populations where certain sites hold populations of species that make an inordinate contribution to recruitment of the species elsewhere (especially important for marine species).

14.2.6 Criterion 4: Highly Threatened and/or Unique Ecosystems

GN79. The IUCN is developing a Red List of Ecosystems, following an approach similar to the Red List for Threatened Species. The client should use the Red List of Ecosystems where formal IUCN assessments have been performed [...] (IFC PS6 Guidance Notes).

14.2.7 Criterion 5: Key Evolutionary Processes

GN81. The structural attributes of a region, such as its topography, geology, soil, temperature, and vegetation, and combinations of these variables, can influence the evolutionary processes that give rise to regional configurations of species and ecological properties. In some cases, spatial features that are unique or idiosyncratic of the landscape have been associated with genetically unique populations or subpopulations of plant and animal species. Physical or spatial features have been described as surrogates or spatial catalysts for evolutionary and ecological processes, and such features are often associated with species diversification [...] (IFC PS6 Guidance Notes)

For the purposes of this assessment, the Project Area has been screened against the following factors:

- Level of isolation (e.g., islands, mountaintops, lakes are associated with populations that are phylogenetically distinct)

- Extent of endemism (areas of high endemism often contain flora and/or fauna with unique evolutionary histories)
- Spatial heterogeneity
- Presence of environmental gradients (ecotones produce transitional habitats which have been associated with the process of speciation and high species and genetic diversity)
- Edaphic interphases
- Connectivity between habitats (e.g., biological corridors).

14.3 Critical Habitat Determination

14.3.1 Criterion 1

Three potentially distributed species are classified in the IUCN Redlist as Endangered globally; these species are shown in Table 14-2. Additionally, the Andean Condor (*Vultur gryphus*) is considered a species of high importance locally

Table 14-2 Species with a moderate/high probability of occurrence within the EAAA that have an Endangered/Critically Endangered status on the IUCN Red list.

Species	Scientific Name	Status IUCN	Habitat	Population Tend.	Principal threats
Southern river otter	<i>Lontra provocax</i>	Endangered (EN)	Terrestrial, Freshwater (Inland waters), Marine.	Decreasing	Habitat loss, poaching, predation by free-ranging domestic dogs, and transmission of diseases.
Zapala frog	<i>Atelognathus praebasalticus</i>	Endangered (EN)	Shrub land, Grassland, Wetlands (inland).	Decreasing	Livestock farming & ranching, invasive non-native/alien species/diseases.
Moscardon	<i>Bombus dahlbomii</i>	Endangered (EN)	Forest, Wetlands (inland), Shrub land, Artificial/Terrestrial	Decreasing	Residential & commercial development, Agriculture & aquaculture, Human intrusions & disturbance, etc.

Other relevant status species:

Andean condor	<i>Vultur gryphus</i>	Near Threatened (NT) but also considered	Desert, Grassland, Shrub land, Marine Intertidal	Decreasing	Hunting & trapping terrestrial animals. Wind Energy projects are considered a potential threat ⁷⁵
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⁷⁵ Palmer, R., Gordon, C., & Petracci, P (2017). Interacciones entre la Fauna Silvestre y la Energía Eólica en Argentina: Conocimiento Científico y Prioridades para el Futuro.

Species	Scientific Name	Status IUCN	Habitat	Population Tend.	Principal threats
		high priority species ⁷⁴			

Southern river otter (*Lontra provocax*)

The southern river otter is associated to a variety of well-preserved wetlands with abundant vegetation like de Andean lakes, rivers, ponds and estuaries. Otters in the Northern distribution range inhabit inland waters while in the south, they occur in marine habitats. Literature suggests that the species presents a solitary behavior and an average home range of 11.3 km, which can overlap with individuals of the same sex.

Classified as Endangered globally under the IUCN Redlist, this otter is very sensitive to human activities; it became locally extinct in lakes with a high level of urbanization and tourism and subpopulations with lowland distribution have been affected by activities with a high demand of water that alter watercourses and cause riparian vegetation loss such as agriculture and human use. The impact of hydroelectric dams installed along within its distribution range in the species subpopulations has not been evaluated. Other threats that have been identified are poaching, predation by free-ranging domestic dogs and diseases transmission. The Projects do not affect lakes, rivers, ponds and estuaries, so there is no perceived risk that the presence of this species in the Project's EAAA could trigger Criterion 1.

Zapala frog (*Atelognathus praebasalticus*)

The Zapala Frog is an endemic species to the northwestern Argentinean Patagonia in the Neuquén Province. Its occurrence is limited to three to five threat-defined locations in the Province, with an estimated extent of occurrence (EOO) of 3,763 km². It is associated with steppe and semi-deserted landscapes and lives under stones and in humid ravines that surround the lagoons where it is presumed to breed. Its elevation range goes from 1,000 to 1,500 m, and does not inhabit modified habitats.

The area of interest is located on an area with plains and slight changes in topography and with altitudes between 550 m and 650 m above sea level, so there is no perceived risk that the presence of this species in the Project's EAAA could trigger Criterion 1, as it is not found in the altitude where the Project is found.

Moscardon (*Bombus dahlbomii*)

In Argentina, the genus *Bombus* is represented by eight Neotropical species; one of them being *B. dahlbomii*. The distribution of these bees is wide, with this particular species reaching Tierra del Fuego, at the southernmost point of South America, It is the typical species found in Patagonia, extending from the western foothills of the Andes towards the coastal region to the east, being most abundant in the former. Toward the north, it reaches the province of Mendoza, and penetrates to the East within the province of Buenos Aires; towards the south, it extends to the Strait of Magellan and most likely reaches Tierra del Fuego, being the only species that occupies the southern Patagonian sector. It is distributed in the provinces of Buenos Aires, Chubut, Mendoza, Neuquén, Río Negro and Santa Cruz, registering its greatest abundance in Neuquén, Chubut and Santa Cruz.

Classified as Endangered globally under the IUCN Redlist, being of "great abundance" in Neuquén according to cited literature, its presence should be confirmed or discarded during the oncoming field monitoring activities and its population estimated.

⁷⁴ Palmer, R., Gordon, C., & Petracci, P (2017). Interacciones entre la Fauna Silvestre y la Energía Eólica en Argentina: Conocimiento Científico y Prioridades para el Futuro.

Andean condor (*Vultur gryphus*)

Vultur gryphus occurs throughout the Andes, in Venezuela, Colombia, Ecuador, Peru, Bolivia, Paraguay south to Argentina and Chile (Houston 1994). It is found principally over open grassland and alpine regions up to 5,000 m, descending to lowland desert regions in Chile and Peru, and over southern-beech forests in Patagonia.

This species has a moderately small global population which is suspected to be declining moderately rapidly owing to persecution by man. It is consequently classified as Near Threatened. It is threatened mostly in the north of its range, and is exceedingly rare in Venezuela and Colombia, where a re-introduction program using captive-bred individuals is in operation. A similar project is under way in Argentina.

Is clearly adapted for exceptionally low mortality and reproductive output, and is therefore highly vulnerable to human persecution, which persists in parts of its range owing to alleged attacks on livestock. Increased tourism in parts of Chile and Argentina may have led to a reduction in persecution by demonstrating the ecotourism value of the species. In Argentina Condors are highly dependent on the carcasses of exotic herbivores, which form 98.5% of their diet, making them vulnerable to changes in livestock raising. Interspecific competition for carcasses with Black Vultures *Coragyps atratus*, which have recently begun to occupy the same areas, may have a deleterious effect on Andean Condor populations. It is considered a high priority potentially vulnerable species towards wind energy projects (Palmer et al. 2017).

The presence of the Moscardon (*Bombus dahlbomii*) and the Southern river otter (*Lontra provocax*) could trigger PS6's Critical Habitat status, but their presence must be confirmed first during the oncoming on-site wildlife monitoring surveys, and their abundance should be estimated to represent at least 0.5% of the global population in order to trigger PS6's Critical Habitat, but is highly unlikely as their Estimated Area of occupancy (AAE) is largely extended and the EAAA is not representative enough.

14.3.2 Criterion 2

The species identified in the EIA and additional bibliographical baseline, as well as the ones identified in this study have been screened to identify the ones range-restricted. Only two potentially distributed species meet the criteria of restricted range species set by IFC of an EOO less than 50,000 square kilometers (km²).

Monttea aphylla

Matasebo is a characteristic species of the Monte Province, from Salta to Chubut. It grows on rocky soils in the foothills of the mountains up to the Andes mountain range and in isolated outcrops in jarillal areas. There is lack of information about its ecology and natural history but is considered an abundant species and is not included in any risk category. Due its abundance, extended distribution and habitat preferences, there is no perceived risk that the presence of this species in the Project's EAAA could trigger Criterion 2.

Zapala frog (Atelognathus praebasalticus)

The Zapala Frog is an endemic species to the northwestern Argentinean Patagonia in the Neuquén Province. Its occurrence is limited to three to five threat-defined locations in the Province, with an estimated extent of occurrence (EOO) of 3,763 km². Its elevation range goes from 1,000 to 1,500 m, and does not inhabit modified habitats. The area of interest is located on an area with plains and slight changes in topography and with altitudes between 550 m and 650 m above sea level, so there is no perceived risk that the presence of this species in the Project's EAAA could trigger Criterion 2, as it is not found in the altitude where the Project is found.

Liolaemus purul

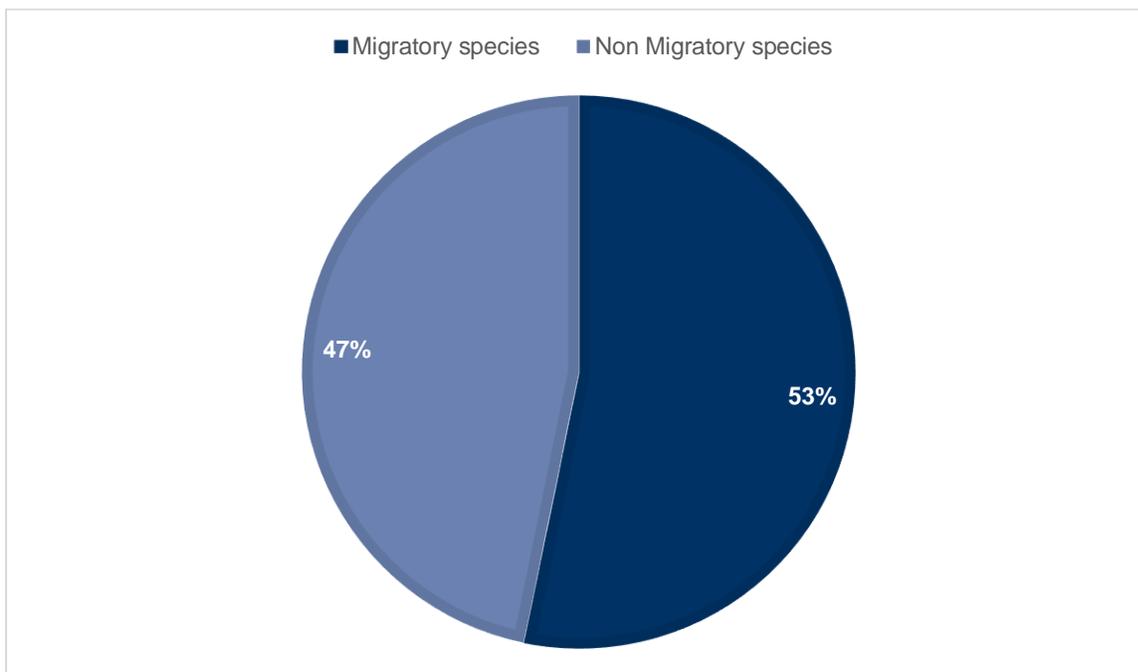
Liolaemus purul is an Iguanian lizard endemic to South America, and occurs in the ecotone between the Steppe and Altoandino phytogeographic provinces. It is observed while basking over medium-sized rocks.

Animals escape predators by running to the closest vegetation (usually a bush) and hide by staying motionless or running from shaded to sunny spots. The reproductive mode is apparently viviparous, and the species is insectivorous. This species occurs in central Neuquén Province, Argentina, and has an estimated extent of occurrence of 10,000 KM². This species occurs in central Neuquén Province, Argentina, at elevations between 1,200 and 1,400 m asl. (Abdala et al. 2012). The area of interest is located on an area with plains and slight changes in topography and with altitudes between 550 m and 650 m above sea level, so there is no perceived risk that the presence of this species in the Project's EAAA could trigger Criterion 2, as it is not found in the altitude where the Project is found

14.3.3 Criterion 3

According to the International Union for the Conservation of Nature (IUCN) records, 141 species out of 265 potentially distributed species, are migratory, and represent a total of 53% of the total species. Species that are of migratory nature other than birds (such as bats and terrestrial mammals) have been screened and they are not present.

Figure 14-2. Migratory species vs non-migratory species



Although there are potentially 141 migrating bird species that can be distributed at some point of the year in the study area, the nearest Important Bird and Biodiversity Area (IBA) is that of “*Área Natural Protegida el Mangrullo*”, which is at 57.77 km to the northeast of the project (See Section 5.1 for more detail).

From the 141 potentially distributed migratory species 6 are considered relevant because of their protection status and because of their conservation priority⁷⁶ locally, and are shown in the following table below. The Chilean flamingo (*Phoenicopterus chilensis*) is also considered as a Congregatory species.

⁷⁶ Palmer, R., Gordon, C., & Petracci, P (2017). Interacciones entre la Fauna Silvestre y la Energía Eólica en Argentina: Conocimiento Científico y Prioridades para el Futuro.

Table 14-3 Relevant potentially distributed Migratory species

SPECIES	COMMON NAME	CLASSIFICATION IN ARGENTINA	IUCN REDLIST STATUS	MIGRATORY STATUS
<i>Chloephaga picta</i>	Upland goose	VU	LC	Full migrant
<i>Chloephaga poliocephala</i>	Ashy-headed goose	A	LC	Full migrant
<i>Phoenicopterus chilensis</i>	Chilean flamingo	LC	NT	Full migrant and Congregatory
<i>Vultur gryphus</i>	Andean condor	VU	NT	Altitudinal migrant
<i>Spartonoica maluroides</i>	Bay-capped wren-spinetail	VU	NT	Full migrant
<i>Knipolegus hudsoni</i>	Hudson's Black-tyrant	VU	LC	Full migrant

Source: IUCN Red List of Threatened Species, 2019; Aves Argentina, 2017.

The possibility exist that the presence of these species could trigger Criterion 3 PS6's Critical Habitat status, but their presence and abundance must be confirmed first during the oncoming on-site wildlife monitoring surveys, and the abundance in the study site should indicate that the area sustain on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle.

14.3.4 Criterion 4

The IUCN is developing a Red List of Ecosystems, following an approach similar to the Red List for Threatened Species, and where formal IUCN assessments have been performed should use the Red List of Ecosystems for evaluation of Criterion 4. In the cases where assessment by IUCN has not been performed, the next criteria to be used is of areas determined to be of high priority for conservation by regional or national systematic conservation planning.

The area where the Vientos Neuquinos Wind Project is being developed and its immediate surroundings has not been considered for formal IUCN assessments, and has not been identified as high priority for conservation by regional or national systematic conservation planning. The closest is "El Mangrullo" Natural Protected Area, which is at 57.77 km to the northeast of the Project.

The El Mangrullo Reserve is a protected natural area located near the town of Picún Leufú, in the southeast of the province of Neuquén, in the Argentine Patagonia. It covers the whole of the Alarcón Peninsula, within the Ezequiel Ramos Mexía Reservoir. From the phytogeographic point of view, it corresponds to the mountain ecoregion of plains and plateaus, which is the same as the Project area, and is a widely distributed vegetation type in the region. Under the current information at the time of this review, there is no argument to consider any possibility of Criterion 4 being triggered.

14.3.5 Criterion 5

The importance of the Project area from an evolutionary perspective is assessed by screening its features against factors that indicate importance for evolutionary processes. The following table summarizes the factors considered likely to indicate importance for evolutionary processes and their relevance to the Project area.

Table 14-4 Criterion 5 Summary Table

	Isolation	High endemism /flora and/or fauna with unique evolutionary histories	Spatial heterogeneity	Presence of environmental gradients	Connectivity between habitats (e.g. biological corridors)
Project Area of analysis	No	No	No	No	Probable

The area is not considered highly heterogeneous in terms of favoring evolutionary processes; being a single landscape unit, though with distinct geomorphological features e.g. plains versus valleys; with these geomorphology features constituting potential environmental gradients. Considering the latter, the area is not deemed to trigger Critical Habitat under Criterion 5.

14.3.6 Other criteria

A range of additional criteria for the determination of critical habitat have been considered in this assessment. The following table details the additional criteria considered and provides a brief summary of their relevance to the Project Area.

Table 14-5 Other criteria considered for Critical Habitat determination

Criteria	Relevance to Project area	Critical Habitat Triggered?
Internationally and/or nationally recognized areas	The Project Area does not include any internationally or nationally recognized area. The closest is “Área Natural Protegida el Mangrullo” Natural Protected Area, which is at 57.77 km to the northeast of the Project,	No
Areas required for the reintroduction of CR and EN species and refugee sites for these species (habitat used during stress periods like floods, droughts or fires).	Project Area highly unlikely to be used for reintroduction of CR or EN species.	No
Ecosystems of known special significance to EN or CR species for climate adaptation purposes.	Project Area highly unlikely to be of significance to CR or EN species for climate adaptation.	No
Concentrations of Vulnerable (VU) species in cases where there is uncertainty regarding the listing, and	Not identified, still to be determined.	Not likely

Criteria	Relevance to Project area	Critical Habitat Triggered?
the actual status of the species may be EN or CR.		
Areas of primary/old growth/pristine forests and/or other areas with especially high levels of species diversity.	No high diversity habitats present	No
Landscape and ecological processes (e.g., water catchments), areas critical to erosion control or disturbance regimes (e.g., fires or floods) required or maintaining critical habitat.	Not relevant to Project area	No
Habitat necessary for the survival of keystone species.	Not identified, still to be determined	Not likely
Areas of high scientific value such as those containing concentrations of new and/or little known to science species.	Project Area highly unlikely to represent high scientific value and species new to science.	No

14.3.7 Summary of Critical Habitat

The table below summarizes the most relevant biotic features identified for Vientos Neuquinos, and if critical habitats are considered confirmed of relevance to the Project.

Table 14-6 Summary of Critical Habitat

PS6 Criterion	Feature	Critical Habitat
Criterion 1	<p>Three potentially distributed species are classified in the IUCN Redlist as Endangered globally:</p> <ul style="list-style-type: none"> • Southern river otter (<i>Lontra provocax</i>) • Zapala frog (<i>Atelognathus praebasalticus</i>) • Moscardon (<i>Bombus dahlbomii</i>) • Additionally, Andean condor (<i>Vultur gryphus</i>) is considered a high priority species for wind energy. 	<p>The presence of the Moscardon (<i>Bombus dahlbomii</i>) and the Southern river otter (<i>Lontra provocax</i>) could trigger PS6's Critical Habitat status, but their presence must be confirmed first during the oncoming on-site wildlife monitoring surveys, and their abundance should be estimated to represent at least 0.5% of the global population in order to trigger PS6's Critical Habitat, but is highly unlikely as their Estimated Area of occupancy (AAE) is largely extended and the EAAA is not representative enough. Zapala frog is highly unlikely in Project area due altitudinal differences.</p>
Criterion 2	<p>Two potentially distributed species meet the criteria of restricted range species set by IFC of an EOO less than 50,000 square kilometers (km²).</p> <ul style="list-style-type: none"> • Matasebo (<i>Monttea aphylla</i>) • Zapala frog (<i>Atelognathus praebasalticus</i>) • <i>Liolaemus purul</i> 	<p>Matasebo's habitat preferences are in foothills. Also is an abundant species with a wide distribution range, so there is no perceived risk that Criterion 2 being triggered.</p> <p>Both herpetofauna species altitudinal range is not compatible with the Project area, so there is no perceived risk that Criterion 2 being triggered.</p>
Criterion 3	<p>There are potentially 141 migrating bird species that can be distributed at some point of the year in the study area.</p>	<p>The presence of these species could trigger Criterion 3 PS6's Critical Habitat status, but their presence and abundance must be confirmed first during the oncoming on-site wildlife monitoring surveys, and the abundance in the study site should indicate that the area sustain on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory species at any point of the species' lifecycle.</p>

PS6 Criterion	Feature	Critical Habitat
Criterion 4	The area has not been considered for formal IUCN assessments, and has not been identified as high priority for conservation by regional or national systematic conservation planning.	The area is not deemed to trigger Critical Habitat under Criterion 4.
Criterion 5	The area is not considered highly heterogeneous in terms of favoring evolutionary processes; being a single landscape unit, though with distinct geomorphological features e.g. plains versus valleys; with these geomorphology features constituting potential environmental gradients.	The area is not deemed to trigger Critical Habitat under Criterion 5.
Other/Additional criteria	None of the additional criteria for the determination of critical habitat have been confirmed in the project.	The area is not deemed to trigger Critical Habitat under other/additional criteria.

As a summary and conclusion of the previous individual Criteria assessment discussed in the previous sections, **the area of analysis has not been found at this stage to as a Critical Habitat**. However, confirmation based on more comprehensive field data is necessary to fully evaluate Criterion 1 to 3 (to discard Critical Habitat status,) and if the field recorded species population meets the thresholds set by each criteria. It is expected the current wildlife monitoring efforts taking place on a monthly basis since June 2019 at the Vientos Neuquinos Wind Power Project. Site by local experts may provide data that would decrease the degree of uncertainty in regards to endangered, range restricted and migrating species (either of conservation concern or not) in order for the Project developers to make informed decisions in regards to the Projects biodiversity management.

The IFC Performance Standard 6 (PS6) provides various mitigation requirements for proposed projects located within modified, natural and critical habitats. These requirements should be addressed either through:

- the EIA's biodiversity management plan (BMP) or general project's Environmental and Social Management Plan (ESMP);
- If necessary, an associated Biodiversity Action Plan (BAP) focused on specific species or habitats.

Based on the contents of the EIA documents reviewed it is deemed that the Projects Environmental Management Plan provides general measures for biodiversity protection. The project developers are currently starting comprehensive bird monitoring surveys that are expected to continue throughout the early life of the windfarm project (i.e. construction and first years of operation) in the Project area in order to gain a better understanding of seasonal presence and abundance of avifauna.

These surveys (or operational surveys based on carcass searches, which are expected to be undertaken by the developer) should identify migrating bird species and a specific BAP be developed under an adaptive management scheme for the Project.

14.3.8 References

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15 ECOSYSTEM SERVICES

In accordance with Ecuador Principle 3 and the Performance Standard 6 of the International Finance Corporation (IFC), an impact analysis of Ecosystem Services for terrestrial habitats was carried out, following the Guidance Notes for PS6 (GN24-25, GN106 - GN122), this section was elaborated. The environment of the Project area, to determine the existence of the priority of the ecosystems services in the area.

Ecosystem services are defined as the benefits that people, including businesses, derive from ecosystems (IFC, 2012). These services are substantial and varied, underpinning basic human health and survival needs as well as supporting economic activities, the fulfilment of people's potential, and enjoyment of life.

In order to provide a uniform basis to assess the status of all major global habitats across all of the world's bioregions, the United Nation's Millennium Ecosystem Assessment combines diverse Ecosystem services typologies into a consistent classification scheme (UN 2005).

There are four categories of ecosystem services defined in Millennium Ecosystem Assessment as outlined in IFC PS6:

- **Provisioning Services;** services that can be extracted from the ecosystem to support human needs. This term is more or less synonymous with the term “ **Ecosystem Goods**” that was used in some prior classification schemes, including such tangible assets as fresh water, food, fiber, timber and medicinal plants;
- **Regulating Services;** the benefit obtained from an ecosystem's control of the natural environment, including of the regulation of surface water purification, carbon storage, and sequestration, climate regulation, protection from natural hazard, air quality, erosion and pests;
- **Cultural Services;** non-material benefits including diverse aspects of aesthetic, spiritual, recreational, and other cultural value;
- **Supporting services;** the natural processes essential to the maintenance of the integrity, resilience, and functioning of ecosystem, thereby supporting the delivery of all other benefits. They include soil formation, nutrient cycling, and primary production.

The IFC Performance Standards require projects to assess and preserve the benefits from ecosystem services. The IFC also requires that the environmental and social risks and impacts identification processes consider a project's dependence on ecosystem services. A fundamental component is to apply the mitigation hierarchy to determine measures to limit impacts on ecosystem services.

The ecosystem services review was undertaken following the next steps:

- **Identification assessment:** Identifying ecosystem services that may occur within the study area;
- **Prioritization assessment:** Prioritizing the identified ecosystem; and;
- **Impact assessment:** Identifying the impacts to ecosystem services and their human beneficiaries as a result of the Project.

15.1 Identification Assessment

An ecosystem services screening assessment was undertaken to determine the likely ecosystem service values that could be potentially important to Affected Communities.

The scoping exercise was undertaken in order to identify the following:

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- **Potential Beneficiaries:** Known and potential beneficiaries for a service were identified and where possible identifying people at the local, national, and / or global level;
- **Sources of Impact:** Potential sources of impact were considered based on the social data obtained for the site;
- **Project Dependence:** IFC PS6 requires that the Ecosystem services assessment take into consideration any services that the Project may rely upon during construction, operation and/or decommissioning. Therefore, all services for which there is a potential project dependency were scoped into the prioritization stage.

The goal of the scoping exercise was to identify a list of Ecosystem services to be assessed during the surveys.

Table 15-1. Ecosystem services Screening Assessment

Ecosystem service type	Description	Current known ecosystem services	Screened in
Provisioning services			
Food: cultivated crops	Annual and permanent crops grown for subsistence use and commercial sale	No corn or other seed areas were found in the area	No
Food: herbs and plants	Herbs and plants collected for medicine by local people	In the interview with an inhabitants of the localities during work camp, people mentions some herbs, plants are collected as natural medicines in the area.	Yes
Trout fishing	Trout sport fishing is a regulated local activity that also brings in significant international tourism. The resource is used both for consumption (food) and as a source of income for local sport fishing operations that cater to international tourists.	Over the past ten years, an average of 47, 626 permits were given out for trout fishing in the Province of Neuquén, with the majority going to local fishers. In the past year (2017/2018) 28, 798 permits were given to local sport fishers, while international sport fishers received 1,630 permits. This suggests that the industry plays a significant role for both local consumption and livelihoods, and international tourism.	Yes
Livestock farming	Sedentary and nomadic livestock farming	Near the Area of Influence of the Project lives one resident with cows and wild horses. Additionally, community members in the Neuquén area raise almost no bovine cattle but rather raise goats in an informal/artisanal manner. These merchants, better known as "puesteros", keep only a small number of animals that they raise to maintain a subsistence economy.	Yes
Biomass fuel	Wood, dung and plant matter collected for charcoal, fuel	There are no services associated with this item	No

Ecosystem service type	Description	Current known ecosystem services	Screened in
Timber and wood products	Wood collected for local use or for sale as timber, wood pulp and paper	No use of timber was identified within the Aol.	No
Non-Timber Forest Products (NTFP)	Non-timber products collected from the forest. For example, cane, palm, straw, cotton, hemp, twine and rope, natural rubber	No use of non-timber products was identified within the Aol.	No
Regulating services			
Freshwater	Freshwater for bathing, drinking, irrigation, laundry, household and industrial use	Water from wells is used for drinking. Bottled water can be bought by local people.	Yes
Biochemical, natural medicines, pharmaceuticals	Natural medicines, biocides, food additives, pharmaceuticals and other biological material for commercial or domestic use. For example, pelts, carved or decorative animal products, live animal trade	No use of natural medicines was identified within the Aol.	No
Animals Husbandry	Genes and genetic information used for animal breeding, plant improvement, and biotechnology	There is no animal husbandry practiced within the Aol	No
Ecosystem functions	The influence ecosystems have on air quality by extracting chemicals from the atmosphere (i.e., serving as a “sink”) or emitting chemicals to the atmosphere (i.e., serving as a “source”)	The Aol is not an important influence on the atmosphere.	No
	Carbon sequestration (impacts on global climate change) regulation of temperature, shade air quality by vegetated areas	The Aol does not play an important role in carbon sequestration, temperature regulation of shade	No

Ecosystem service type	Description	Current known ecosystem services	Screened in
	Influence ecosystems have on the timing and magnitude of water runoff, flooding, and aquifer recharge	The Aol does not affect the timing and magnitude of water runoff, flooding or aquiver recharge	No
	Role played by vegetation and bacteria in the filtration and decomposition of organic wastes and pollutants and the assimilation and detoxification of compounds.	The Aol does not play a role in the filtration and decomposition of organic wastes and pollutants and the assimilation and detoxification of compounds.	No
	Role of natural habitats (e.g. wetlands, beaches, reefs) in protecting crops, buildings, recreation areas from waves, wind and flooding from coastal storms.	The Aol does not play host to important natural habitats that protect against waves, wind and flooding. Some small mangrove communities exist along the shoreline.	No
	Regulation of fire frequency and intensity (e.g. dense forest can provide firebreaks)	The Aol does not play a significant role in the regulation of fire frequency and intensity.	No
	Predators from forests, grassland areas, etc. may control pests attacking crops or livestock	The Aol does not play a role in managing predators and pests.	No
	Influence ecosystems have on the incidence and abundance of human pathogens	The Aol does not influence the incidence and abundance of human pathogens.	No
	Role of vegetation in regulating erosion on slopes and riparian areas	<p>The predominant vegetation is characteristic of the “Provincia Fitogeográfica del Monte”, predominant in medium-height shrubs with an average vegetation cover of 20 to 40%.</p> <p>The plant species reflect the conditions of the environment, showing adaptability to rigorous conditions, such as the scarcity of water and vegetation, or the ravages of the cold autumn - winter. The removal of vegetation along the hill may increase sediment erosion at the Project area.</p>	Yes

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Ecosystem service type	Description	Current known ecosystem services	Screened in
	Birds, insects and some small mammals pollinate certain flora species, including some agricultural crops	Pollination of crops occurs in the Aol, however the presence of pollinators is not considered to be significant.	No
Cultural services			
Spiritual, religious or cultural value	Natural spaces or species with spiritual, cultural or religious importance	The Project Aol does not contain natural spaces or species with spiritual, cultural or religious importance.	No
	Cultural value placed on traditional practices such as hunting, fishing, crafts and use of natural resources.	The Project Aol is not considered an important area for cultural value on traditional practices.	No
	Use of natural spaces and resources for tourism and recreation (e.g. swimming, boating, hunting, bird-watching, fishing)	The Project Area (and Aol) is currently subjected to industrial and agricultural developments, which generate negative aesthetic and environmental impacts. Therefore it is unlikely that the Project area would be used for tourism or recreational purposes due to the pre-existing industrial use of the land. In addition, trout fishing is carried out regularly, being an important activity for national and international tourism in the Province of Neuquén.	No
	Cultural value placed on the aesthetic value provided by landscapes, natural landmarks	The Aol is not considered as important for aesthetic value provided by landscapes, natural landmarks.	No
	Information derived from ecosystems used for intellectual development, culture, art, design, and innovation.	The Aol is not considered important for information derived from ecosystems used for intellectual development, culture, art, design, and innovation.	No
	Ornamental resources	The Aol is not considered important for ornamental resources.	No

Existence values

Vientos Neuquinos I Wind Farm Project (Neuquén, Argentina)

Ecosystem service type	Description	Current known ecosystem services	Screened in
Non-use value of biodiversity (e.g. existence, bequest value)	Species and areas valued globally as of high conservation value	There are 265 potentially distributed species of vertebrates for Vientos Neuquinos Project. From which a total of 189 birds species, 7 species of bats, 43 land mammals, 6 amphibians and 20 reptiles (From 265 species, only 2 species are enlisted as Endangered in the IUCN Red List: Lontra provocax and Atelognathus praebasalticus.	Yes
	Formation of biological material by plants through photosynthesis and nutrient assimilation.	The AoI does not play an important role in the formation of biological material by plants through photosynthesis and nutrient assimilation	No
	Flow of nutrients (e.g., nitrogen, sulfur, phosphorus, carbon) through ecosystems.	The AoI does not play an important role in the flow of nutrients through ecosystems.	No
	Flow of water through ecosystems in its solid, liquid, or gaseous forms.	The Project area does not contain natural watercourses or waterbodies. Several artificial water bodies occur to serve settlements and agricultural developments. Overland flow would likely occur onsite during rainfall events. The Project area should not affect the flows of greater ecosystem.	No
	Natural soil forming processes throughout vegetated areas.	The AoI does not play a role in the natural formation of soil forming processes.	No
	Natural spaces that maintain species populations and protect the capacity of ecological communities to recover from disturbances.	There are no protected natural areas within the Area of Influence of the Project	No

Source: ERM, 2019

15.2 Prioritization assessment

The World Resources Institute (WRI) guidelines⁷⁷ and IFC PS6 requires that priority ecosystem services are identified, and impacts to those services are assessed (IFC, 2012). The prioritization process is aimed at identifying those services for which project impacts would be most likely to result in adverse impacts on project affected communities and other beneficiaries.

Using the information collected through the baseline data collection and stakeholder engagement processes, ecosystem services were prioritized according to a priority matrix ranking two (2) criteria:

- Importance of the ecosystem service to the beneficiary which considers the intensity of use, degree of dependence and the importance expressed by the project affected communities; and
- Irreplaceability of the ecosystem service, which refers to the availability of alternatives, the accessibility, cost and appetite for those alternatives as discussed with the beneficiary.

Table 15-2 Ecosystem service prioritization matrix

Importance to Beneficiaries		Irreplaceability		
		High	Moderate	Low
Low	The service is used and valued by parts of the community, but it is not important in maintaining quality of life or livelihoods of Project Affected Communities.	Low Priority	Low Priority	Moderate Priority
Medium	The service is readily used by some members of the Project Affected Communities for income or subsistence, but community members are not dependent upon the service for their livelihoods, and the service is not universally utilized.	Low Priority	Moderate Priority	High Priority
High	The service is highly important in maintaining the livelihoods of the Project Affected Communities, and is used by most of the community regularly.	Moderate Priority	High Priority	Major Priority
Essential	The service is essential to maintain the health, well-being and livelihoods of the Project Affected Communities, and the service is used by all members of the community. Alternatively, or additionally, the service is of cultural, spiritual and/or socio-economic value to Indigenous communities in the region.	High Priority	Major Priority	Major Priority

Irreplaceability definition

High	Many spatial alternatives exist that are readily available to the Project Affected Communities, and there are no major impediments to their usage.
Moderate	Spatial alternatives exist but are either less accessible than the affected service, or there are other barriers to their use such as distance, cost and skills required to access the service.

⁷⁷ World Resources Institute, "Weaving Ecosystem Services into Impact Assessment", 2013, Available at: <https://www.wri.org/publication/weaving-ecosystem-services-into-impact-assessment>

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Importance to Beneficiaries	Irreplaceability
Low	There are few to no spatial alternatives available to the Project Affected Communities.

Source: ERM, 2016

Table 15-3 Results of Prioritization

Ecosystem services	Trends and Sustainability	Beneficiaries	Importance to Beneficiaries	Irreplaceability	Potential Alternatives	Priority (H,M)
Provisioning Services						
<ul style="list-style-type: none"> Food: wild-caught fish and shellfish & aquaculture 	Trout stocks are used both for local sport fishing and local consumption, as well as a source of international tourism.	Sporting fishing is an important source of economic and food security benefits for local community members. Additionally, a large number of international tourists frequent the area for sport fishing (1,630 permits were given to international visitors in 2018) and derive benefit from the sport fishing industry.	Trout fishing is highly important to local people as a food and income source. While the Project may not directly impact the fish industry itself, Project members must ensure that any activities that interact with the industry have the proper permits, and any population influx is aware of the fishing activity in the area, and applies for the necessary permits if they desire to fish.	The trout fishery is vulnerable to over-fishing and industrial development and is not easily replaceable, given the unique aquatic ecosystem and scarcity of alternative locations where trout naturally thrive.	Few alternatives exist to a naturally occurring trout fishery, as the conditions the species require to survive are difficult to replicate elsewhere.	High
<ul style="list-style-type: none"> Food: cultivated crops 	There is no current data on the crop yield or sustainability of agriculture within the Aol.	There is currently no data available to assess if community members depend on crop cultivation.	There is currently no data available to assess if community members depend on crop cultivation.	There is currently no data available to assess if different crops can be cultivated.	There is currently no data available to assess if there are alternatives to crop cultivation. Further research needs to be conducted.	Moderate
Regulating Services						
<ul style="list-style-type: none"> Livestock farming 	Some local sedentary and nomadic livestock farming occurs within the Aol. Respondents did not identify any changes in the number of livestock or other changes to their herds.	Local community members are the beneficiaries as they consume livestock (mainly goat and small amounts of beef) as a food source. Respondents shared that goats are only used for local consumption during special occasions, and small numbers of animals are kept so as to satisfy a subsistence economy.	Livestock is important to local people as a food source and income. While the amount of livestock raised may be small, it is significant in the context of the local subsistence economy of Neuquén and plays a role in the livelihoods of community members.	Livestock farming is considered to be replaceable and can be substituted with purchased meat if economically feasible. As cost remains an issue, some families may not have the disposable income to purchase what they formally received for free, and in those cases, livestock farming is irreplaceable save another income generating activity.	Alternative food sources may be purchased by local people, if and when possible.	High
<ul style="list-style-type: none"> Biomass fuel 	Wood, dung and plant matter are all collected for charcoal, fuel.	Local community members are the beneficiaries of biomass fuel, as wood is used in fuel stoves for cooking throughout the communities. The amount of wood available has been stable, however the local community is concerned about the content and impact of restrictions in wood gathering areas.	Wood is important to local people for use in wood stoves for cooking.	Wood is considered to be replaceable and can be substituted with gas, yet this substitute would force community members to incur a cost, if it is not offset by the Project.	Alternative fuel sources may be purchased by local people (if available).	Moderate
<ul style="list-style-type: none"> Freshwater 	There is no current data on the availability of freshwater within the Project area for local community members.	Local community members depend on freshwater for drinking and agricultural uses.	Local community members depend on clean freshwater for use.	Freshwater is an irreplaceable ecosystem service.	Bottled or trucked water may be available for household use. There are no alternatives available for replacing irrigation water.	High
<ul style="list-style-type: none"> Food: herbs and plants 	Herbs and plants collected for food by local people	Local community members are the beneficiaries as they consume herbs and plants for own use as medicines	Herbs and plants are important to local people for herbal medicines	Herbs and plants places can be substituted with nurseries for local families who collect them	Alternative herbs and plants, or the places to collect them could be available to people. Other alternative is to establish plant nurseries where people can	High

Vientos Neuquinos I Wind Farm Project (Neuquén, Argentina)

Ecosystem services	Trends and Sustainability	Beneficiaries	Importance to Beneficiaries	Irreplaceability	Potential Alternatives	Priority (H,M)
					continue to consume plants for their needs	
Cultural Services						
<ul style="list-style-type: none"> Species and areas valued globally as of high conservation value 	2 species are enlisted as Endangered in the IUCN Red List: Lontra provocax and Atelognathus praebasalticus.	There is little interaction with local community members, however the EBA plays a role the conservation of endemic bird species	There are no direct benefits to beneficiaries, however the conservation of the species has regional and global significance.	The endemic species would be irreplaceable if they were to become extinct.	There are no alternatives to the EBA	High
<ul style="list-style-type: none"> Natural spaces that maintain species populations and protect the capacity of ecological communities to recover from disturbances. 	No protected areas were found within the Area of Influence of the Project	As no protected areas were found within the Area of Influence of the Project, there are no beneficiaries.	No protected areas were found within the Area of Influence of the Project	No protected areas were found within the Area of Influence of the Project	There are no alternatives to the EBA	Moderate

Source: ERM, 2019

Vientos Neuquinos I Wind Farm Project (Neuquén, Argentina)

The following priority ecosystem services have been identified as shown in following table.

Table 15-4. Priority ecosystem services

Priority Ecosystem Service
Trout sport fishing
Livestock farming
Herbs and plants
Freshwater
Non-use value of biodiversity (e.g. existence, bequest value) Species and areas valued globally as of high conservation value

Source: ERM, 2019

16 CUMULATIVE IMPACT ASSESSMENT

The objective of a Rapid Cumulative Impact Assessment (RCIA) is to determine a) if the execution of the Vientos Neuquinos Project has the potential to contribute significantly to the cumulative impacts on valued environmental and social components (VEC), and 2) if the viability of the project may be at risk from cumulative effects on VEC they depend on.

The main steps carried out during this chapter, are:

- Identifying other existing, planned and future projects that could cause cumulative effects;
- Identifying the VEC that could be cumulatively impacted;
- Evaluating the cumulative impacts on the VEC;
- Develop a framework for the management of cumulative impacts.

16.1 Methodology

The Rapid Cumulative Impact Assessment has been prepared following the guidelines of the *Manual of Good Practice Evaluation and Management of Cumulative Impacts: A Guide for the Private Sector in Emerging Markets of the IFC*⁷⁸. The assessment focuses on a VEC as a recipient of the impacts of different projects and activities, and not on a single project as a generator of impacts on different environmental and social receptors.

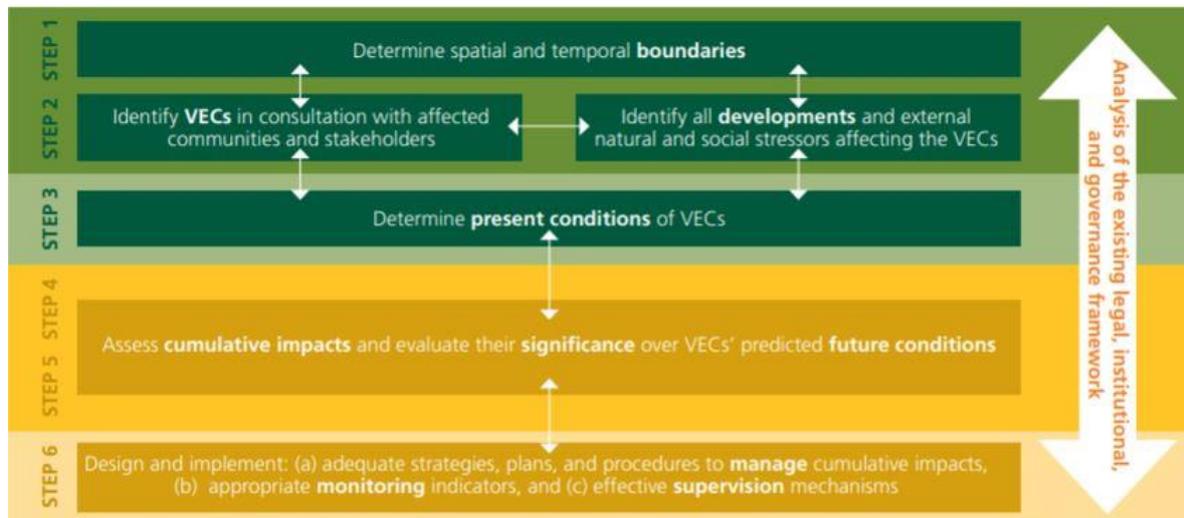
A RCIA will assess the potential impacts and risks of the project over time, in the context of potential effects from other developments and environmental and social external drivers on a chosen VEC, by verifying that the project's cumulative social and environmental impacts and risks will not exceed a threshold that could compromise the sustainability of selected VEC. As a result, a RCIA will confirm that cumulative social and environmental effects do not limit the project's feasibility. RCIA supports the development of governance structures for making decisions and managing cumulative impacts at the appropriate geographic scale, ensuring that the concerns of affected communities about the cumulative impacts of a proposed development are addressed.

It is an iterative and flexible process based on the IFC's six-step approach, shown in the Figure below.

1. Scoping Phase I – VECs, Spatial and Temporal Boundaries
2. Scoping Phase II – Other Projects and External Pressure Sources
3. Establish information on baseline status of VEC
4. Assess cumulative impacts on VEC
5. Assess significance of predicted cumulative impacts
6. Management of Cumulative Impacts

⁷⁸ International Finance Corporation (2015). *Manual of Good Practice Evaluation and Management of Cumulative Impacts: Guide for the Private Sector in Emerging Markets*. Washington DC.

Figure 16-1. Cumulative Impact Assessment Process (IFC)



Source: IFC 2015.

Following the indicated steps, cumulative impacts will be identified and assessed, considering that a cumulative impact includes two components:

- The anticipated future condition, which is the total effect of the other existing, and predictable future developments and external pressure sources, and
- The contribution of the development under evaluation to the cumulative impacts.

Within the RCIA context, the incremental impact of the project under review will be the difference between the condition of the VEC when impacted only by the other developments in the future baseline and the condition of the VEC when impacted by both the project under review and the future baseline impacts.

Based on the Project description, the spatial boundaries of the study area consider Vientos Neuquinos, Picún Leufú and Meandros as the main local wind farms. The temporal boundary will be the next 3 years, including the Project's construction activities finishing on February 2020 and the first two years of the operation stage, in charge of Nordex, the EPC⁷⁹ contractor.

16.2 Limitations

The information review involved desk review of available information, including existing ESIA's, and on-line public information. Thus, the scope of the assessment takes into account the typical limitations that a project developer may face in this type of evaluation, including:

- Lack of detailed VEC baseline information;
- Uncertainty regarding the execution of future projects;
- Incomplete information about other projects and activities (for example, if the information is not available in the public domain);
- Lack of provincial strategic plans, or integrated resource planning schemes.

⁷⁹ Engineering, Procurement and Construction

16.3 Other Projects

The following assesses the other Projects within the spatial and temporal boundaries of the cumulative impact assessment. It was based on information from existing environmental and social studies and information available in the public domain as well as observations and information obtained in the interviews performed during the site visit conducted in May 2019.

The scope of this assessment covers the following projects:

- Picún Leufú Wind Farm
- Los Meandros Wind Farm

It is worth mentioning that Los Meandros wind farm is currently paralyzed, due to financing issues. Similarly, Picún Leufú wind farm has no connection to transmission lines, being unable to transport the energy. Other projects have been not identified surrounding the Project.

16.3.1 Picún Leufú Wind Farm

The "Picún Leufú" Wind Farm⁸⁰ is located northeast of the city of Picún Leufú, 30 kilometers away (785 m.s.), and 72.67 km away from Vientos Neuquinos Wind Farm. The Project Owner is ADI-NQN S.E.P. Its capacity equals 100 MW.

The studies, permits and actions carried out by 01/17/2018 are the following:

- Wind resource measurement campaign: 6.9 years
- Stage I Electrical Study prepared by SIEyE Consultores in September 2017
- Certification of wind measurements made by the international consultant Ventus S.A. in December 2017
- Environmental Impact Study prepared by Lic. Alejandra Rubilar in August 2017
- Application for Access to Existing Transportation Capacity presented to the EPEN in Sept. 2017
- Environmental License granted by the Secretary of State for Environment and Sustainable Development of Neuquén (S.E.A. and D.S.) in October 2015.

The following are the studies, permits and actions in progress:

- Certificate of Convenience and Public Need by the ENRE
- Title of Generating Agent of the Wholesale Electricity Market requested to the Ministry of Energy and Mining of the Nation (File EX-2017 22845296).

Despite the wind resource and technical soundness of its wind projects, Neuquén has not had any luck with tenders, either through the RenovAr Program or MATER.

In the first round (Renewable Energy Term Market - MATER), Los Meandros wind farm, owned by the Chinese firm Envision Energy, was awarded 75 MW. In the second round, Neuquén was on the verge of awarding the 100 MW Picún Leufú wind farm, but due to a sequence of ties with a project in the Province of Buenos Aires it was left out in the last instance.⁸¹ In the third round, Vientos Neuquinos wind farm was awarded 80 MW, while Picún Leufú wind farm was left out, since it does not have a transmission line to transport the energy.

16.3.2 Los Meandros Wind Farm

On October 2018, the Provincial Energy Agency of Neuquén (EPEN) signed the contract with Lomas de los Vientos Company for the execution of the electrical connection works of Los Meandros wind farm with the interconnected system. The work consists of the construction of a maneuvering station -which

⁸⁰ <http://www.web.adinqn.gov.ar/sectores/energeticos/eolico/picun100mw/>

⁸¹ <http://www.energiaestrategica.com/la-provincia-de-neuquen-espera-adjudicar-dos-parques-eolicos-por-150-mw/>

will be called Challacó- and a high voltage line (LAT), both at the 132 Kv level, to allow the connection of the wind farm to the transport system of the EPEN.⁸²

Recently, the Chinese company Envision started construction works of "Los Meandros" wind farm⁸³ in Neuquén, which will be launched in February 2020. It has a capacity of 125 MW, located at 35 kilometers away from Cutral Có and Plaza Huincul. Ventus is in charge of property engineering and Milicic and construction engineering, generating 125 MW through 50 2.5 MW generators, becoming one of the largest parks in the country, with an investment of 180 million dollars.

The President of ADI-NQN mentioned the relevance that this project has for the province of Neuquén, in addition to the "Vientos Neuquinos" wind farm located 40 km from Picún Leufú, and 127.59 km away from Los Meandros Wind Farm, with a capacity of 80 MW, which will then reach 100 MW. They are all part of the national government's strategy for the development of renewable energies and the Governor's decision to promote the establishment of clean energy projects, as an activity to strengthen the energy sector, beyond the exploration and exploitation of fossil fuels, made visible in Vaca Muerta. The President of ADI-NQN also held that "the establishment of renewable energies is important for Neuquén, because it gives the possibility of preserving the environment, and being able to comply with the energy matrix that establishes 20% of renewable energies in 2025".

16.4 Valued Environmental Components (VEC)

VECs are environmental and social components valued and considered as the final recipients of cumulative impacts. To be included in this assessment, it must first be demonstrated that an environmental and social component is valued by at least one stakeholder, be it the national or international scientific community or a national, regional or local group.

VECs are environmental and social attributes that are considered to be important in assessing risks; they may be:

- physical features, habitats, wildlife populations (e.g., biodiversity),
- ecosystem services,
- natural processes (e.g., water and nutrient cycles, microclimate),
- social conditions (e.g., health, economics), or
- Cultural aspects (e.g., traditional spiritual ceremonies).

While VEC may be directly or indirectly affected by the project, they are often also affected by the cumulative effects of several other projects. VEC are the ultimate recipient of impacts because they tend to be at the ends of ecological pathways. Then, the VEC must be affected by both the Project and a combination of the Other Projects. If any VEC is affected by the Project, but not by the Other Projects or vice versa, this VEC will not be included.

During the establishment of the scope, the impacts to VEC were used as a basis. Based on the information reviewed, the following VEC reflect the concern of the professional community, affected communities and the government entities consulted during the site visit:

- Local Employment
- Local accommodation services
- Vehicular Transit
- Birds Biodiversity

⁸² <https://www.lmneuquen.com/acuerdo-obras-clave-el-parque-eolico-los-meandros-n610509>

⁸³ <http://www.energiaestrategica.com/envision-inicia-las-obras-del-parque-eolico-los-meandros-en-neuquen-se-inauguraria-en-febrero-de-2020/>

16.4.1 Local Employment

In Neuquén, hydrocarbon exploitation, petro-chemistry, tourism, agriculture (fruit) and livestock are the most dynamic and GDP-contributing activities. Neuquén GDP reached 12,943 million pesos, representing a GDP per capita of 21,535 pesos, and contributing 1.9% of the national GDP in 2013⁸⁴. Full structure is comprised of the following distribution:

Table 16-1. Economic structure (Neuquén)

Sector	% of Neuquén GDP (2013)	Amount (pesos)
Primary	36.7	4,752 million
Mine Exploitation ⁸⁵	35.5	
Agriculture, Livestock and Fishing	1.2	
Secondary	15	1,958 million
Tertiary	48	6,233 million
Commerce, hotels and restaurants, transportation and communication, financial intermediation, and corporate and real estate services	31	
Public administration, health, education, personal services	17	

Source: FAO/PROSAP/Neuquén Province Government 2015

In Neuquén, activities linked to commerce and services involve most of the workforce (approximately 60% of the total). The mining and oil sector, which contributes the most value to the province, explains only 14.6% of the registered private wage workforce (a percentage reduced if public sector and non-registered workforce are included).

Table 16-2 Wage-earning labor in the private sector (Neuquén)

Sector	% of Neuquén wage labor (2014)	N (thousands)
Agriculture, livestock and fishing	4.9	5.3
Mining and oil	14.6	15.8
Industry	7.1	7.7
Commerce	20.5	22.3
Services	38.9	42.2
Power, gas and water	1.7	1.9
Construction	12.2	13.3
Total	100.0	108.4

Source: FAO/PROSAP/Neuquén Province Government 2015

As detailed in the Social baseline (5.3 Social), the local population is scarce, thus, when it comes to the local workforce, in Piedra del Águila there are 100 available workers, while in Villa Chocón there are 50 and in Santo Tomas merely 20 people.

⁸⁴ FAO/PROSAP/Neuquén Province Government 2015

⁸⁵ The classification of economic activities according to the International Standard Industrial Classification (ISIC) includes: the exploitation of crude oil and natural gas and related activities, the extraction of metalliferous minerals and the exploitation of mines and quarries.

16.4.2 Local accommodation services

Although there has not been a market study to identify the supply of accommodation services in the communities nearby the Project, the following information was collected as part of the performed interviews.

The local accommodation services in Piedra del Águila are limited and the community members prefer to rent their services to the tourist rather than Project workers. According to the information collected in the field visit, there are 9 hotels located in the area, a total of 160 beds are available for visitors.

In Picún Leufú, there are 4 hotels and in Santo Tomas only one. See the map included in the Social baseline section (See Section 5.2).

16.4.3 Vehicular Transit

National Route 237 is a paved highway, located in the eastern part of the Province of Neuquén, linking National Route 22 with National Route 40 in the Corral de Piedra area. Its extension is 361 km (km 1270 to 1631). The last sections that were built, connected the city of San Carlos de Bariloche and the city of Neuquén. National Route 237 was finished paving in the first half of the 1970s. This route is parallel to the Limay River.

The cities and towns through which this route passes from northeast to southwest are the following:

- Confluence Department: Arroyito (km 1270) and Villa El Chocón (km 1296).
- Picún Leufú Department: Picún Leufú (km 1352).
- Collón Curá Department: Piedra del Águila (km 1445) and access to Villa Rincón Chico (km 1451).
- Los Lagos Department: Confluencia (km 1581).

The average annual daily traffic (AADT) is 1,001 – 4,000 vehicles for the segment is RN 237 - Project Site⁸⁶.

As mentioned in the Transportation Route Assessment (chapter 12), RN 237 is a primary route to Bariloche and other Patagonian vacation areas, and experiences heavy traffic during summer (June-July) and winter (January-March), as well as during holiday periods year-round, such as Easter. The segment of RN 237 near the intersection with RN 22 in Arroyito carries an average of 2,000 vehicles per day, while the segment of RN 22 east of Arroyito carries an average of 8.100 vehicles per day;⁸⁷ however, these roads experience frequent congestion during these peak periods. RN 237 is also used by local residents, as well as oil and gas companies working in the region.

The entrance to the project is at Km 1406 of the National Route N° 237, which is one of the busiest routes in the Neuquén province, since it connects Neuquén and Bariloche, a major tourist destination. For instance, during the last Easter holidays, 27 traffic infractions were carried out in that road. *"It was impressive the amount of cars that returned last night for the holiday. 70% came from the south, against 30% coming from Cutral Co, Zapala and Chos Malal"*, said the Neuquén Superintendent of Police. About 60 cars per minute were counted on Route 22 at the junction with Route 237. He also said that, at the time of greatest concurrence, drivers took more than an hour to travel the stretch between Arroyito and Senillosa.⁸⁸

⁸⁶ Ministerio de Transporte. 2019. Sistema de Información Geográfica (SIG) de la Dirección Nacional de Vialidad (SIG-Vial).

<https://www.argentina.gob.ar/vialidad-nacional/sig-vial>

⁸⁷ ⁸⁷ Vialidad Nacional. 2019. Tránsito en la Red Nacional de Caminos.

http://transito.vialidad.gob.ar:8080/SelCE_WEB/tmda.html

⁸⁸ <https://www.lmneuquen.com/finde-pascuas-realizaron-27-infracciones-circular-la-banquina-n630963>

Photography 16.1. National Route N° 237 during holidays



Source: <https://www.lmneuquen.com/una-fila-infinita-autos-el-retorno-la-cordillera-n630895>

Heavy trucks and tourists commonly pass by, becoming an unsafe road. Extreme weather conditions worsen the situation during winter.

Photography 16.2. National Route N° 237 during winter



Source: <https://www.rionegro.com.ar/se-habilito-el-transito-en-la-ruta-237-entre-neuquen-y-bariloche-BK5185939/>

National Route 237 is seen as a difficult road. During winter, numerous accidents take place in this route, between Arroyito and Corral de Piedra.⁸⁹ Similarly, the local media has reported several transit accidents occurred this year. Some of the most significant ones are presented below:

May 26, 2019: She fell asleep and turned onto Route 237: she came out unscathed. According to official sources, the incident took place around 18. A woman with minor injuries was the balance of a rollover near Villa El Chocón, at kilometer 1303 of Route 237.⁹⁰

April 14, 2019: Tragic turnaround on Route 237: two women were killed and two others were injured. Occurred this Sunday around 19, at the kilometer 1385. Two women died in a tragic overturning occurred on National Route 237, between Picún Leufú and Piedra del Águila. The episode occurred about 45 kilometers from Picún Leufú in the area known as Bajada Colorada - when the gray Ford Ranger truck in which they moved, for causes that are trying to establish, left the road and gave several tumbles.⁹¹

⁸⁹ <https://www.lmneuquen.com/la-ruta-237-como-nunca-la-viste-n580071>

⁹⁰ <https://www.lmneuquen.com/se-quedo-dormida-y-volco-la-ruta-237-salio-ilesa-n634873>

⁹¹ <https://www.lmneuquen.com/tragico-vuelco-la-ruta-237-mueren-dos-mujeres-y-hay-otros-dos-heridos-n630163>

February 8, 2019: The accident occurred this Friday at kilometer 1325 of Route 237. Police authorities confirmed that the victims were three men from Bariloche. The incident occurred about 10 kilometers from the access to El Chocón. The Deputy Director of Security of Cutral Co said that after the crash the truck was set on fire and its three occupants died burned.⁹²

January 30, 2019: Route 237: one truck overturned and two are injured. According to official sources, the incident was recorded on National Route 237, at kilometer 1297, around 14:30. A rollover in front of the former El Chocón service station left two people injured. On board, a couple traveling from Bariloche to Neuquén.⁹³

16.4.4 Birds diversity

Birds are an important component of biodiversity, they are not just necessary to maintain the ecosystem functionality as they provide ecosystem services through pollination and seed dispersal, they are also an important cultural component in the region and a tourist attraction. The Limay River, at 9 km distance approximately, have a rich and diverse community of birds that serves as refuge for a large number of migratory species.

On the other hand, according to bibliographical survey, 189 bird species are potentially distributed in the Project area, 5 of them are listed in IUCN Redlist as Near Threatened and 8 of them are in risk category in the Argentine Legislation. None of the potentially distributed species are considered endemic for Argentina or the Region.

For all of this reasons birds diversity is consider a VEC. Nevertheless, as there are no similar wind projects in the surroundings, being the closest ones about 127.59 km (Los Meandros Wind Farm) and 72.67 km (Picún Leufú Wind Farm), both of them paralyzed and the latter with no possibilities of being executed in a short term, they has not been considered in the cumulative impact assessment.

16.5 External Pressure Sources

16.5.1 Tourist flow

The main road to access Bariloche⁹⁴, main tourist destination of the Argentinian Patagonia, is the National Route N° 237, which connects Bariloche with Neuquén. Piedra del Águila is a town on the way to Bariloche, and receives every year the floating demand of tourists passing by during the vacation months, being the high seasons those of June-July, and from January to March (see Photography 1).

A recently launched hydropower tourist circuit involves a tour through the five local hydroelectric projects and two gigantic dams, fed by the Limay River. The initiative objective is to take advantage of the natural, energetic, educational and cultural heritage of the hydroelectric plants within the province of Neuquén. With the aim of designing tourist circuits in the dams of Pichi Picún Leufú and Alicurá de Piedra del Águila, representatives of the Secretary of Tourism, Piedra del Águila Municipality, and the local hydroelectric power plants (Pichi Picún Leufú, Benito Colque and Piedra del Águila) agreed on opening these energy complexes to the public through a program of guided visits. This tourist and recreational circuit will allow valuing the natural and scientific attractiveness of hydroelectric complexes. The visit to them is part of the scientific tourism that aims to involve tourists in a direct and participatory way in the knowledge of the natural and cultural world, by combining academic science, environmental

⁹² <https://www.lmneuquen.com/choque-fuego-y-muerte-la-ruta-237-aun-no-identificaron-las-tres-victimas-n622699>

<https://www.rionegro.com.ar/tres-personas-murieron-en-un-accidente-sobre-la-ruta-237-EA6354035/>

⁹³ <https://www.lmneuquen.com/ruta-237-volco-una-camioneta-y-hay-dos-heridos-n621720>

⁹⁴ <https://www.barilocheturismo.gob.ar/es/sobre-bariloche>

<https://www.barilocheturismo.gob.ar/es/home>

education and tourism to meet cultural, educational and recreational needs, incorporating visits to architectural and technical works of art.⁹⁵

16.5.2 Extreme weather conditions

In Piedra del Águila, the summers are hot, dry and mostly clear, while the winters are very cold, wet and partly cloudy. It is windy throughout the year. During the course of the year, the temperature generally varies from -0 ° C to 28 ° C and rarely drops below -5 ° C or rises above 34 ° C. Based on the tourism score, the best time of the year to visit Piedra del Águila for hot weather activities is from mid-December to early March. The warm season lasts 3.5 months, from November 29 to March 13, and the average daily maximum temperature is more than 24 ° C. The hottest day of the year is January 14, with an average maximum temperature of 28 ° C and an average minimum temperature of 11 ° C. The cold season lasts 3.4 months, from May 17 to August 28, and the average daily maximum temperature is less than 13 ° C. The coldest day of the year is July 18, with an average minimum temperature of -0 ° C and maximum average of 10 ° C.

Piedra del Águila has a considerable variation in monthly rainfall per season. The rainy season lasts 11 months, from January 17 to December 23, with a mobile interval of 31 rainy days of at least 13 millimeters. Most of the rain falls during the 31 days centered on June 5, with an average total accumulation of 97 millimeters. The period of the year without rain lasts 3.7 weeks, from December 23 to January 17. The approximate date with the least amount of rain is January 1, with an average total accumulation of 11 millimeters.

The amount of snow equivalent in liquid in a period of 31 mobile days in Piedra del Águila does not vary considerably during the year, from 3 millimeters to 3 millimeters. The day with the most snow is June 20 (5 mm).⁹⁶

The extreme weather conditions have caused the National Route N° 237, to be closed by authorities in several occasions during the winter holidays (between June and July), due to the high risk of accidents.

<http://programasumar.com.ar/efectores/neuquen.php>; <http://programasumar.com.ar/efectores/rionegro.php>

16.6 Cumulative Impact Assessment

The significance of a cumulative impact is evaluated in terms of the effect of vulnerability and / or risk to the sustainability of the integral condition of the VEC. Being limited by the information available in the public domain and the information generated by existing environmental and social studies, the cumulative impact assessment was mainly qualitative and descriptive.

Its significance was prioritized, following the following definitions:

- **Major Priority:** it is necessary to take action in the short term to mitigate the adverse cumulative effects, considered of greater significance, which are currently occurring on the VEC and that the Project would contribute,
- **Medium Priority:** action is required in the medium term to mitigate the potential adverse cumulative effects that could occur on the VEC and,
- **Minor Priority:** no action is required, since the expected cumulative adverse effects on the VEC are considered less significant.

16.6.1 Employment generation

⁹⁵ <http://neuquentur.gob.ar/en/prensa-turistica/21691/disenan-circuitos-turisticos-en-las-represas-neuquinas/>

⁹⁶ <https://es.weatherspark.com/y/26507/Clima-promedio-en-Piedra-del-%C3%81guila-Argentina-durante-todo-el-a%C3%B1o>

When it comes to Vientos Neuquinos, there is a specific agreement between Nordex and UOCRA (Workers' Union of the Construction of the Argentinian Republic) for the generation of 70% share of local labor. The municipalities send their workers' profiles to ADI-NQN, which contacts UOCRA, the one that serves as a job bank and a bridge between contractors and workers. In Piedra del Águila, there are 100 available workers, while in Villa Chocon there are 50 and in Santo Tomas merely 20. Thus, the commitment to employ local workers is guaranteed, since the Project requires more workers than the available ones at the local level. When it comes to early civil works, Districuyo has hired 60 people from Mendoza to work in the substation. Similarly, NS Austral hired 20. Now well, Districuyo and NS Astral workers are not local.

The Project construction stage will finish on February 2020, and it might reach its peak of 300-400 workers in August 2019. Besides that, in between 100 and 300 workers on average are expected. For the operation, only 15 people are expected to work.

There are no official estimates of the amount of local labor required for the other Projects. However, according to media, *"the town of Piedra del Águila began to dream of its own Vaca Muerta since Vientos Neuquinos and Los Meandros wind farms projects were launched"*. 150 workers are going to be needed for the construction stages of both projects, 100 of which can be filled with local labor. As a result, wind farms are looking to hire local workers for formwork and metal structures, welders, electricians and security personnel.⁹⁷ When it comes to Los Meandros wind farm, it is foreseen that this project can generate employment sources for around 250 people at the time of greatest activity.⁹⁸ No news regarding Picun Leufú Wind farm's work influx were found.

Besides direct jobs, the demand for local goods and services and indirect jobs are going to rise in the municipalities that will host the workforce. These workers will require goods and services to satisfy their basic needs, and will benefit existent and new businesses by increasing their commercial activity. Among the required goods and services are lodging, catering and/or restaurants, laundry shops, etc. Indirect employment, typically expressed in number of indirect jobs created for each direct job generated by the industry, is difficult to estimate even with proper data. Based on the nature of these projects (which are capital- and not labor-intensive), the significance of the impact on demand of local goods and services would not be high. Nevertheless, based on the level of development that is to come, the significance of the generation of direct and indirect employment on an accumulated level is likely to be of **medium priority**.

16.6.2 Saturation of local accommodation services and associated community health and safety risks

The arrival of workers to the Project's area of influence will increase the number of inhabitants and the subsequent demand of accommodation services. The employment expectations and business generation are behind this expected increase.

Facilities located in Piedra del Águila, being the largest town nearby, are not enough to accommodate all Project workers. According to the information collected in the field visit, there are 9 hotels located in Piedra del Águila, a total of 160 beds are available for visitors. In Picún Leufú, there are 4 hotels and in Santo Tomas only one. Given the scarce local accommodation services, the localities could be severely impacted by the increased flow of foreign workers.

When it comes to Vientos Neuquinos's contractors, Districuyo has hired 60 people from Mendoza to work in the substation. Similarly, NS Austral hired 20. Now well, Districuyo and NS Astral workers are

⁹⁷ <https://www.rionegro.com.ar/convocaran-a-150-obreros-para-la-construccion-de-parques-eolicos-989003/>

⁹⁸ <http://www.energiaestrategica.com/envision-inicia-las-obras-del-parque-eolico-los-meandros-en-neuquen-se-inauguraria-en-febrero-de-2020/>

not local and the majority spend the night at Piedra del Aguila and Picún Leufú. It is worth mentioning that the accommodation services have already collapsed, and the situation is expected to get worse.

It is not clear how the Projects will manage the workers influx. There is no supply and demand analysis to know the local offer to cover the Projects demand. When it comes to Vientos Neuquinos, Nordex, EPC contractor, is the responsible one but it has not developed it yet. When the project reaches its peak of 300-400 workers, it is not known how it will be managed. There is a hotel for sale in Piedra del Aguila, with 60 seats available, closed for the moment, but it is being considered to negotiate a rent with the owner.

It is worth mentioning that there is an already signed agreement between AES and NORDEX, in which it is not planned to build a camp; which is a high risk.

Additionally, the presence of foreign workers in nearby communities due to the absence of a Project camp increases a series of risks to the community, health and safety (see chapter 11 Community, Health, Safety and Security), including pregnancy, infectious and sexually transmitted disease cases, as well as mental health effects. Because of those risks, the local health services might be saturated as well.

Maximizing the local labor is strategical but not enough, since the local population is scarce, meaning the demand of workers overcomes the local offer. The current measure to ensure foreign workers' accommodation is to cover the lodgings of PDA, to then do the same in Picun Leufú and Villa Chocón, getting further away from the project site. Do not get further away from the Project. However, the number of hotels in the area will not be enough to satisfy the Project's increasing demand. If we add the demand of other projects, and the tourists who go to Bariloche during the high season, the situation becomes unsustainable. For instance, staying in Neuquén city would not be an option, due to the increased risk of traffic accidents and the lack of rest caused by the approximately hours round trip.

The Municipality of Piedra Del Aguila is very concerned about the greater demand for local accommodation services. There is a contingency plan that has served to respond to the already overwhelmed situation that arises with the arrival of tourists to the area. In previous opportunities, there has been the need to house stranded tourists in the local stadium, due to the closure of the road caused by extreme weather.

Since the largest hiring of workers will be local, and the contribution of foreign workers to the area will be mainly during the construction period of the project, the cumulative impact is considered temporary. Still, based on the scenario above described, it is considered of **major priority**, since action on the short term is required in order to prevent and/or mitigate negative impacts and risks associated with the saturation of accommodations services.

16.6.3 Increased traffic congestion and associated safety risks

Considering the presence of several projects in the area, all of which have access to the National Route Nº 237, a transit cumulative impact may generate negative impacts to the local population.

These impacts may increase during construction stage when Projects required more equipment, goods and workers. Although information related to flows of personnel and equipment during the construction stage was not available for this assessment, trucks and other vehicles transporting personnel, supplies and equipment to and from the projects are expected to increase.

Traffic associated with Projects construction could impact existing transportation conditions and resources by increasing congestion or delay and transportation safety risk.

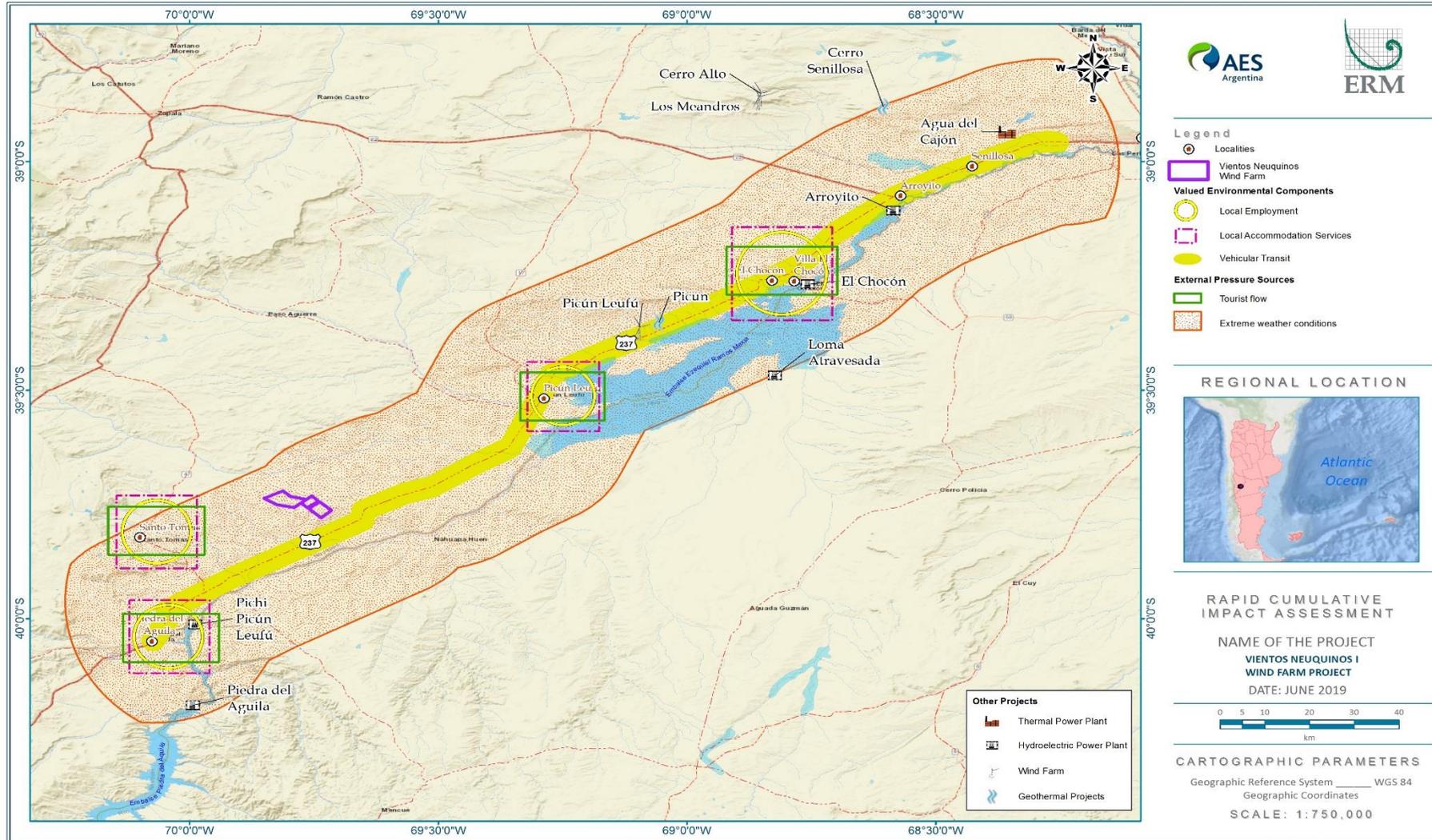
When it comes to Vientos Neuquinos, as referred in the Transportation Route Assessment (chapter 12), delays for non-Project road users would be sporadic, and would primarily be associated with

movement of the WTG components. Delays and congestion on RN 237 could be more frequent, due to its proximity to the Project site and workers staying in Piedra del Águila, Santo Tomás and Picún Leufú. In addition to WTG components and deliveries of supplies, components, and materials, worker transportation could add as many as 100 vehicle round-trips per day to RN 237 (200 total movements to or from the Project site). Additionally, the Project would impact transportation safety through physical intrusion into other traffic and through increased traffic volume. The risk of a crash or injury generally increases as overall traffic volume increases, and is generally higher in urban areas, which have higher traffic volumes and land uses closer to the roadway. The presence of heavy trucks, which have longer stopping distances and more momentum in a crash, also increases the risk and severity of traffic incidents. Excluding trucks carrying WTG components, the overall increase in Project traffic would thus incrementally increase transportation safety risks. Adverse weather, including wind, rain, and snow, would also increase transportation safety risks, a risk that would be higher for heavy trucks, particularly for trucks hauling WTG components.

The increase in traffic congestion, risk of accidents, increased particulate matter and noise due to the increased presence of vehicles and time of transportation are negative, temporary (construction stage) and local in extension. Finally, this cumulative impact has been considered of **medium priority**.

The following map shows the cumulative impacts assessed.

Figure 16-2. Cumulative impact assessment



Source: ERM

16.7 Cumulative Impact Management Framework

The effective management of cumulative impacts requires a stakeholder consultation and a collaboration of all parties that contribute to these cumulative impacts. In many cases, a minor impact of a project can result in a significant cumulative impact on a VEC. Consequently, the effective management of negative cumulative impacts transcends the capacity of a single interested party and therefore develop a management on two fronts:

- Apply a hierarchical mitigation methodology of the environmental and social impacts management generated by different projects on the VEC (ecological or human): Avoid, Minimize, Compensate.
- Develop a collaborative approach of all stakeholders to implement collective management measures, since cumulative impacts cannot be managed at a single project level. The creation of a provincial framework for the management of cumulative impacts is essential.

The management of cumulative effects is the shared responsibility of various proponents and actors. The proponent of a project can take actions to minimize the contribution of its individual effects to cumulative effects. If individual actions are not sufficient to mitigate cumulative impacts, collaborative efforts, usually at a provincial level, are required (IFC 2013). The strategy of collaborative efforts depends on the complexity of cumulative effects and can range from information exchange between proponents to multidisciplinary working groups and provincial initiatives (Franks et al 2010).

Ideally, cumulative impact management should be led by government entities that have direct influence on proponents, in order to identify the contributions of each actor and establish the mechanism to handle the cumulative effects. International best practice establishes that individual proponents should mitigate the effects generated by their project and, at a minimum, support and influence cumulative effects management strategies (IFC 2013).

According to the evaluation, in the constructive phase, the VEC with negative cumulative impacts are the local accommodation services and the vehicular transit. It should be noted that cumulative effects are accentuated by External Pressure Sources, such as the tourist flow and the extreme weather conditions.

16.7.1 Project Management

At the Project level, the following actions should be performed:

- Holding a camp for the Project would be the ideal option. Although renting local housing is shown as a viable option too, maintaining close interaction with the local population increases a series of risks, including security issues, alcohol and drugs, unintended pregnancy, infectious and sexually transmitted disease cases, as well as other related health risks effects. To reduce those risks, it is important to socialize a Code of Conduct among (direct and indirect) workers that includes references to inappropriate behaviors within the communities surrounding the project. Likewise, AES will develop a procedure for supervising subcontractors that incorporates regular inspections to their accommodations and count with an on site medical surveillance service. In case the project selects renting houses, inspection of H&S should be done, to assure that housing conditions meets minimum requirements.
- Recommended mitigation measures to address the transportation impacts described in *Section 18. Transportation Route Assessment*, include speed controls, GPS tracking, driver training, maintenance requirements, use of convoys, and time-of-day and time-of-year travel restrictions.

- Speed limits, as well as speed governor and GPS tracking devices installed on Project vehicles.
- Requirements that all Project drivers are trained and certified to drive their assigned vehicles, especially vehicles hauling WTG components.
- Completion and documentation of regular preventative maintenance, as well as as-needed maintenance on Project vehicles.
- Grouping of Project trucks (including, but not limited to trucks carrying WTG components) into convoys (multiple large trucks traveling together, with front and rear escort vehicles) would avoid some potential traffic and transportation impacts, such as by maintaining proper speed. Convoys would also consolidate traffic delays and congestion. While it would take longer for a convoy to pass a given location, use of a convoy would reduce the number of instances of such delays.
- Project truck trips—specifically trucks hauling WTG components—should be scheduled to avoid the busiest time of day on public roads. These “peak” hours typically occur in the morning and afternoon but would be determined through consultation with local authorities. This could include night-time travel for some truck trips. Consolidating truck travel outside of peak hours would reduce congestion and delay, and would also reduce the risk of crashes or other incidents. In addition, Project activities should be scheduled to avoid (to the degree possible) peak tourist seasons and holidays when traffic congestion is known to occur.

Regarding the second item, according to IFC, the collaborative nature of cumulative impact management translates into the need to implement joint actions with other actors, which generally include the promoters of other projects, government agencies, affected communities and groups of experts. The responsibility of the Project lies in the following:

- Interact and actively collaborate with cumulative impact management strategies and other existing provincial strategies;
- Participate and promote the participation of third parties in provincial monitoring programs that contribute to establishing the magnitude and importance of the cumulative impacts on the condition of a VEC.
- As a preventive management AES commits to share the information generated in its biodiversity monitoring program with local authorities to feed the species database of the province and the municipalities of Piedra del Águila and Picún Leufú,

16.7.2 Provincial Management

Based on the complexity of the cumulative effects and the different actors involved, participate in working groups with the authorities of the Provincial Government of Neuquén, the Municipalities of Piedra del Águila and Picún Leufú and Santo Tomas Development Commission.

The purpose of these spaces will be to confirm the priority of affected VECs, share information and experiences, coordinate joint efforts to mitigate cumulative effects, and encourage or improve strategies to address a joint strategy for the management of the increase of vehicular congestion and housing.

The working groups should include the collective participation of stakeholders related to the VEC: national, provincial and local government entities; project developers; affected communities and non-governmental

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entities. It is expected that technical committees will be set up to manage the different topics that affect the VEC, mainly the saturation of local accommodation services and increased vehicular transit.

AES will cooperate with joint actions between local governments and owners of local accommodation services, so that the project needs are met, without affecting the other users of these services, mainly tourists. The overwhelmed situation that arises from the tourist arrival has previously created the need to house stranded tourists in the local stadium, due to the saturation of accommodation services resulting from the closure of the N-237 road by extreme weather. Since the Municipality of PDA has already developed a Contingency Plan in response to those scenarios, the Project can work together with local authorities to collaborate with joint solutions for this problem.

Finally, in order to avoid the saturation of local health services resulting from the influx of workers during the construction phase and also the saturation of local accommodation services, AES will joint actions with local governments to support the existing services and improve their capacity.

17 COMMUNITY HEALTH, SAFETY AND SECURITY

In alignment with the Equator Principle 3 and the Performance Standard 4 of the International Finance Corporation, the assessment of community health and safety risks has been carried out, which includes the identification of the Project areas where accidents and emergency situations could occur in which communities and individuals could be affected.

The following Project activities are considered relevant during the Construction, Operation and Maintenance stages in order to assess the risks on community health, safety and security:

■ Construction Stage

- Preparation of the area for the construction of the facilities
- Location of temporary installations (trailers, sewage treatment plant, hazardous waste temporary storage, fuel / lubricant storage site, storage site for electrical supplies, storage site for equipment, etc.)
- Entry of mobile equipment
- Provision of services to the works area (electricity, water, temporary storage of waste, etc.)
- Supply of supplies for work (formwork material, pipes, cables, fuel, lubricants, etc.)
- Clearing, soil movement, compaction of land and civil engineering works of adaptation in new / reconditioned internal roads and in foundations location sites
- Adaptation of access road, internal corridors and easement strip
- Construction of cranes work platforms
- Excavation, formwork and concreting of the foundations
- Trenching and placement of wiring of underground power lines and fiber optics
- Civil construction work for the electrical transformer station as well as the attached permanent facilities: control room, toilets, storage areas, sewage treatment system, oil spill containment enclosure, etc.
- Transportation of wind turbines from the port to the site of the site.
- Transportation of construction material for the Project area
- Transportation of water in tank trucks
- Transportation of solid waste
- Elevation of wind turbines at the site
- Wind turbine installation work (final assembly and connection)
- Identification of wind turbines and placement of work safety signage
- Functional test of the facilities (connection to the public network)
- Withdrawal of temporary facilities.
- Cleaning the area
- Filling, leveling, scarification and planting of native species according to the baseline flora survey and the landscape design of the intervened sites

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- Operation and Maintenance Stage (15 employed personnel):
 - Scheduled maintenance of wind turbines
 - Scheduled maintenance of electrical infrastructure
 - Scheduled maintenance of civil infrastructure
 - Ferrous waste generation
 - Domestic type waste generation
 - Hazardous waste generation
 - Sewage effluents generation
 - Diffuse emissions of particulate material
 - Noise generation of mechanical and aerodynamic origin

Risk description related to construction, operation and maintenance activities

It is considered unlikely that community members will be present in the Project area. Nevertheless they could be impacted by the following agents:

- Electromagnetic interference and radiation with telecommunication systems;
- Abnormal load transportation (Go to Transportation Route section of this document)
- Shadow flicker (Go to Shadow Flicker section of this document)
- Annoying noises for people who pass or transit very close the wind turbines (Go Noise section of this document)
- Public access to wind turbines or to the wind energy facility substation.

Likewise, the wind farm facilities may affect the operation and flight paths of aircrafts and aviation radars.

Mitigation measures

The following list of mitigation measures will be established, monitored and analyzed through the entire lifecycle of the wind farm in order to mitigate risks on community health and safety:

- Aviation
 - Wind towers will be adequately marked with paint and lights as required by the air authority to avoid risks of aircraft collisions.
 - Aviation authorities will be notified before installation.
- Electromagnetic Interference and radiation
 - Consultation with relevant operators in establishing the location of telecommunication links and relevant buffers to be applied in order to minimize this impact.
 - Install an amplifier to boost the signal
- Public access to the Project's facilities must be limited by:
 - The use of gates on access roads.
 - Where public access is not promoted to the site and/or there are no current rights of way across the site, consider fencing the wind energy facility site, or individual turbines, to prohibit public access to the turbines.
 - Provide fencing of an appropriate standard around the substation with anti-climb paint and warning signs.
 - Prevent access to turbine tower ladders.
 - Post information boards about public safety hazards and emergency contact information.

Additionally,

- Emergency Action Plan (EAP) will be developed and implemented, which includes assistance, collaboration and disclosure (using local language and easily understandable formats) with the Affected Communities for risk analysis.
- Medical surveillance of workers will be carried out to protect public health in the area, including alcohol and drug policy
- Training to police on gender violence, ethical code and conduct of the company will be implemented in order to ensure the protection of the community
- Inspections of housing or campsites
- Proactive addressing of Affected Communities' issues and concerns.
- Reporting of monitoring results on issues that interest the Affected Communities.
- See also Section 9.4.1.1 Impacts due to Worker's Influx and Sections 19 ESMP

Residual Impact Evaluation

Considering that the mitigation measures are effectively applied, this impact was rated as low.

Impact Rating for Community Health, Safety and Security

Low

18 TRANSPORTATION ASSESSMENT

This section discusses existing traffic and transportation conditions and facilities, as well as the Project's potential impacts on local and regional transportation during the construction and decommissioning phases.

Because Project operation would involve minimal vehicular traffic, Project operations will have minimal impacts on transportation, and the operations phase is not discussed any further.

18.1 Baseline

This section provides a summary of the baseline traffic characteristics and traffic safety concerns along the roads used to transport Project components, personnel, materials, and supplies during Project construction.

Baseline data were collected using desktop methods.

18.1.1 Existing Traffic Network

Two routes will be utilized to transport materials to the Project (See Appendix H):

- WTG blades will be transported by truck from Puerto Galván in Bahía Blanca.
- All other WTG components (i.e., nacelles, hubs, tower segments, etc.) will be transported from the FAdeA manufacturing facility in Córdoba to the Project.
- WTG tower segments will be transported from Allen, Río Negro to the Project.

Some worker, material, and supply trips may originate from other locations in central and southern Argentina.

Vehicles carrying WTG components are extremely heavy, wide, and long. They can weigh several hundred tons, and require trailer trucks with up to 42 axles. In 2017, Crexel (on behalf of Nordex) prepared studies of the travel routes for WTG components from both Córdoba and Bahía Blanca. The intent of these studies was to identify feasible travel routes for WTG components. These evaluations considered the ability of roads to support the weight of WTG components, as well as the physical space necessary at intersections and curves—i.e., to ensure that turning movements could be completed without damage to surrounding structures and property. Tables 18.1 and 18.2 describe the resultant routes for Project vehicles traveling to the site from Bahía Blanca and Córdoba, respectively.

Table 18-1 Route from Bahía Blanca to the Project Site

Road	Segment	Distance Utilized (km)	Road Type	Lanes	Pavement
18 de Julio	Puerto Galván - RN3	4.4	Local Road	2	Asphalt
RN3	RN3 - RN33	8.9	National Route	2-4	Asphalt
RN33	RN3 - RN35	1.3	National Route	2	Asphalt
RN35	RN33 - RN152	242.0	National Route	2	Asphalt
RN152	RN35 - RN143	71.7	National Route	2	Asphalt
RN143	RN152 - RP20	60.0	National Route	2	Asphalt
RP20	RN143 - RN151	190.0	Provincial Route	2	Asphalt
RN151	RP20 - RP7	126.9	National Route	2	Asphalt
RP7	RN151 - RP8	23.5	Provincial Route	2	Asphalt
RP8	RP7 - RP51	7.6	Provincial Route	2	Asphalt
RP51	RP8 - RP17	58.6	Provincial Route	2	Asphalt/Gravel
RP17	RP51 - Av. Maizani	59.3	Provincial Route	2	Asphalt
Av. Maizani	RP17- Jorge Cafrune	0.17	Local Road	2	Asphalt
Jorge Cafrune	Av. Maizani - Av. Rotter	0.6	Local Road	2	Gravel
Av. Rotter	Jorge Cafrune - Av. Maizani	0.24	Local Road	2	Asphalt
Av. Maizani	Av. Rotter - RP17	0.7	Local Road	2	Asphalt
RP17	Av. Maizani - RN237	75.3	Provincial Route	2	Asphalt
RN237	RP17 - Project Site	~50.0	National Route	2	Asphalt

RN = Ruta Nacional; RP = Ruta Provincial

Source: Crexell 2017a.

Table 18-2 Route from Córdoba to the Project Site

Road Name	Segment	Distance Utilized (km)	Road Type	Lanes	Pavement
Av. Tosco (RN A019)	FAdeA – RN 36	8.0	Local Highway	2-6	Asphalt
RN36	Av. Tosco - RN A005	200.3	National Route	2-4	Asphalt
RN A005	RN36 - RN8	11.5	National Route	2-4	Asphalt
RN8	RN A005 - RN35	7.9	National Route	2	Asphalt
RN35	RN8 - RN188	209.7	National Route	2	Asphalt
RN188	RN35 - RP55	90.3	National Route	2	Asphalt
RP55	RN188 - RP105	105.6	Provincial Route	2	Asphalt
RP105	RP55 - RP12	52.1	Provincial Route	2	Asphalt
RP12	RP105 - RP13	13.1	Provincial Route	2	Asphalt
RP13	RP12 - RN143	106.0	Provincial Route	2	Asphalt and Gravel
RN143	RP13 - RP20	34.7	National Route	2	Asphalt
RP20	RN143 - RN151	190.0	Provincial Route	2	Asphalt
RN151	RP20 - RP7	126.9	National Route	2	Asphalt
RP7	RN151- RP8	23.5	Provincial Route	2	Asphalt
RP8	RP7 - RP51	7.6	Provincial Route	2	Asphalt
RP51	RP8 - RP17	58.6	Provincial Route	2	Asphalt and Gravel
RP17	RP51 - Av. Maizani	59.3	Provincial Route	2	Asphalt
Av. Maizani	RP17 - Jorge Cafrune	0.17	Local Road	2	Asphalt
Jorge Cafrune	Av. Maizani - Av. Rotter	0.6	Local Road	2	Gravel
Av. Rotter	Jorge Cafrune - Av. Maizani	0.24	Local Road	2	Asphalt
Av. Maizani	Av. Rotter - RP17	0.7	Local Road	2	Asphalt
RP17	Av Maizani - RN237	75.3	Provincial Route	2	Asphalt
RN237	RP17 - Project Site	~50.0	National Route	2	Asphalt

RN = Ruta Nacional; RP = Ruta Provincial

Source: Crexell 2017b.

Table 18-3 Route from Allen to the Project Site

Road Name	Segment	Distance Utilized (km)	Road Type	Lanes	Pavement
RN 22	Prear – RN237	80	National Route	2	Asphalt
RN237	RN22 – Project Site	134	National Route	2	Asphalt

The roads listed in Tables 18.1, 18.2 and 18.3 generally have a paved width of about 6 to 7 meters, unless noted as not being paved, and have gravel shoulders. Within cities or other settlements, the roads often have multiple lanes in each direction, center medians, and dedicated turn lanes. Other affected roads, such as those leading from ports to national routes, have varying characteristics.

The roads through the largest settlements on the routes—Córdoba and Bahía Blanca—are limited-access highways or major arterial routes with significant buffers from surrounding development. National roads such as RN35 and RN36 generally bypass other cities and towns, thus avoiding conflicts with local traffic and pedestrians. Residential and commercial development along national and provincial roads is typically set back from the edge of the roadway, even when the road passes through developed areas. For example, on the segment of RN8 in Santa Catalina, Córdoba, a small, densely developed town, structures are set back 15m from the road edge.

Table 18.4 show the range of average annual daily traffic (AADT) for National Routes between Bahía Blanca and the Project site, while Table 18.5 provides the same information for the National Routes between Córdoba and the Project site and Table 18.6 provides the same information for the National Routes between Allen, Río Negro and the Project site. No traffic volume data were available for provincial and local roads.

Table 18-4 Average Annual Daily Traffic for National Routes

Road Name	Segment	AADT/TMDA
RN252	Puerto Galván - RN3	4,001 – 10,000
RN3	RN3 - RN33	>10,000
RN33	RN33 - RN35	>10,000
RN35	RN35 - RN152	1,001 – 4,000
RN152	RN152 - RN143	1,001 – 4,000
RN143	RN143 - RP20	1,001 – 4,000
RN151	RN151 - RP7	4,001 – 10,000
RN237	RN237 - Project Site	1,001 – 4,000

Source: Ministerio de Transporte 2019⁹⁹

⁹⁹ Ministerio de Transporte. 2019. Sistema de Información Geográfica (SIG) de la Dirección Nacional de Vialidad (SIG-Vial).

<https://www.argentina.gob.ar/vialidad-nacional/sig-vial>

Table 18-5 Average Annual Daily Traffic for National Routes

Road	Segment	AADT/TMDA
Av. Tosco (RN A019)	FAdeA - RN36	>10,001
RN36	Av. Tosco - RN A005	4,001 – 10,000
RN A005	RN36 - RN8	>10,001
RN8	RN A005 - RN35	>10,001
RN35	RN8 - RN188	4,001 – 10,000
RN188	RN35 - RP55	1,001 – 4,000
RN143	RN188 - RP20	201 – 1,000
RP151	RN143 - RP7	4,001 – 10,000
RN237	RN151 - Project Site	1,001 – 4,000

Source: Ministerio de Transporte 2019¹⁰⁰

Table 18-6 Average Annual Daily Traffic for National Routes

Road	Segment	AADT/TMDA
RN 22	Prear – RN237	> 10,001
RN237	RN22 – Project Site	1,001 – 4,000

Source: Ministerio de Transporte 2019¹⁰¹

Because RN 237 and RN 22 are the primary route to Bariloche and other Patagonian vacation areas, they experience heavy traffic during summer (June-July) and winter (January-March), as well as during holiday periods year-round, such as Easter. The segment of RN 237 near the intersection with RN 22 in Arroyito carries an average of 2,000 vehicles per day, while the segment of RN 22 east of Arroyito carries an average of 8,100 vehicles per day;¹⁰² however, these roads experience frequent congestion during these peak periods. RN 237 is also used by local residents, as well as oil and gas companies working in the region.

No other readily available data or studies describe known points of congestion or delay along the proposed routes. The Google Maps traffic visualization tool suggests that traffic is generally free flowing. Only minor delays and slow points appear to reside along roads in Bahía Blanca, Córdoba, Río Cuarto, Vienticinco de

¹⁰⁰ Ministerio de Transporte. 2019. Sistema de Información Geográfica (SIG) de la Dirección Nacional de Vialidad (SIG-Vial).

<https://www.argentina.gob.ar/vialidad-nacional/sig-vial>

¹⁰¹ Ministerio de Transporte. 2019. Sistema de Información Geográfica (SIG) de la Dirección Nacional de Vialidad (SIG-Vial).

<https://www.argentina.gob.ar/vialidad-nacional/sig-vial>

¹⁰² Vialidad Nacional. 2019. Tránsito en la Red Nacional de Caminos. http://transito.vialidad.gob.ar:8080/SeICE_WEB/tmda.html

Mayo, and some segments of RN143, RN151, and RP20. These delays typically occur only at peak traffic hours in the morning and evening. (Google 2019).¹⁰³

18.1.2 Condition of Transportation Infrastructure

Based on photography captured in 2017, the roads in Tables 18.1, 18.2 and 18.3 are generally in good condition and are well maintained (Crexell 2017a). On major highways and roads, pavement markings and signage are generally intact and potholes or cracks are not very prevalent.

Portions of RP17, RN151 serve oil and gas production areas, and thus carry substantial volumes of heavy truck traffic. Ongoing public maintenance of these roads addresses degradation caused by this traffic, as well as by tourist traffic described above. The 2017 surveys identified one area in very poor condition: a 2 km segment of RN151 just south of RP20. Based on photography, this road lacks any pavement markings or signage, has continuous cracks and potholes, and has irregular and degraded pavement edges.

18.1.3 Transportation Safety

Based on the relatively low traffic volumes on most routes listed in Tables 12.4, 12.5 and 12.6 (for example, even if limited to daylight hours, 10,000 vehicles per day on RN 3 is equivalent to less than 20 vehicles per minute, in both directions) and the limited number of major intersections or interchanges in rural areas, crash rates on affected roads in rural areas are likely to be low. Crash rates are likely to be higher in urban areas, such as near Córdoba.

18.2 Impacts

Traffic associated with Project construction could impact existing transportation conditions and resources in three primary ways: increased congestion or delay, degradation of affected road infrastructure, and increased transportation safety risk.

This section discusses the Project's transportation impacts, based on the impact assessment framework provided in Section 9. Impacts associated with Project decommissioning are expected to be similar to those experienced during construction; therefore, decommissioning is not discussed in any further specific detail.

18.2.1 Project Activities Impacting Transportation Resources

Project construction would involve the following activities with the potential impacts to transportation:

- The movement of WTG components from ports to the Project site. Each WTG would require 10 separate haul movements (Scudelati 2017), all of which will be oversized loads—either extremely long, as in the case of the blades or towers segments, or wide and/or heavy, for nacelles and other components. Project construction would require a total of 300 round-trips to deliver WTG components;
- Worker trips to and from the Project site via minibuses and other multi-passenger vehicles. Project construction would require an average of 200 employees, and a peak of up to 400. This analysis assumes that approximately equal numbers of workers would travel to the Project site from Piedra del Águila, Santo Tomás and Picún Leufú, and an average of four workers per vehicle (50 to 100 round trips per day);

¹⁰³ The "typical traffic" tool shows the generalized average speed of traffic, based on historical data collected from smartphones running on Android software. These data are only published visually (i.e., specific speeds are not provided). Google does not provide data on traffic congestion, volume, or mode of transportation. Google. 2019. *Plan Your Commute or Trip*. <https://support.google.com/maps/answer/7565193?co=GENIE.Platform%3DAndroid&hl=en>

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- Delivery of construction materials (i.e., aggregate, concrete rebar, piping, or other special materials); substation, transmission line, and telecommunication components;
- Delivery of construction equipment to and from the site; and
- Consumable supplies (water, petrol, etc.).

Construction materials, equipment and consumable supplies would be delivered via conventional trucks (i.e., tractor trailers or dumpers). The Project has not determined the number of such truck trips; however, the Project will likely generate several truck trips per day during construction.

This SLIP assumes that WTG component deliveries would include front and rear escort vehicles and/or police vehicles to halt or otherwise manage non-Project traffic. Escort vehicles would have exterior flashing lights, flags, high visibility markings, and other identifying characteristics, as required by law. Pilot vehicles should be equipped with radios or other communication systems to maintain contact with the escorted truck and other escort drivers. Consistent with international best practice, this SLIP also assumes that escort and police vehicles would be supplemented with flaggers and spotters at key locations, to reduce or avoid damage to infrastructure or property.

18.2.2 Receptor Sensitivity

Receptors for transportation impacts include other users of the public roads described in Section 18.1.1. Road users near oil and gas areas in Neuquén and La Pampa, and along tourist routes in Neuquén are likely accustomed to periodic heavy traffic congestion, including heavy trucks. Other users are less likely to be comfortable with such traffic or substantial congestion; however, as residents of a rural part of Argentina, these users likely have experience dealing with unexpected road conditions. As a result, based on the methodology described in Section 9.2, receptor sensitivity for transportation impacts is medium.

18.2.3 Discussion of Impacts

This section discusses transportation impacts in terms of congestion and delay, transportation infrastructure, and transportation safety.

18.2.3.1 Traffic Congestion and Delay

As described above, vehicles carrying WTG components are extremely large. These trucks are oversized loads that could require more than just a single lane on straight-line road segments. At intersections or sharp curves, WTG component trucks would likely block the entire intersection or road. Trucks carrying WTG components would also move at slower speeds and would be dangerous to pass.

As a result, delivery of WTG components would cause temporary delays for non-Project road users. Vehicles following the trucks paths would be delayed by the slow speed of the trucks and the inability to safely pass. Vehicles traveling in the opposite direction would need to slow to pass on straight road segments, and may need to stop entirely on curves or at intersections (including those near delivery ports).

Some construction equipment may also require oversize-load trucks, although substantially smaller than trucks carrying WTG components.

Other Project trucks and buses would be similar in size and weight to trucks normally seen on public roads throughout Argentina. These truck trips would typically represent an incremental increase in existing traffic, and would not likely generate congestion or delay.

Overall, delays and for non-Project road users would be sporadic, and would primarily be associated with movement of the WTG components. Delays and congestion on RN 237 could be more frequent, due to its proximity to the Project site and workers staying in Piedra del Águila, Santo Tomás and Picún Leufú. In addition to WTG components and deliveries of supplies, components, and materials, worker transportation

could add as many as 100 vehicle round-trips per day to RN 237 (200 total movements to or from the Project site).

While some non-Project road users would find the delays to be unacceptable, Project activities would not prevent non-Project road users from reaching their destination, and would not permanently block access to other roads or uses. Project-related traffic would also be temporary, lasting for less than one year. As a result, Project-related traffic congestion and delay would have a medium magnitude, and the Project's overall impacts on traffic congestion and delay would be **moderate**.

18.2.3.2 Degradation of Transportation Infrastructure

Project vehicles, especially the extremely large vehicles carrying WTG components, could degrade roads faster than typical automobiles, particularly along pavement edges or where cracks or potholes already exist. As described above, each WTG component trip would be carefully managed with pilot vehicles, flaggers, and spotters. Based on the Crexel studies, the bridges, culverts, and pavement, on these roads would be sufficient to support the WTG components. Other Project-related heavy vehicles would be similar to non-Project heavy vehicles (including those associated with oil and gas activity) already present on public roads. Due to the number of Project-related truck trips and the physical characteristics of trucks carrying WTG components, Project-related road degradation would have a medium magnitude, and the Project's overall impacts on the road infrastructure would be **moderate**.

18.2.3.3 Transportation Safety Impacts

The Project would impact transportation safety through physical intrusion into other traffic and through increased traffic volume. To avoid trucks carrying WTG components, non-Project vehicles may need to (or may be directed to) pull onto the gravel shoulders to allow larger vehicles to pass. Also transportation safety would be impacted in cases where non-Project traffic must stop altogether (such as at intersections or on sharp curves), with vehicles approaching stopped traffic if not sufficiently warned. Project-related traffic could also delay emergency response.

The risk of a crash or injury generally increases as overall traffic volume increases, and is generally higher in urban areas, which have higher traffic volumes and land uses closer to the roadway. The presence of heavy trucks, which have longer stopping distances and more momentum in a crash, also increases the risk and severity of traffic incidents. Excluding trucks carrying WTG components, the overall increase in Project traffic would thus incrementally increase transportation safety risks. Adverse weather, including wind, rain, and snow, would also increase transportation safety risks, a risk that would be higher for heavy trucks, particularly for trucks hauling WTG components.

As stated in Section 18.1, AES determined that the identified routes to the Project site from Córdoba and Bahía Blanca were feasible without damage to surrounding properties or structures. As a result, Project construction would not require any displacement of residents or businesses. In some cases, transport of WTG components could require temporary removal of roadside signage or streetlights.

Overall, Project-related increases in transportation safety risk would have a medium magnitude, and the Project's overall impacts on transportation safety would be **moderate**.

18.3 Mitigation Measures and Residual Impact

Recommended mitigation measures to address the transportation impacts described in the Impact Assessment Section include speed controls, GPS tracking, driver training, maintenance requirements, use of convoys, and time-of-day and time-of-year travel restrictions.

- Speed limits, as well as speed governor and GPS tracking devices installed on Project vehicles.

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- Requirements that all Project drivers are trained and certified to drive their assigned vehicles, especially vehicles hauling WTG components.
- Completion and documentation of regular preventative maintenance, as well as as-needed maintenance on Project vehicles.
- Grouping of Project trucks (including, but not limited to trucks carrying WTG components) into convoys (multiple large trucks traveling together, with front and rear escort vehicles) would avoid some potential traffic and transportation impacts, such as by maintaining proper speed. Convoys would also consolidate traffic delays and congestion. While it would take longer for a convoy to pass a given location, use of a convoy would reduce the number of instances of such delays.
- Project truck trips—specifically trucks hauling WTG components—should be scheduled to avoid the busiest time of day on public roads. These “peak” hours typically occur in the morning and afternoon but would be determined through consultation with local authorities. This could include nighttime travel for some truck trips. Consolidating truck travel outside of peak hours would reduce congestion and delay, and would also reduce the risk of crashes or other incidents. In addition, Project activities should be scheduled to avoid (to the degree possible) peak tourist seasons and holidays when traffic congestion is known to occur.

The tables below summarize the Project’s impacts on congestion and delay, infrastructure degradation, and transportation safety, considering the mitigation measures described above.

<i>Impact description</i>	
Traffic congestion and delay	
<i>Mitigation measures</i>	
Speed controls, GPS tracking, driver training, maintenance requirements, use of convoys, and time-of-day travel restrictions.	
<i>Residual Impact evaluation</i>	
Use of mitigation measures would reduce the pre-mitigation impacts.	
Impact rating for traffic congestion and delay	Minor

<i>Impact description</i>	
Degradation of road infrastructure	
<i>Mitigation measures</i>	
None	
<i>Residual Impact evaluation</i>	
Use of embedded controls (pilot vehicles, police escort, flaggers, and spotters) would avoid damage to structures and property.	
Impact rating for road infrastructure degradation	Moderate

<i>Impact description</i>	
Transportation safety risk	
<i>Mitigation measures</i>	
Speed controls, GPS tracking, driver training, maintenance requirements, use of convoys, and time-of-day travel restrictions.	
<i>Residual Impact evaluation</i>	
Use of mitigation measures would reduce the pre-mitigation impacts.	
Impact Rating for traffic congestion and delay	Minor

18.4 References

Crexel. 2017a. Relevamiento de Ruta Bahia Blanca-Picun Leufu, Parque Ecológico Nordex.

Crexel. 2017b. Relevamiento de Ruta Cordoba-Picun Leufu, Parque Ecológico Nordex.

19 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

This Section present a summary of the measures committed by AES to control, mitigate and monitor the impacts that were identified in this SLIP.

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/ Frequency	Supervision responsibility	Reporting requirements
Impacts on Noise Levels	Operation and Maintenance	<ul style="list-style-type: none"> ■ Use the stakeholder engagement plan and grievance mechanism to monitor potential complaints for noise nuisances, and define corrective action ■ Operating turbines in reduced noise mode. ■ Curtailing turbine operations above the wind speed at which turbine noise becomes unacceptable in the project-specific circumstances. ■ Regular maintenance of wind turbines. ■ Design and conduct a monitoring program for the operational stage according to the IEC 61400-11 Wind Turbines – Part 11: Acoustic Measurement Techniques (2006) as required by the Wind Energy Environmental Health and Safety Guideline (IFC, 2015). 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> ■ Results from noise monitoring ■ Site inspection ■ Maintenance of wind turbines logbook 	Before and during operation and maintenance	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department
Impacts on Birds	Operation and Maintenance	<ul style="list-style-type: none"> ■ Avoid the use of red lights to minimize the attraction bird species. ■ Consider using a system of flashing strobe lights or LEDs on the turbines to be visible at night. Constant light not 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> ■ Site inspection ■ Register of bird mortality 	During operation and maintenance	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
		<p>used at night, as it may attract nocturnal migrants or predatory birds.</p> <ul style="list-style-type: none"> ■ The number of lights placed in the wind turbines will not be greater than necessary for aviation, to affect as little as possible migratory birds or nocturnal habits. ■ Use of strobe white lighting in the towers (with the longest possible interval between pulses, and the pulses synchronized for all turbines within the wind farm). ■ Maintain a bird mortality register for the windfarm, recording all carcasses within 500 m of any project element and apply temporary shutdown, to lock the rotors in place during peak migration periods or relocation of towers if mortality is significant. Depending on the results of these monitorings, then the Project will establish a Biodiversity Management Plan in line with IFC Performance Standard 6. ■ Regular checking of the vacuums or holes in the towers for nesting bird species. ■ On-site wildlife monitoring surveys 		<ul style="list-style-type: none"> ■ Maintenance logbook of the vacuums or holes in the towers 			Vientos Neuquinos HSE Department
Impacts on Bats	Operation and Maintenance	<ul style="list-style-type: none"> ■ Use of the starting speed to avoid the impact of collisions and barotrauma ■ On-site wildlife monitoring surveys 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> ■ Site inspection ■ Register of bats mortality 	During operation and maintenance	Vientos Neuquinos	Report from site HSE Officer of Vientos Neuquinos

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
						HSE Department	Contractor to Vientos Neuquinos HSE Department
Impacts on Landscape	Operation and Maintenance	<ul style="list-style-type: none"> ■ A detailed visual and landscape study, assessing: ■ Project description (wind turbine layout, wind turbines, aviation obstacle lighting, substation facility, power lines, on site access tracks) ■ People's perception of wind farms. ■ The view shields (zones of visual impacts). ■ Planning considerations (local planning policy framework, regional planning policy framework, particular provisions). ■ Landscape units within the view shield. ■ Seen area analysis. ■ Assessment of indicative viewpoints from publicly accessible locations. ■ Impact on residential properties. ■ Cumulative impact ■ Night lighting assessment 	Vientos Neuquinos S.A.	<ul style="list-style-type: none"> ■ Report of the Visual and Landscape Study 	Before the operation phase	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department
Impacts on Soil	On site preparation & Construction	<ul style="list-style-type: none"> ■ Adequate planning of road and drainage construction. 	Vientos Neuquinos S.A.	<ul style="list-style-type: none"> ■ Photographic evidence of the soil and 	After construction phase	Vientos Neuquinos	Report from site HSE Officer of Vientos

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
		<ul style="list-style-type: none"> ■ Once the wind turbines are placed, the foundations will be fixed with a concrete grout and covered with the previously extracted soil (first the non-organic one and then, if it existed, with the organic soil object of edaphic selection). Scarify the environment of each foundation. ■ Carry out periodic monitoring of sewage effluents. ■ The collected soil covered with low density polyethylene to avoid blasting by wind. 		<ul style="list-style-type: none"> ■ vegetation separation. ■ Photographic evidence of the pile of soil removed. ■ Photographic evidence of the tasks of restitution of the topography and surface decompaction. 		HSE Department	Neuquinos Contractor to Vientos Neuquinos HSE Department
Impacts on Water	On site preparation & Construction	<ul style="list-style-type: none"> ■ Have a properly constructed Transitory Waste Management Facility. ■ Train personnel in proper waste management. ■ Carry out periodic monitoring of sewage effluents. ■ Carry out adequate planning for the construction of roads and drainages to avoid the affectation of run-off and temporary and permanent accumulations. ■ Ensured the rapid closing of cable laying ditches. ■ Implement a Waste Management Program. 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> ■ Hydrologic report 	After construction phase	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
Impacts from Shadow Flickering	Operation and Maintenance	<ul style="list-style-type: none"> Install natural fences like shrubs or trees closer to the residential windows, this could reduce the impact of shadow flickering in the properties. Install a control software to shut down the blade spinning during the specific hours of shadow flickering. Implement a grievance mechanism to record the frequency of shadow on receptors. 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> Site inspection Evidence from the actions established in the grievance mechanism Photographs of natural fences 	Before and during operation and maintenance	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department
Impacts on Economy and Employment	Construction	<ul style="list-style-type: none"> EPC Contractor will develop and implement recruitment procedures, including reasonable disclosure of open positions to the local union (UOCRA) and the local authorities, considering unskilled, semi-skilled and skilled workforce. Coordinate with the EPC Subcontractors active on the Project to also foster and prioritize local employment wherever possible. AES will establish a mechanism to verify that EPC Contractor and subcontractors respect this requirements, for instance via audits. 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> Contractor Recruitment Procedure Contractor Supervision Mechanism 	ASAP	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department
Impacts on Livelihoods	Construction	<ul style="list-style-type: none"> Hire in the short term a local expert with experience in community relations, in order to maintain a communication channel with stakeholders and particularly with the nearby family. 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> Community Relations Specialist hired 	ASAP	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
		<ul style="list-style-type: none"> Conduct a survey of the areas used by the Nearby family for cattle grazing and water sourcing to identify if and how much the area juxtaposes with the Project area. If this is the case, AES must either provide for the transfer of the animals of the nearby family to an area with pastures and with water available -to mitigate resource access restriction- or to offer a sufficient economic compensation. 		<ul style="list-style-type: none"> Survey of the land used by the Project stakeholder 			Vientos Neuquinos HSE Department
Impacts on Land	Construction	<ul style="list-style-type: none"> Vientos Neuquinos has negotiated a right-of-way with the co-owners for the total area of 8.5 ha. AES has recently signed and corresponding agreement with the co-owners. Alternatives are available in case the easement negotiations do not reach an agreement. If the right-of-way easement negotiations are delayed or if no agreement is reached with the co-owners, AES is authorized by the Neuquén Power Provincial Entity (EPEN) to access the Project area through to the electroduct easement during the construction phase. 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> Right-of-way Easement Agreement signed Alternatively, EPEN authorization to access Electroduct Easement 	ASAP	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
		<ul style="list-style-type: none"> The Neuquén Investment Agency (ADINQN)¹⁰⁴ has stated that they have planned Provincial Route N° 47 expansion in the Santo Tomás area, to provide public access to the Project. This route is planned to be operational in the next three months. The second option for permanent access to the Project will be the extension of the Provincial Route N° 47 					
Impacts from Workers' Influx	Construction	<ul style="list-style-type: none"> AES will implement the following actions: <ul style="list-style-type: none"> Ensure that main contractors and subcontractors develop and enforce a Code of Conduct among workers (direct and indirect) that includes references to inappropriate behaviors while interacting with surrounding communities. Induction and training including topics such as unacceptable conduct toward local community members, specifically women; and national laws and internal policies 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> Worker Code of Conduct with community behavior guidelines Induction and training guidelines Contractor Supervision Procedure 	ASAP	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department

¹⁰⁴ Source: Interview with Executive Director Lic. Carlos Pereyra and Coordinator of Technological Innovation Projects, Eng. Hipolito Salvatori

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
		<p>that address sexual harassment and gender-based violence.</p> <ul style="list-style-type: none"> ■ Ensure that supervision programs for main contractors and subcontractors are developed and implemented, regarding several topics: accommodations, potable water, effluents and waste management, food providing, local transportation, and workplace safety. ■ A procedure for supervising contractor and subcontractor performance. ■ All precedent incorporate in a Workers and Accommodation Plan which will include logistic and accommodation Plan to handle worker's influx for the Project. 					
Impact on Traffic	Site preparation, construction, and decommissioning	<ul style="list-style-type: none"> ■ Speed limits, as well as speed governor and GPS tracking devices installed on Project vehicles. ■ Requirements that all Project drivers are trained and certified to drive their assigned vehicles, especially vehicles hauling WTG components. 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> ■ Speed limits: police reports and GPS logs (if applicable). ■ Convoys and time-of-day restrictions: Daily or weekly schedules. ■ Driver training and vehicle maintenance 	Quarterly reviews of driver training and vehicle maintenance logs. As-needed (minimum weekly) review of police reports and GPS logs for speeding.	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
		<ul style="list-style-type: none"> ■ Completion and documentation of regular preventative maintenance, as well as as-needed maintenance on Project vehicles. ■ Grouping of Project trucks (including, but not limited to trucks carrying WTG components) into convoys (multiple large trucks traveling together, with front and rear escort vehicles) ■ Project truck trips—specifically trucks hauling WTG components—should be scheduled to avoid the busiest time of day on public roads. In addition, schedule Project activities to avoid (to the degree possible) peak tourist seasons and holidays when traffic congestion is known to occur. 		and training logs.	Daily schedules for truck deliveries (mandatory for all trucks hauling WTG components)		
Impacts on Accommodations and Food Services	Construction	<ul style="list-style-type: none"> ■ The Project must collaborate with local authorities to address road-closing and accommodation-saturation scenarios jointly. ■ Maximizing the local labor is an alternative but will not be enough to address the issue since the local working-population is scarce and Project demand for workers will surpass the local supply. Currently the 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> ■ Evidence of collaboration with Local Authorities to address road closing and accommodation saturation scenarios ■ Evidence of Worker 	ASAP	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department

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Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
		<p>Project plans to ensure foreign workers' accommodation prioritizing closer locations, securing lodging in Piedra del Águila, Picún Leufú and Villa Chocón first.</p> <ul style="list-style-type: none"> ■ Renting local housing is an alternative; however, close interaction with local population increases community health risks, including pregnancy and communicable diseases incidence. ■ To reduce such risks, it is important to communicate and enforce a Code of Conduct among workers (direct and indirect) that includes references to inappropriate behaviors while interacting with surrounding communities. A procedure for supervising subcontractors that incorporates regular inspections to their accommodations will be develop. 		<p>Accommodation in close locations, including local hostels and housing.</p> <ul style="list-style-type: none"> ■ Code of Conduct with community behavior guidelines. 			
Impacts on Economy and Employment	Operation	<ul style="list-style-type: none"> ■ Impact on employment and the economy will be positive but non-significant and hence no enhancement measures are expected. 	NA	NA	NA	NA	NA
Impacts on Economy and Employment	Decommissioning	<ul style="list-style-type: none"> ■ Impact on employment and the economy will be positive but non-significant and hence no enhancement measures are expected. 	NA	NA	NA	NA	NA

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
Impacts on Land and Livelihoods	Decommissioning	<ul style="list-style-type: none"> ■ At the time of decommissioning, the Project proponent will conduct an assessment of possible uses for the land once the wind farm has been dismantled and site rehabilitated, in coordination with local authorities. Prioritize public use and/or benefit. 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> ■ Land Future Use Assessment, in coordination with Local Authorities 	During operation, during Decommissioning Planning	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department
Impacts on Community HS	Site Preparation, Construction, Operation and Maintenance	<ul style="list-style-type: none"> ■ Aviation <ul style="list-style-type: none"> ○ Wind towers will be adequately marked with paint and lights as required by the air authority to avoid risks of aircraft collisions. ○ Notify aviation authorities before installation. ■ Electromagnetic Interference and radiation <ul style="list-style-type: none"> ○ Consultation with relevant operators in establishing the location of telecommunication links and relevant buffers to be applied in order to minimize this impact. ○ Install and amplifier to boost the signal ■ Public access to the Project's facilities must be limited by: 	Vientos Neuquinos I S.A.	<ul style="list-style-type: none"> ■ Site inspections ■ Photographs of the mitigation measure activities executed ■ Interviews with the Affected Community ■ Copy of the EAP ■ Example of the Workers' Medical surveillance format 	Entire lifecycle of the wind farm	Vientos Neuquinos HSE Department	Report from site HSE Officer of Vientos Neuquinos Contractor to Vientos Neuquinos HSE Department

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
		<ul style="list-style-type: none"> ○ The use of gates on access roads. ○ Where public access is not promoted to the site and/or there are no current rights of way across the site, consider fencing the wind energy facility site, or individual turbines, to prohibit public access to the turbines. ○ Provide fencing of an appropriate standard around the substation with anti-climb paint and warning signs. ○ Prevent access to turbine tower ladders. ○ Post information boards about public safety hazards and emergency contact information. ■ Develop and implement an Emergency Action Plan (EAP), which includes assistance, collaboration and disclosure (using local language and easily understandable formats) with the Affected Communities for risk analysis. ■ Medical surveillance of workers will be carried out to protect public 					

Impact	Project Phase	Mitigation/Monitoring measure	Responsibility for ensuring implementation	Means of verification that mitigation has been implemented	Timelines/Frequency	Supervision responsibility	Reporting requirements
		<p>health in the area, including alcohol and drug policy</p> <ul style="list-style-type: none"> ■ Training to police on gender violence, ethical code and conduct of the company in order to ensure the protection of the community ■ Inspections of housing or campsite ■ Proactive addressing of Affected Communities' issues and concerns. ■ Reporting of monitoring results on issues that interest the Affected Communities. 					

In addition to the mitigation measures other commitments that must be assumed are those cited in the Environmental License (See Section 2.5.2.1) and in the Environmental and Social Management System (See Section 20).

20 ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM (ESMS)

According to the requirement of the Ente Nacional Regulador de la Electricidad (ENRE), an EHS Management System needs to be certified within the first 180 days of operation. Consequently, AES is developing a Management System to comply with such requirement, which in addition will incorporate Social and Biodiversity elements in line with IFC Performance Standards. The Environmental and Social Management System (ESMS) for ‘Energetica I’ wind farm, will be developed for the different project stages -construction, operation, and site decommissioning and restoration- and will incorporate the following commitments:

Elements of an ESMS	Commitments
<p>Policy</p>	<p>Environmental (including Biodiversity), H&S and Social Policies signed by managers, employees and contractors reflecting acknowledgement and commitment with the implementation.</p> <p>HR Policy developed and communicated to all workers.</p>
<p>Identification of risks and Impacts</p>	<p>Update of environmental, biodiversity, social, labor and H&S risks associated with the Project in all its stages, incorporating risks in the supply chain.</p> <p>Risks and impacts identification process will be updated on recent baseline data and will be periodically updated based on environmental and social information gather by experienced environmental and social specialists that will be part of the ESMS team. A stakeholder mapping and local perceptions analysis will be updated periodically to identify social risks of the projects within the project’s area of influence. In addition, biological baseline studies will be updated at least in two different seasons (considering migratory and breeding seasons) in the project area. Risks to birds and bats will be supplemented through a Collision Risk Modeling (CRM). For the same purpose, information on Ecosystem Services Impact Analysis provided in this report will be updated through all stages of the Project. Finally, a Flooding & Erosion Risks Study will be performed in order to evaluate alluvial risks in the project area due to potential seasonal extreme rains.</p>
<p>Management Programs</p>	<p>Supplement the Project’s existing Action Plans with the following Management Programs:</p> <p>Health and Safety</p> <ul style="list-style-type: none"> ▪ Occupational H&S Management Plan; ▪ Community H&S Management Plan; ▪ Traffic Management Plan; and ▪ Emergency Preparedness and Response Plan. <p>Environmental</p>

Elements of an ESMS	Commitments
	<ul style="list-style-type: none"> ▪ Biodiversity Management Plan; ▪ Water Management Plan; ▪ Waste and Effluents Management Plan; ▪ Hazardous Substances and Materials Management Plan; and ▪ Noise & Flickering Management Plan. <p>Social</p> <ul style="list-style-type: none"> ▪ Stakeholder¹⁰⁵ Engagement Plan; ▪ Grievance Mechanism. <p>Human Resources</p> <ul style="list-style-type: none"> ▪ Internal Work Regulations; ▪ Recruitment and Selection of Personal; ▪ Staff Training; ▪ Performance Management; ▪ Management of Living Conditions at Project Area/Campsites; ▪ Medical Assistance for Work Related Incidents; ▪ Grievance mechanism for workers, contractors and subcontractors; ▪ Management of Employment Termination; ▪ Relocation of Pregnant Employees; ▪ Management of Worker Common Regime and Civil Construction Regime Remuneration; ▪ Crisis Plan in case of strike and work stoppage; ▪ Collective Bargaining Process With Workers Union and Project Committee; ▪ Follow-up of Collective Bargaining Agreement; ▪ Retrenchment Plan ; ▪ Third Parties Management Plan; ▪ Contractor /Subcontractor Management Plan and ▪ Security Personnel Plan.

¹⁰⁵ “Stakeholders are persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively.” (IFC, 2007)

Elements of an ESMS	Commitments
	<p>The Management Plans have the purpose of addressing the risks and impacts identified and prioritized. Each plan has measurable events to the extent possible, with elements such as performance indicators (KPI), targets, or acceptance criteria that can be tracked over defined time periods, and with estimates of the resources and responsibilities for implementation.</p>
<p>Organizational Capacity and Competency</p>	<ul style="list-style-type: none"> ▪ Environmental and social roles, responsibilities and authorities defined within an organizational structure in order to well-implement the ESMS. ▪ Experienced staff assigned. At least, one responsible for the implementation of the Management System, who will be an HSE specialist with extensive experience in biodiversity management familiar with IFC Performance Standards, assisted by a team of other professionals with experience in social management, community health and community engagement. ▪ Environmental and social responsibilities communicated to key relevant personnel and the rest of the organization. ▪ Relevant training programs given to the HSE personnel, including social and biodiversity related topics. Environmental and social responsibilities communicated to key relevant personnel and the rest of the organization. ▪ Public Affairs role, with excellent communication skills to manage communication with third parties, well trained and in close coordination with ESMS Manager.
<p>Emergency Preparedness and response</p>	<ul style="list-style-type: none"> ▪ Development of an Emergency Action Plan (EAP), which includes assistance and collaboration with the Affected Communities¹⁰⁶ for risk analysis. ▪ Disclosure of EAP with the Affected Communities. ▪ Inclusion of representatives of the communities in the emergency response brigades, training programs and drills. ▪ Coordination with local authorities for the alignment of the Response Plan with the guidelines of the National Civil Defense System at the local level to respond to emergencies due to natural hazards.
<p>Stakeholder Engagement</p>	<ul style="list-style-type: none"> ▪ Stakeholder's identification and mapping. ▪ Development and implementation of a Stakeholder Engagement Plan (SEP) with the following specifications: -Annual revision and update, according to results of the updated stakeholder mapping.

¹⁰⁶ "Local communities directly affected by the project" (IFC, 2012)

Elements of an ESMS	Commitments
	<p>-The SEP must be an active tool tailored to the Project's risks and impacts.</p>
<p>Communications and Grievance Mechanisms</p>	<ul style="list-style-type: none"> ▪ Development and implementation of a Grievance Mechanism that complies with the following: <ul style="list-style-type: none"> -Available and communicated to all relevant internal and external Stakeholders as early as possible in the Project development phase. -Performance and maintenance of a grievance registration system, in order to systematize results and use the information to update the Social Programs.
<p>Ongoing Reporting to Affected Communities</p>	<ul style="list-style-type: none"> ▪ Submission of monitoring results to the Authority, as requested in the Environmental License. ▪ Proactive addressing of Affected Communities' issues and concerns. ▪ Ongoing communication in order to avoid risks and impacts of the Project. ▪ Immediate update of ESMS if new environmental or social risks emerge. ▪ Reporting of progress on implementation of environmental and social commitments. ▪ Reporting of monitoring results on issues that interest the Affected Communities. ▪ Information disclosure that uses local language and easily understandable formats. <p>According to IFC's guidelines, the frequency of this communication will be proportional to the scale of stakeholders' concerns, but it should be at least annual.</p>
<p>Monitoring and Review</p>	<ul style="list-style-type: none"> ▪ Biological Monitoring Program for all the Project stages (, construction and operation), including birds and bats. ▪ Including a seasonal approach for Birds and bats Monitoring Program, focused on species of heightened concern, in order to assess collision-related impacts to bats and birds at land-based wind energy facilities for a minimum of one to three years subsequent to the initiation of wind farm operation. ▪ Development of an Effluent Monitoring Program in order to identify water quality prior to discharges and if is necessary apply corrective actions. ▪ An Archaeological/Paleontological chance findings procedure developed.

Elements of an ESMS	Commitments
	<ul style="list-style-type: none"> ▪ Development of Social Monitoring Programs as well as indicators to evaluate efficiency on the mitigation measures implemented. ▪ Community H&S related monitoring programs developed, including noise and flickering compliance testing. ▪ Representatives from Affected Communities involved in monitoring activities. ▪ Documentation of monitoring results to track performance and compare these against the previously established points of reference or requirements in the management program, and to identify and reflect the necessary corrective and preventive actions. ▪ Development of internal inspections and audits, to verify compliance and progress towards the desired outcomes of the management program. ▪ Performance of E&S Independent Review including site visit to the Project through an Independent Environmental and Social Consultant. ▪ Development of a Contractor/Subcontractor Supervision Procedure that: <ul style="list-style-type: none"> - Describes how and when the contractors' environmental and social performance will be reviewed; - Outlines the mechanisms that will be used (e.g. internal document reviews, random or scheduled audits, etc.); - Indicates general measures to implement corrective actions; - Introduces Key Performance Indicators - Verifies the health and safety performance of subcontractors.

The ESMS will apply over the entire Project life cycle, including construction, operation, and site decommissioning and restoration. It applies to the oversight activities conducted by AES Argentina as well as Nordex, who will serve as the Project's engineering, procurement, and construction (EPC) contractor. Security aspects during construction will be very important, in particular prequalification of suppliers, who must have, in turn, management systems, and supervisory personnel with adequate qualifications on field work to ensure compliance with the management system.

Nordex has communicated the following degree of progress regarding the following procedures:

Table 20-1. Status of Nordex documents

Document		Status
Workforce recruitment management policies		Ok
Procedures for workers influx management	Housing	In process
	Drinking water	Ok
	Effluents	Ok
	Waste management	Ok
	Food supply	Ok
	Local transportation	Ok
	Behavior of workers with respect to host communities	Ok
	Camping sites	N/A
	Security in working areas	In process
Drugs and alcohol prevention Plan		Ok
Labor relations plan and workers' complaints mechanism		In process
Procedure for Project residents inspections and visits		Ok
Workers behavior instructions		Ok
Rules of conduct before communities, including the avoidance of sexual harassment and gender violence		Missing
HSE Project specific procedures		Ok
Induction program for new workers and training program		
Project's specific control programs	Food supply	Ok
	Drinking water	Ok
	Housing	In process
Health and safety risks management Programs		Ok
External Grievance Mechanism		Ok
Supplier development Program		Ok

APPENDIX A HSE REGULATIONS AND PERMITS

Environmental Regulations

REGULATIONS	DESCRIPTION	ASSOCIATED PERMITS
<i>National Regulations</i>		
<i>General Environmental</i>		
National Constitution of the Republic of Argentina (1994)	<p>The National Constitution guarantees all residents the right to a healthy, balanced environment, suitable to human development, and imposes an affirmative duty on each resident to preserve the environment for future use (Article 41).</p> <p>It requires the redress of the environmental damage to begin with the obligation to restore the environment to its status ante quo, and grant standing to individuals, including environmental civil associations and the federal Ombudsman, to sue the government and private individuals to enforce and environmental right recognized in the Constitution, international treaty or federal law (Articles 41 and 43).</p> <p>The Constitution directs the national government to issue rules containing minimum environmental protection standards and mandates the provinces to enact legislation complementary to these federal regulations (Article 41).</p> <p>The National Constitution establishes that the provinces have the primary domain over the natural resources in their territory (Article 124).</p> <p>It also establishes the distribution map of competencies between the federal and provincial governments. According to this distribution, the provinces retain all the power not expressly delegated to the federal government in the Constitution (Article 121).</p> <p>Among the powers delegated to the federal government is to pass the Civil, Commercial, Criminal, <u>Mining</u> and Labor and Social Security Codes (Article 75).</p>	
National Law N° 25.675 and National Decree N° 2.413/00 General Environmental Law	<p>This regulation establishes the minimum environmental protection standards for the adequate and sustainable management of the environment, the preservation and protection of biological diversity and the implementation of sustainable development. It establishes that any work or activity that is likely to significantly degrade the environment, any component thereof or affect the people's quality of life, is subject to an <u>environmental impact assessment</u>.</p> <p>The General Environmental Law defines <u>environmental damage</u> as any relevant alteration that modifies negatively the environment, its resources, the balance of ecosystems, or collective goods or values.</p> <p>Anyone that causes the environmental damage will be responsible to restore the environment to its status ante quo.</p>	

	<p>Law N° 25.675 also establishes that any individual or legal entity performing activities hazardous to the environment must obtain <u>insurance</u>, which shall guarantee financing the reversion of any possible damage to the environment; likewise, on a case-by-case basis and depending on the possibilities, it may create an environmental restoration fund to instrument restoration actions.</p> <p>In addition, it establishes regulations on environmental damage, citizen participation, public hearings, etc.</p>	
<p>Resolution N° 102/2019 Environmental Impact Studies Consultants Register</p>	<p>This Resolution establishes the updating of the Register of Consultants in Environmental Impact Studies, which will be renamed the National Register of Consultants in Environmental Assessment (“Registro Nacional de Consultores en Evaluación Ambiental” - RNCEA). Any person who carries out Environmental Impact Studies in which the Secretariat of Environmental Governance and Sustainable Development (SGAyDS) takes action must register. Once the application has been entered through the Distance Processing platform (Trámite a Distancia - TAD) and the documentation is approved, the Certificate of Registration will be issued. It is valid for two years.</p>	
<p><i>Environmental Regulations for Wind Farm Projects</i></p>		
<p>National Law N° 26.190, National Law N° 27.191 and Decree N° 531/16</p>	<p>National Law N° 26.190, modified by National Law N° 27.191, establishes that an 8% of the electricity consumption at a national level must be supplied by renewable energy sources by December 31st, 2017.</p> <p>Decree N° 531/16 regulates the National Promotion Regime for the Use of Renewable Sources of Energy destined to the Production of Electricity and attributes CAMMESA (<i>company in charge of managing the wholesale electricity market</i>) with an outstanding role. In fact, the Decree appoints CAMMESA responsible for managing a significant share of the power purchases from renewable sources.</p>	
<p>National Law N° 25.019 and Decree N° 1597/99</p>	<p>Establishes of national interest the generation of electric energy of wind and solar origin throughout the national territory and establishes the mechanisms to promote the development of projects. In addition, it promotes the development of Renewable Energy Projects.</p>	
<p>National Resolution SE N° 475/87</p>	<p>Establishes the need to submit an Environmental Impact Assessment before the Under-Secretariat of Strategic Planning including the different alternatives for the energy projects; the environmental studies carried out in all its stages, such as inventories, prefeasibility, feasibility; and the environmental surveillance and monitoring program implemented during the project. As part of the process of registering as a member of the</p>	<p>Environmental Impact Assessment</p>

	Wholesale Electricity Market (MEM), companies must submit an environmental impact study to the National Ministry of Energy and Mining in accordance with the provisions of the Resolution SE N° 475/87. Companies must also comply with jurisdictional requirements (at provincial and municipal level), and complete an affidavit indicating that equipment and installations are free of PCB's	
Resolution SE N° 15/92 modified by Resolution SE N° 77/98 and N° 297/98	Approves the Environmental Management Manual for Extra High Voltage Transmission Lines defined in Annex I, mandatory for any company whose activity is subject to national jurisdiction, and carry out projects and/or works of extra high voltage transmission lines.	
Resolution SE N° 304/99	Notes that companies must fulfill the "Conditions and requirements applicable to installation of Wind Power Generation Plants, which aspire to become MEM agents", which includes the EIA, Environmental Management Plan, and specific construction/installation requirements	
National Law N° 24.065	Generators, transporters, distributors and users of electricity are obliged to operate and maintain their facilities and equipment in a manner that does not constitute a danger to public safety. Such facilities and equipment will be subject to inspection, review and testing periodically carried out by the ENRE, which will also have powers to order the suspension of the service, the repair or replacement of facilities and equipment, or any other measure tending to protect the public safety.	
National Resolution ENRE N° 1.725/98	Resolution ENRE N° 1725/98 establishes that for the construction and/or operation of electricity transportation and/or distribution facilities, an environmental impact assessment study must be submitted before the ENRE in accordance with the guidelines of Resolution SE N° 77/98.	
National Resolution ENRE N° 555/01, modified by Resolutions N° 197/11	The agents of the Wholesale Electricity Market must elaborate and implement an Environmental Management System (SGA) including, at least, the organizational structure, planning activities, responsibilities, practices, procedures, processes and the resources to develop, implement, review and maintain the environmental policy. This SGA must be certified by a Quality Systems Certification entity.	
National Resolution ENRE N° 13/12	Defines in Annex, the Procedure for the Measurement and Recording of Air Emissions. In addition, all agents of the Wholesale Electricity Market (MEM) must comply with the limit values established in Resolution SEyM N° 108/2001, modified by Resolution ASPA N° 01/12, for generation units that must carry out continuous and non-continuous monitoring of air emissions, according to the frequency defined in Annex.	

Resolution ENRE - ENARGAS N° 401/2011	Approves the "Guide for underground electrical work in proximity to gas pipelines"	
Resolution MEM N° 281/17	Creates the National Registry of Renewable Energy Projects (RENPER), which will register all the generation, cogeneration and self-generation projects of renewable source electric energy that are developed with a connection to the Argentine Interconnection System (SADI - Sistema Argentino de Interconexión). Projects that have the Certificate of Inclusion in the Regime of Promotion of the Renewable Energies will be automatically registered in the RENPER.	
<i>Waste Management</i>		
National Law N° 25.916 and Decree N° 1.158/04 Integral Management of Domestic Wastes	Establishes the minimum environmental protection standards for the integral management of domestic waste, to which all current national, provincial and municipal legislation will have to adequate. Regulates management of domestic waste from its generation until its final disposal, including initial disposal, general or selective, collection, transfer and transportation and processing or treatment. It establishes that the enforcing authorities are the ones corresponding to each local jurisdiction. At a national level, it establishes an inter-jurisdictional coordination system, coordinated by Federal Environmental Council (COFEMA), which is in charge of accomplishing the objectives of the law.	
National Law N° 24.051 and its Regulatory Decree N° 831/93 Hazardous Wastes Law	Establishes the legal framework applicable to the generation, transportation and final disposal of hazardous wastes under federal jurisdiction. This excludes all domestic wastes, radioactive wastes and waste derived from the normal operation of ships. It prohibits the importation, introduction and transportation of all kind of wastes from other countries into national territory and airspace and territorial waters. According to Article 3 of National Regulatory Decree N° 831/93, the prohibition comprises those products obtained from recycled or recovered materials that do not have a sanitary and/or environmental harmlessness certificate, depending on the case, emitted prior to the shipping by applicable authorities in the country of origin, and ratified by the local enforcing authorities prior to the unloading. It establishes the obligation of generators, operators and transporters of hazardous wastes to register in the <u>National Register of Generators and Operators of Hazardous Wastes</u> . Also, they must apply for the <u>Annual Environmental Certificate</u> , which will have	Annual Environmental Certificate

	to be renewed annually and validates how hazardous wastes are handled, transported, treated and disposed of by the registered generator, operator or transporter.	
National Decree N° 181/92 and National Resolution N° 946/02 of the National Secretariat of Environment and Sustainable Development Importation of Non-Hazardous Waste	National Decree N° 181/92 prohibits the transportation, introduction and temporary or definite importation of all kinds of waste or residues included in a non-taxative list presented in Annex I of said regulation. The National Secretariat of Environment and Sustainable Development, being the applicable authority, has regulated the procedures and forms to request the authorization to import non-hazardous wastes or residues, through National Resolution N° 409/01 now replaced by National Resolution N° 946/02.	
<i>Fuel Tanks</i>		
National Law N° 13.660 and its Regulatory Decree N° 10.887/60 (modified by National Decree N° 401/05) Safety Regulations for the Production, Transformation and Storage of Fuels	Establishes safety regulations for the facilities where production, transformation and/or storage of solid, mineral, liquid and gaseous fuels are produced. This regulation establishes safety provisions for tank farms.	
National Decree N° 2.407/83 Safety Regulations for Fuel Supply through Pumping Stations	Establishes safety regulations for the supply of fuel through pumping stations.	
National Resolution N° 419/93 (Consolidated Text by National Resolution N° 404/94) of the Secretariat of Energy and subsequent amendments (modified by National Resolutions N° 1.102/04 and 266/08)	Creates the Register of National Universities for the Execution of Technical, Environmental and Safety Audits for storage areas; filling points; processing, fractioning and storage plants; refineries; underground and aboveground storage tanks, transportation tanks for hydrocarbons and by-products. Establishes provisions for the execution of these audits.	
National Resolution N° 266/08 of the Secretariat of Energy	Modifies National Resolution N° 419/93, creating the Register of National Universities for the Execution of Technical, Environmental and Safety Audits mentioned above.	
National Disposition N° 76/97 of the Under-secretariat of Fuels and complementary regulations	Approves technical norms for tanks to transport liquid fuels and liquefied petroleum gases through public roadways. Complements provisions of National Resolution N° 404/94 of the Secretariat of Energy.	

National Resolution N° 1.102/04 of the Secretariat of Energy	Creates the Register of Filling Points for Liquid Fuels, Own Consumption, Storage, Distribution and Commercialization of Hydrocarbons and Natural Compressed Gas.	
National Resolution N° 785/05 of the Secretariat of Energy	<p>Establishes the National Program to Control Leaks of Aboveground Hydrocarbon and by-products Storage Tanks.</p> <p>Among other issues, it establishes the need to present an environmental impact assessment prior to the installation of any aboveground storage tank (AST), the registration of all ASTs and the need to perform periodical internal and external controls and audits to verify the operation of the tanks.</p> <p>It also establishes requirements for the closure and decommission of the tanks.</p>	
<i>Protected Areas</i>		
National Law N° 22.351 (modified by National Law N° 26.389) National Parks, Reservations and Natural Monuments	<p>National Law N° 22.351 establishes the legal system for the protection of national parks, reservations and natural monuments, and its declaration as such. It defines the three categories for protected areas: National Parks, National Monuments and National Reserves.</p> <p>Industrial activities, mining exploration and exploitation activities and exploitation of natural resources, among others, are expressly forbidden in National Parks.</p> <p>Furthermore, any type of activity, with the exception of authorized scientific investigations and governmental inspection, is forbidden in Natural Monument areas.</p> <p>Lastly, industrial activities are allowed in Natural Reserve areas subject to obtaining an authorization from the enforcement authority.</p>	
National Law N° 23.302 (modified by National Law N° 25.799) and its Regulatory Decree N° 155/89 Indigenous Communities	<p>Declares of national interest the attention and support to natives and indigenous communities present in the country, and their defense and development towards their full participation in the national socio-economical and cultural process, respecting their own values and methods.</p> <p>Plans shall be implemented to allow their access to the property of land and the promotion of their agricultural, forestry, mining, industrial or handmade production; the preservation of their cultural rules in teaching programs and the protection of health of its members.</p> <p>This Law acknowledges legal status to the indigenous communities established in the country, and creates the National Register of Indigenous Communities.</p> <p>Finally, it creates the National Institute of Indigenous Affairs, and appoints it as application authority for this regulation, the ILO Convention 107 (presently denounced by Argentina) and other complementary regulations.</p>	

<p>National Resolution N° 328/10 of the National Institute of Indigenous Affairs National Register of Indigenous People Organizations</p>	<p>This resolution creates the National Register of Indigenous People Organizations. Indigenous People Organizations registered in the aforementioned Register will have, among others, the following attributions: Participate in activities organized by the National Institute of Indigenous Affairs; Participate in meetings performed within the Indigenous Participation Council; Participate in meetings related to the National Program of Territorial Survey of Indigenous Communities; Present projects to improve representation and participation levels within the organization to the National Institute of Indigenous Affairs; Propose initiatives and proposals related to the compliance of indigenous rights to the National Institute of Indigenous Affairs; Participate, within the framework to be established for the regulation of the Right to Consultation and Participation, in relation to interests that affects them and linked to the implementation of the rights of indigenous people.</p>	
<p><i>Neuquén Province Regulations</i></p>		
<p><i>General Environmental</i></p>		
<p>Provincial Law N° 1.875 and Regulatory Decree N° 2.656/99, Appendices 2, 3 and 7 General Environmental Law</p>	<p>This regulation establishes the principles for the preservation, conservation, defense and improvement of the environment in the Province of Neuquén. It regulates the environmental impact assessment (EIA) process for all projects or activities capable of indirectly or directly modifying the environment of the provincial territory, including renewable energy projects, to be submitted prior to starting any activity. The aforementioned projects and activities are required to obtain an Environmental Impact Declaration (“Declaración de Impacto Ambiental -DIA”), from the Environmental Authority. In addition, an Environmental Management Plan (“Plan de Gestión Ambiental - PGA”) must be prepared and approved by Environmental Authority prior to commence any project or activity. For obtaining the Environmental Impact Declaration, an Environmental Impact Report or an Environmental Impact Study must be prepared and submitted, depending on the complexity of activities/projects, according to lists established in Annexes 4 and 5 of Regulatory Decree N° 2.656/99. The stages of the EIA process are detailed in Annex II and III of Regulatory Decree N° 2.656/99 and include citizen participation through public hearings.</p>	<p>Environmental Impact Declaration The usual timeframe for obtaining this license is 3 to 6 months, depending on the political context, the complexity of the project, the level of information provided to the Authority, etc.</p>
<p><i>Environmental Regulations for Wind Farm Projects</i></p>		

Provincial Law N° 2.596	Adheres to National Law N° 26.190, and establishes the framework for renewal energies development and promotion in the Neuquén Province.	
Provincial Law N° 3.108 and Regulatory Decree N° 355/2019	Adheres to National Law N° 27.191, which modifies Law N° 26.190. This Law establishes a promotion scheme including tax benefits for gross incomes, real estate tax and stamp taxes for renewable energy activities developed in the provincial territory. According to Decree N° 355/2019, companies that aspire to obtain the aforementioned tax benefits, must formally apply for it by submitting an application note before the Authority, including the Registration Certificate of the National Registry of Projects for Electrical Energy Production from Renewable Sources (“Registro Nacional de Proyectos de Generación de Energía Eléctrica de Fuentes Renovables - RENPER”), and the information and documentation indicated in Article 3.	
<i>Waste Management</i>		
Provincial Regulatory Decree N° 2.656/99, Appendix 8, 9 and 10 Hazardous, Pathogenic and Solid Wastes	It creates the Provincial Register of Generators and Operator of Hazardous Wastes, administered by the Secretariat of Lan Development and Environment. All individuals and legal entities responsible of generating, handling, transporting, treating and disposing hazardous wastes in the Province must be registered, and the Annual Environmental Certificate must be obtained, which will have to be renewed annually and validates how hazardous wastes are handled, transported, treated and disposed of by the registered generator, operator or transporter. Regulates the integral management of urban solid wastes, including its generation, possession, collection, transportation, storage, treatment and final disposal, and the transformation operations necessary for their re-use or recycling. The law determines that the Municipalities in the Province of Neuquén are responsible for the management of urban solid wastes generated within their jurisdictions, and that generators are responsible for delivering these wastes to companies duly authorized by the municipal and provincial authorities to manage urban solid wastes.	Annual Environmental Certificate
<i>Protected Areas</i>		
Provincial Law N° 2.594 and Regulatory Decree N° 1.186/11 Protected Natural Areas	These regulations create the Provincial System of Protected Natural Areas. It establishes the following categories for protected natural areas: Strict Natural Reserve: area managed mainly for scientific purposes. Provincial Park: area managed mainly for the preservation of ecosystems and with recreational purposes.	Provincial Law N° 2.594 and Regulatory Decree N° 1.186/11 Protected Natural Areas

	<p>Natural Monuments: area managed mainly for the preservation of specific natural features.</p> <p>Habitat/Species Management Area: area managed mainly for the preservation of habitats or to satisfy the needs of specific species.</p> <p>Protected Landscapes: area managed mainly for the preservation of landscapes and for recreational purposes.</p> <p>Protected Area with Managed Resources: area managed mainly for the sustainable use of natural ecosystems.</p> <p>Resources Reserve: uninhabited or scarcely populated areas insufficiently assessed for potential development of human activities.</p>	
Provincial Law N° 2.184 and Regulatory Decree N° 2.711/97 Historical, Archaeological and Paleontological Heritage Law	It establishes that the owners of lands where historical, archaeological and paleontological objects are found must inform local authorities within 24 hours of the encounter.	
<i>Water and Wastewater Management</i>		
Provincial Law N° 899 and Regulatory Decree N° 790/99 Provincial Water Code	<p>The provincial Water Code and its regulations establish the system for the exploitation and preservation of the water resources of public domain.</p> <p>Additionally, establishes the requirement of obtaining permits for the drilling of groundwater wells and use of water (“Permiso de Explotación” and “Permiso de Perforación”).</p> <p>In addition, a Wastewater Discharge Permit must be obtained for discharging wastewater into water bodies.</p> <p>This regulation also prohibits any kind of water contamination, and establishes limits for wastewater discharges in Annex II of Decree N° 790/99.</p>	<p>Water Exploitation Permit</p> <p>Groundwater Well Drilling Permit</p> <p>Wastewater Discharge Permit</p>
Provincial Disposition DGRH N° 29/00	This regulation approves affidavit forms to apply for the water exploitation permit.	Water Exploitation Permit
Provincial Resolution N° 181/2000 from the Provincial Entity of Water and Sanitary Services (<i>Ente Provincial de Agua y Saneamiento - EPAS</i>)	<p>The Resolution establishes that for discharging wastewater into water bodies, a Wastewater Discharge Permit must be obtained. For discharging wastewater into the sewage system, a wastewater affidavit must be submitted for obtaining the corresponding authorization.</p> <p>Annex I contains the limits for discharging wastewater in a sewer and in surface waters.</p>	Wastewater Discharge Permit

Technical Energy Regulations

REGULATIONS	DESCRIPTION	ASSOCIATED PERMITS
<i>National Regulations</i>		
Resolution ENRE N° 171/95	Establishes the general standards to assure the enclosures of medium and low voltage transformation centers, to prevent the access of unauthorized third parties.	
Resolution ENRE N° 311/01	It requires to the electricity distribution companies the development and implementation of a Public Safety Plan, which contains the analysis of risks and actions to avoid them. Ten plans are determined, such as: plan of detection and correction of anomalies in installations on public road; preventive maintenance plan for installations on public roads; plan for control, registration, analysis and prevention of accidents; public safety claims response plan; plan to control works on public roads; plan for surveying and normalizing medium and low voltage overhead lines; control plan for transformer chambers; signaling plan on public roads; training and authorization plan for the distribution company personnel and its contractors, subcontractors and suppliers who carry out tasks that can affect public safety; and plan for the analysis and prevention of specific unusual events (fires, localized floods, etc.).	
Resolution ENRE N° 57/03.	Establishes the Minimum Contents Guide for the Public Safety System of the Installations of Transportation Companies. The resolution requires transport companies to develop and implement a Public Safety Plan, such as prevention, risk analysis and actions to avoid them.	
Resolution ENRE N° 86/05, modified by Resolution N° 1098/06.	Establishes the technical standard on safety conditions that the low voltage pillars and connections must have in the connections from distribution companies to users.	
Resolution ENRE N° 773/05	Defines the procedure of a sanctioning system on subjects related to Public Safety for companies that transport high and extra-high voltage electricity.	
Resolution ENRE N° 805/05	Establishes the minimum frequencies of revision that distribution companies must perform to its facilities located in the public road, within the framework of their Public Safety Systems.	
Resolution ENRE N° 384/06	Defines the technical standard on outdoor transformation centers that establishes the minimum parameters that these centers must meet to safeguard public safety.	

Health and Safety Regulations

REGULATIONS	DESCRIPTION	ASSOCIATED PERMITS
National Regulations		
National Law N° 19.587 and its Regulatory Decree N° 351/79 and amendments Health and Safety at Work	National Law N° 19.587 has the final purpose of regulating the health and safety conditions at work, wherever this is developed or carried out. This regulation is intended to preserve the psychophysical integrity of workers, in order to reduce accidents and work-related illnesses, as well as risks from different aspects of work activities. Specifically it regulates the following aspects: i) Medical and health and safety services at the workplace; ii) Building construction features, including drinking water supply and industrial sewage; iii) Hygiene conditions in work environments, including heat stress, indoor air quality standards for the workplace, radiations, ventilation, illumination and color, noises and vibrations; iv) Industrial site safety conditions, including electrical equipment, machines and tools, pressured vessels, hazardous work, fire protection; v) Personal Protective Equipment; vi) Staff training.	Health and Safety Supporting Documentation.
National Decree N° 1.338/96 Medical and Health & Safety Services	Establishes provisions for the operation of the medical and health and safety services required by National Law N° 19.587 and its Regulatory Decree N° 351/79.	
National Law N° 24.557, its Regulatory Decree N° 170/96 and complementary regulations Labor Risk Prevention Law	National Law N° 24.557, its Regulatory Decree N° 170/96, and complementary regulations establish the legal framework for the integral system for the prevention of labor risks, including labor accidents and occupational diseases; and the legal system applicable to the labor risks insurance companies.	Labor Risks Insurance
National Resolution N° 295/03 of the Ministry of Labor, Employment and Social Security	This Resolution approves technical specifications for ergonomics and manual load lifting, and radiations, that are applicable throughout the national territory. In addition, it modifies Annexes II, III and V of Regulatory Decree N° 351/79 on Health and Safety.	
National Resolution N° 743/03 of the Superintendence of Labor Risks	It creates the National Register for the Prevention of Major Industrial Accidents and establishes a list of chemical substances and threshold volumes. Employers that produce, import, use, obtain, sell or transfer the chemical substances in volumes equal or higher than indicated in this regulation are required to register themselves in the	

	aforementioned Register. The registration shall be completed through the Labor Risks Insurance Company.	
National Resolution N° 1.604/07 of the Superintendence of Labors Risks	It creates the Register of Labor Accidents, administered by the Superintendence of Labor Risks and procedures to report labor accidents. Employers must report the occupational diseases and accidents to their Labor Risks Insurance company, in accordance with the instructions provided by these. Within 48 hours of the occurrence, the employer should submit the insurance company with a Report Form following guidelines established in Form D of Annex II of National Resolution N° 1.604/07. The employer should provide the worker with a copy of the report submitted to the insurance company.	
National Resolution N° 37/10 of the Superintendence of Labors Risks	Establishes the medical examinations included in the labor risks system, which comprise: <ol style="list-style-type: none"> 1. Pre-occupational. 2. Periodical. 3. Prior to the transference to another activity. 4. Following an extended absence. 5. Prior to ending the employment relationship. Pre-occupational examinations are mandatory. The Labor Risks Insurance company will determine the need for and frequency of periodical examinations. The results of the medical examinations should be kept in the personal file of each employee.	
National Resolution N° 299/11 of the Superintendence of Labors Risks	Establishes that personal protective equipment provided to workers shall be certified by duly recognized organisms according to National Resolution N° 896/99 of the Secretariat of Industry, Commerce and Mining. It also creates the form "Working Clothing and Personal Protective Equipment Delivery Record" of mandatory use by employers. A form shall be completed for each worker in which the delivery of all working clothing and personal protective equipment shall be registered.	
National Resolution N° 905/15 of the Superintendence of Labors Risks	Establishes the functions of the H&S and Medical Service professionals, in compliance with Decree N° 1.338/96, in which are included the following: <ol style="list-style-type: none"> a) Verify the compliance of the H&S regulations by identifying the hazards and assessing the risks that could affect the employee's health, and developing effective preventive measures. b) Verify and register the actions performed by the Labor Risks Insurance Company (ART), in which are included: Medical examinations, H&S compliance inspections, H&S benefits, etc. 	

	c) Conduct periodically visits on the working stations with the frequency depending on the risks assessments, the size of the company, and to verify compliance with any potential plan developed by the SRT (Superintendence of Labor Risks).	
National Resolution N° 84/12 of the Superintendence of Labors Risks	Establishes that annual monitoring must be conducted to verify if lighting is in compliance with the requirements and the lighting levels established in Annex IV of National Decree N° 351/79. It also requires to comply with guidelines established in the Protocol for Workplace Lighting Monitoring approved by this Resolution. Corrective measures must be implemented if light levels are detected to be below minimum levels for working stations.	
National Resolution N° 85/12 of the Superintendence of Labors Risks	Comply with guidelines established in the Protocol for Workplace Noise Monitoring approved by this Resolution. Workplace noise monitoring results shall be valid for a term of twelve (12) months (i.e. monitoring is required at least every 12 months).	
Resolution N° 886/15 of the Ministry of Job, Labor and Social Security	Requires to conduct an ergonomic assessment of the activities performed on site, according to Protocol for Ergonomics Monitoring approved by this Resolution.	
Resolution ENRE N° 114/2005	Defines the technical standard that establishes the minimum fire safety conditions that transformation centers must have within private properties, including a standardization plan to be carried out within the Public Safety Systems of the distribution companies.	
Resolution ENRE N° 597/2010	It establishes preventive measures to avoid accidents and incidents in the performance of underground works on public roads by delivering plans by the distributor to the different contractors that act in the public space, through the Municipalities.	

APPENDIX B ENVIRONMENTAL LICENSE



GOBIERNO
DE LA PROVINCIA
DEL NEUQUÉN

MINISTERIO DE SEGURIDAD,
TRABAJO Y AMBIENTE
SUBSECRETARÍA DE AMBIENTE

P/ Federico

Manuel Angulo
Ríos

CEDULA DE NOTIFICACIÓN

Señor/es: **ADI NQN SEP**

Dirección:

Notificación N°: **2041/17**

Hago saber a Ud. que, en las actuaciones caratuladas **EXPTE. N° 6000-001006-13. ALC 01-14. REF: ESTUDIO DE IMPACTO AMBIENTAL PARQUE EÓLICO VIENTOS NEUQUINOS I – PARAJE BAJADA COLORADA. VIENTOS NEUQUINOS I S.A.**, en trámite ante esta Subsecretaría de Ambiente, sita en calle Antártida Argentina 1245 – Edificio 2 – Nivel 2 de la ciudad de Neuquén, provincia del Neuquén, se ha dispuesto: **NOTIFICAR A LA ADI NQN SEP** lo siguiente: I) **Se emite Resolución N° 0883/17** (se adjunta copia fiel) II) **Previo al inicio de las obras deberá dar respuesta a las siguientes observaciones:**
 A) **Previo al inicio de obra, presentar proyecto ejecutivo definitivo, incluyendo planos actualizados y cronograma de obra y la ubicación de estructuras temporarias.** B) **Dar cumplimiento a lo informado por la Subsecretaría de Hidrocarburos, tal la constancia obrante en Fs.69 del expediente, en relación a la superposición de actividades.** C) **Dar cumplimiento a las normas NAG 100, en relación al gasoducto Cordillerano.** D) **De corresponder, dar cumplimiento al decreto 1485/12.** E) **Presentar los resultados del estudio estructural de suelos, ruido teórico molesto al vecindario, shadow flicker, monitoreo de aves y registro de mediciones obtenidos.** F) **Indicar el nombre de las empresas contratistas y del responsable ambiental durante la etapa de construcción.** G) **Presentar de gestión de residuos particularizado para la etapa de construcción.** H) **Se informa que en caso de no materializarse el Parque Eólico en el plazo de 3 años, el proponente debe presentar una actualización de la Línea de Base Ambiental, debido a la dinámica del uso del suelo y las actividades socioeconómicas que se desarrollan sobre el mismo.- Fdo Lic. JUAN DE DIOS LUCHELLI – Subsecretario de Ambiente de la Provincia de Neuquén.**

ADI NQN S.E.P.
RECIBIDO
14 SEP 2017
Bárcenas Celeste



14 SEP 2017

Lic. JUAN DE DIOS LUCHELLI
SUBSECRETARIO DE AMBIENTE
MINISTERIO DE SIG. TRAJ. Y AMBIENTE
PROVINCIA DEL NEUQUÉN

ENTRADA
14/9/17

VISTO:

El expediente Nº 6000-001006/13 Alcance 01-14 del registro de la Mesa de Entradas y Salidas de la Subsecretaría de Ambiente, caratulado: "Estudio de Impacto Ambiental Parque Eólico Vientos Neuquinos I - Paraje Bajada Colorada, Vientos Neuquinos I - S.A."; y

CONSIDERANDO:

Que la persona jurídica VIENTOS NEUQUINOS I - S.A., presentó el estudio de impacto ambiental del proyecto Parque Eólico Vientos Neuquinos I;

Que sometido el documento a la evaluación del área técnica surgieron una serie de observaciones las que fueron notificadas al proponente dando respuestas satisfactorias;

Que se emitieron notificaciones a los organismos sustantivos provinciales con el fin de poner en conocimiento el proyecto de energía eólica, como así también solicitar la emisión de opinión respecto a su incumbencia, las que fueron contestadas oportunamente;

Que consultada la Subsecretaría de Minería e Hidrocarburos emitió su opinión técnica, puntualizando la presencia del gasoducto cordillerano perteneciente a la Empresa Transportadora Gas del Sur S.A. (TGS S.A.) y la necesidad de que el solicitante se comunique de forma permanente, tanto en la etapa de construcción como en la etapa operativa, con las empresas operadoras de las áreas y la Subsecretaría de Hidrocarburos, de manera tal que no se solapen las actividades a desarrollar disminuyendo los riesgos que esto podría provocar;

Que se puso a consideración de la Empresa TGS S.A. el proyecto del

Visto;

Que se dispuso la convocatoria a audiencia pública con fecha 10 de diciembre de 2014 a las 12:00 hs. en el parador "Creo en Dios", ubicado en el kilómetro 1352 de la Ruta Nacional 237 de la localidad de Picún Leufú;

Que consta publicación edictal de fecha 17 de octubre de 2014 en el Boletín Oficial de la Provincia, como así también, en los diarios La Mañana del Neuquén y Río Negro en fecha 06 de noviembre de 2014;

Que en los actuados consta el acta de realización de la audiencia pública, de conformidad a lo dispuesto en los artículos 90º y 93º de la Constitución Provincial y artículos 24º y 31º de la Ley 1875;

Que la empresa deberá cumplimentar los requisitos emanados de los órganos técnicos sustantivos que autorizan las obras relacionadas al proyecto integral;

Que el proyecto encuadra en lo dispuesto en el ítem 4 del Anexo V del Decreto Provincial Nº 2656/99, listado no taxativo de actividades que requieren la presentación de un estudio de impacto ambiental;

CLAUDIA B. CHAMBERS
Directora General de Despacho
Ministerio de Seguridad, Tránsito y Ambiente
PROVINCIA DEL NEUQUÉN

GABRIEL GONZALEZ
Director General de Despacho
Subsecretaría de Ambiente
Ministerio de Seguridad, Tránsito y Ambiente



0883

RESOLUCIÓN N° _____/17.-

Que habiéndose sometido a análisis la solicitud y la documentación acompañada, la Dirección Provincial de Ambiente y Desarrollo Sostenible ha manifestado su opinión favorable a la aprobación del estudio de Impacto ambiental;

Que el proponente ha satisfecho los requisitos previstos en la normativa vigente en materia de protección ambiental, por lo que la documentación se halla en condiciones de ser aprobada, debiendo la empresa dar cumplimiento a las medidas de prevención y mitigación enunciadas en el plan de gestión y a los requerimientos emanados de la Dirección Provincial;

Que esta operación no exige al proponente de dar cumplimiento a lo establecido en las Leyes Provinciales 2184, 1926 y 899; y sus decretos reglamentarios N° 2711/97, N° 2247/96 y N° 790/99 respectivamente, en lo atinente a la autorización del organismo competente;

Que mediante Resolución N° 203/15 de la ex Secretaría de Estado de Ambiente y Desarrollo Sostenible se emitió licencia ambiental al proyecto del Visto, condicionada al cumplimiento de una serie de requisitos detallados en el articulado de la misma;

Que posteriormente el proponente da respuesta a lo requerido en el artículo 11° y parcialmente al artículo 9° de la resolución aludida en el párrafo anterior;

Que en la documental detalla cuales requerimientos dependen de la concreción del layout definitivo, o bien son previos al inicio de obras, solicitando en consecuencia la emisión de una licencia ambiental no condicionada;

Que es menester referenciar un pronunciamiento de la Corte Suprema de Justicia de la Nación en autos "Recurso de hecho deducido por la actora en la causa Martínez, Sergio Raúl c/Agua Rica LLC Suco Argentina y su propietaria Yamana Gold. Inc. y otros s/acción de amparo", donde calificó de ilegítimo el actuar del organismo ambiental de la Provincia de Catamarca por emitir una licencia ambiental condicionada. Así expresó: "Que el Superior Tribunal provincial omitió el análisis de normas aplicables al caso que, por un lado, exigen la emisión de la declaración de Impacto ambiental en forma previa al inicio de las obras; y por el otro, al disponer en forma expresa que la administración debe aprobar o rechazar los estudios presentados, se limitan a conferirle facultades regladas en este aspecto, que no incluyen la potestad de admitir tales evaluaciones en forma condicional;

Que el artículo 83° de la Ley Provincial 1284 de Procedimientos Administrativos, denomina revocación a la declaración unilateral de un órgano en ejercicio de la función administrativa por la que se extingue, sustituye o modifica un acto administrativo por razones de oportunidad o de ilegitimidad. La revocación puede ser total o parcial, con o sin sustitución del acto extinguido;

Que tomaron intervención el área técnica y legal a tenor de lo dispuesto en el artículo 98° de la Ley 1284;

Que analizada la petición del proponente a la luz del pronunciamiento judicial reseñado, en consonancia con lo dispuesto en el artículo 24° in fine del Decreto N° 2656/99, y atento el informe técnico corresponde proceder a la revocación total de la Resolución N° 203/15 de la ex Secretaría de Estado de

CLAUDIA B. CHAMBERS
Directora General de Despacho
Ministerio de Ambiente, Turismo y Ambiente
PROVINCIA DEL NEUQUÉN

ES COPIA FIEL
GABRIEL GONZALEZ
Director General de Despacho
Subcomisión de Ambiente
Ministerio de Seguridad, Trabajo y Asistencia



0883

RESOLUCIÓN N° _____/17.-

Ambiente y Desarrollo Sostenible con sustitución del acto extinguido, en los términos del artículo 83º de la Ley 1284;

Por ello y en uso de sus atribuciones;

EL MINISTRO DE SEGURIDAD, TRABAJO Y AMBIENTE

RESUELVE:

Artículo 1º: **REVÓCASE** la Resolución N° 203/15 de la ex Secretaría de Estado de Ambiente y Desarrollo Sostenible, la que se sustituye en toda sus partes por la presente norma.-

Artículo 2º: **APRUÉBASE** el estudio de impacto ambiental del proyecto "Parque Eólico Vientos Neuquinos S.A." con su correspondiente plan de gestión ambiental y en consecuencia **OTÓRGASE** la correspondiente licencia ambiental.-

Artículo 3º: El incumplimiento al plan de gestión ambiental como a las obligaciones esenciales impuestas a su cargo, constituirá causal de caducidad del acto administrativo acorde a lo prescripto por el artículo 86º de la Ley 1284.-

Artículo 4º: **ESTABLÉZCASE** la obligatoriedad del proponente de informar a la Subsecretaría de Ambiente el inicio de las obras, con una antelación de 72 hs. como así también la finalización de la misma en el plazo de 15 días.-

Artículo 5º: La presente licencia ambiental constituye un acto administrativo de carácter precario, revocable y no implica autorización de obra, según lo establecido en el artículo 18º Anexo II del Decreto reglamentario N° 2656/99.-

Artículo 6º: Comuníquese, agréguese a sus antecedentes y archívese.-

ES COPIA

FDO.) LARA.-

CLAUDIA B CHAMBERS
Directora General de Dirección
Ministerio de Seguridad, Trabajo y Ambiente
PROVINCIA DEL NEUQUÉN

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GABRIEL GONZALEZ
Director General de Dirección
Subsecretaría de Ambiente
Ministerio de Seguridad, Trabajo y Ambiente

APPENDIX C LIST OF POTENTIAL FAUNA SPECIES

Class	Order	Family	Species	Common Name	IUCN Red List Category	Restricted Range	Movement Patterns	IBAT	Specialized Literature
Amphibia	Anura	Batrachylidae	<i>Atelognathus praebasalticus</i>	Zapala frog	EN	X	ND	X	
Amphibia	Anura	Bufo	<i>Rhinella arenarum</i>		LC OR LR/LC	ND	ND	X	
Amphibia	Anura	Bufo	<i>Rhinella spinulosa</i>	Warty toad	LC OR LR/LC	ND	ND	X	
Amphibia	Anura	Leptodactylidae	<i>Pleurodema bufoninum</i>		LC OR LR/LC	-	ND	X	
Amphibia	Anura	Leptodactylidae	<i>Pleurodema nebulosum</i>	Mendoza four-eyed frog	LC OR LR/LC	-	ND	X	
Amphibia	Anura	Odontophrynidae	<i>Odontophrynus occidentalis</i>		LC OR LR/LC	-	ND	X	
Aves	Accipitriformes	Accipitridae	<i>Accipiter bicolor</i>	Bicolored hawk	LC OR LR/LC	-	Full migrant	X	
Aves	Accipitriformes	Accipitridae	<i>Buteo albigula</i>	White-throated hawk	LC OR LR/LC	-	Not Migrant	X	
Aves	Accipitriformes	Accipitridae	<i>Circus buffoni</i>	Long-winged Harrier	LC OR LR/LC	-	Full migrant		a
Aves	Accipitriformes	Accipitridae	<i>Circus cinereus</i>	Cinereous harrier	LC OR LR/LC	-	Full migrant	X	a
Aves	Accipitriformes	Accipitridae	<i>Geranoaetus melanoleucus</i>	Black-chested buzzard-eagle	LC OR LR/LC	-	Not Migrant	X	a
Aves	Accipitriformes	Accipitridae	<i>Geranoaetus polyosoma</i>	Variable hawk	LC OR LR/LC	-	Full migrant	X	a
Aves	Accipitriformes	Accipitridae	<i>Parabuteo unicinctus</i>	Harris's hawk	LC OR LR/LC	-	Not Migrant	X	a
Aves	Anseriformes	Anatidae	<i>Anas flavirostris</i>	Yellow-billed teal	LC OR LR/LC	-	Full migrant	X	a

Class	Order	Family	Species	Common Name	IUCN Red List Category	Restricted Range	Movement Patterns	IBAT	Specialized Literature
Aves	Anseriformes	Anatidae	<i>Anas georgica</i>	Yellow-billed pintail	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Chloephaga picta</i>	Upland goose	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Chloephaga poliocephala</i>	Ashy-headed goose	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Coscoroba coscoroba</i>	Coscoroba swan	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Cygnus melancoryphus</i>	Black-necked swan	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Heteronetta atricapilla</i>	Black-headed duck	LC OR LR/LC	-	Full migrant	X	
Aves	Anseriformes	Anatidae	<i>Lophonetta specularioides</i>	Crested duck	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Mareca sibilatrix</i>	Chiloe wigeon	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Merganetta armata</i>	Torrent duck	LC OR LR/LC	-	Not Migrant	X	a
Aves	Anseriformes	Anatidae	<i>Netta peposaca</i>	Rosy-billed pochard	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Oxyura ferruginea</i>	Andean duck	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Oxyura vittata</i>	Lake duck	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Spatula cyanoptera</i>	Cinnamon Teal	LC OR LR/LC	-	Full migrant		a
Aves	Anseriformes	Anatidae	<i>Spatula platalea</i>	Red shoveler	LC OR LR/LC	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Spatula versicolor</i>	Silver teal	LC OR LR/LC	-	Full migrant	X	a

Class	Order	Family	Species	Common Name	IUCN Red List Category	Restricted Range	Movement Patterns	IBAT	Specialized Literature
Aves	Anseriformes	Anatidae	<i>Specularnas specularis</i>	Spectacled duck	NT OR LR/NT	-	Full migrant	X	a
Aves	Anseriformes	Anatidae	<i>Tachyeres patachonicus</i>	Flying steamerduck	LC OR LR/LC	-	Full migrant	X	a
Aves	Apodiformes	Apodidae	<i>Aeronautes andecolus</i>	Andean Swift	LC OR LR/LC	-	Not Migrant		a
Aves	Caprimulgiformes	Caprimulgidae	<i>Systellura longirostris</i>	Greater band-winged nightjar	LC OR LR/LC	-	Full migrant	X	a
Aves	Caprimulgiformes	Trochilidae	<i>Oreotrochilus leucopleurus</i>	White-sided hillstar	LC OR LR/LC	-	Not Migrant	X	
Aves	Caprimulgiformes	Trochilidae	<i>Sephanoides sephanoides</i>	Green-backed firecrown	LC OR LR/LC	-	Full migrant	X	a
Aves	Cathartiformes	Cathartidae	<i>Cathartes aura</i>	Turkey vulture	LC OR LR/LC	-	Full migrant	X	a
Aves	Cathartiformes	Cathartidae	<i>Coragyps atratus</i>	American black vulture	LC OR LR/LC	-	Full migrant	X	a
Aves	Cathartiformes	Cathartidae	<i>Vultur gryphus</i>	Andean condor	NT OR LR/NT	-	Altitudinal Migrant	X	a
Aves	Charadriiformes	Charadriidae	<i>Charadrius collaris</i>	Collared Plover	LC OR LR/LC	-	Not Migrant		a
Aves	Charadriiformes	Charadriidae	<i>Oreopholus ruficollis</i>	Tawny-throated dotterel	LC OR LR/LC	-	Full migrant	X	a
Aves	Charadriiformes	Charadriidae	<i>Vanellus chilensis</i>	Southern lapwing	LC OR LR/LC	-	Full migrant	X	a
Aves	Charadriiformes	Laridae	<i>Larus maculipennis</i>	Brown-hooded gull	LC OR LR/LC	-	Full migrant	X	a
Aves	Charadriiformes	Laridae	<i>Larus serranus</i>	Andean Gull	LC OR LR/LC	-	Full migrant		a
Aves	Charadriiformes	Rostratulidae	<i>Nycticryphes semicollaris</i>	South american painted-snipe	LC OR LR/LC	-	Full migrant	X	

Class	Order	Family	Species	Common Name	IUCN Red List Category	Restricted Range	Movement Patterns	IBAT	Specialized Literature
Aves	Charadriiformes	Scolopacidae	<i>Calidris bairdii</i>	Baird's sandpiper	LC OR LR/LC	-	Full migrant	X	
Aves	Charadriiformes	Scolopacidae	<i>Calidris melanotos</i>	Pectoral sandpiper	LC OR LR/LC	-	Full migrant	X	
Aves	Charadriiformes	Scolopacidae	<i>Gallinago paraguayae</i>	South american snipe	LC OR LR/LC	-	Full migrant	X	a
Aves	Charadriiformes	Scolopacidae	<i>Steganopus tricolor</i>	Wilson's phalarope	LC OR LR/LC	-	Full migrant	X	a
Aves	Charadriiformes	Scolopacidae	<i>Tringa flavipes</i>	Lesser yellowlegs	LC OR LR/LC	-	Full migrant	X	a
Aves	Charadriiformes	Scolopacidae	<i>Tringa melanoleuca</i>	Greater yellowlegs	LC OR LR/LC	-	Full migrant	X	a
Aves	Charadriiformes	Thinocoridae	<i>Attagis gayi</i>	Rufous-bellied seedsnipe	LC OR LR/LC	-	Not Migrant	X	
Aves	Charadriiformes	Thinocoridae	<i>Attagis malouinus</i>	White-bellied seedsnipe	LC OR LR/LC	-	Altitudinal Migrant	X	
Aves	Charadriiformes	Thinocoridae	<i>Thinocorus orbignyianus</i>	Grey-breasted seedsnipe	LC OR LR/LC	-	Altitudinal Migrant	X	a
Aves	Charadriiformes	Thinocoridae	<i>Thinocorus rumicivorus</i>	Least seedsnipe	LC OR LR/LC	-	Full migrant	X	
Aves	Columbiformes	Columbidae	<i>Columba livia</i>	Rock Dove	LC OR LR/LC	-	Not Migrant		a
Aves	Columbiformes	Columbidae	<i>Columbina picui</i>	Picui Dove	LC OR LR/LC	-	Full migrant		a
Aves	Columbiformes	Columbidae	<i>Metriopelia melanoptera</i>	Black-winged ground-dove	LC OR LR/LC	-	Altitudinal Migrant	X	a
Aves	Columbiformes	Columbidae	<i>Patagioenas maculosa</i>	Spot-winged pigeon	LC OR LR/LC	-	Full migrant	X	a
Aves	Columbiformes	Columbidae	<i>Patagioenas picazuro</i>	Picazuro Pigeon	LC OR LR/LC	-	Full migrant		a

Class	Order	Family	Species	Common Name	IUCN Red List Category	Restricted Range	Movement Patterns	IBAT	Specialized Literature
Aves	Columbiformes	Columbidae	<i>Zenaida auriculata</i>	Eared dove	LC OR LR/LC	-	Full migrant	X	a
Aves	Coraciiformes	Alcedinidae	<i>Megaceryle torquata</i>	Ringed kingfisher	LC OR LR/LC	-	Full migrant	X	a
Aves	Cuculiformes	Cuculidae	<i>Guira</i>	Guira Cuckoo	LC OR LR/LC	-	Full migrant		a
Aves	Falconiformes	Falconidae	<i>Caracara plancus</i>	Southern caracara	LC OR LR/LC	-	Not Migrant	X	a
Aves	Falconiformes	Falconidae	<i>Falco femoralis</i>	Aplomado falcon	LC OR LR/LC	-	Full migrant	X	a
Aves	Falconiformes	Falconidae	<i>Falco peregrinus</i>	Peregrine falcon	LC OR LR/LC	-	Full migrant	X	a
Aves	Falconiformes	Falconidae	<i>Falco sparverius</i>	American kestrel	LC OR LR/LC	-	Full migrant	X	a
Aves	Falconiformes	Falconidae	<i>Phalcoboenus chimango</i>	Chimango caracara	LC OR LR/LC	-	Full migrant	X	a
Aves	Galliformes	Odontophoridae	<i>Callipepla californica</i>	California quail	LC OR LR/LC	-	Not Migrant	X	a
Aves	Gruiformes	Rallidae	<i>Fulica armillata</i>	Red-gartered coot	LC OR LR/LC	-	Full migrant	X	a
Aves	Gruiformes	Rallidae	<i>Fulica leucoptera</i>	White-winged coot	LC OR LR/LC	-	Full migrant	X	a
Aves	Gruiformes	Rallidae	<i>Fulica rufifrons</i>	Red-fronted Coot	LC OR LR/LC	-	Full migrant		a
Aves	Gruiformes	Rallidae	<i>Pardirallus sanguinolentus</i>	Plumbeous rail	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Cotingidae	<i>Phytotoma rara</i>	Rufous-tailed plantcutter	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Cotingidae	<i>Phytotoma rutila</i>	White-tipped Plantcutter	LC OR LR/LC	-	Full migrant		a

Class	Order	Family	Species	Common Name	IUCN Red List Category	Restricted Range	Movement Patterns	IBAT	Specialized Literature
Aves	Passeriformes	Fringillidae	<i>Spinus barbatus</i>	Black-chinned siskin	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Fringillidae	<i>Spinus magellanicus</i>	Hooded Siskin	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Fringillidae	<i>Spinus uropygialis</i>	Yellow-rumped Siskin	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Furnariidae	<i>Asthenes modesta</i>	Cordilleran canastero	LC OR LR/LC	-	Not Migrant	X	
Aves	Passeriformes	Furnariidae	<i>Asthenes pyrrholeuca</i>	Sharp-billed canastero	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Furnariidae	<i>Cinclodes fuscus</i>	Buff-winged cinclodes	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Furnariidae	<i>Cinclodes oustaleti</i>	Grey-flanked Cinclodes	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Furnariidae	<i>Cinclodes patagonicus</i>	Dark-bellied Cinclodes	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Furnariidae	<i>Cranioleuca pyrrhophia</i>	Stripe-crowned spinetail	LC OR LR/LC	-	Not Migrant	X	
Aves	Passeriformes	Furnariidae	<i>Furnarius rufus</i>	Rufous Hornero	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Furnariidae	<i>Geositta antarctica</i>	Short-billed miner	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Furnariidae	<i>Geositta cunicularia</i>	Common miner	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Furnariidae	<i>Geositta rufipennis</i>	Rufous-banded miner	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Furnariidae	<i>Leptasthenura aegithaloides</i>	Plain-mantled Tit-spinetail	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Furnariidae	<i>Leptasthenura pallida</i>	Pallid tit-spinetail	LC OR LR/LC	-	Full migrant	X	

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Aves	Passeriformes	Furnariidae	<i>Ochetorhynchus phoenicurus</i>	Band-tailed earthcreeper	LC OR LR/LC	-	Not Migrant	X	a
Aves	Passeriformes	Furnariidae	<i>Ochetorhynchus ruficaudus</i>	Straight-billed earthcreeper	LC OR LR/LC	-	Not Migrant	X	a
Aves	Passeriformes	Furnariidae	<i>Phleocryptes melanops</i>	Wren-like rushbird	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Furnariidae	<i>Pseudasthenes patagonica</i>	Patagonian canastero	LC OR LR/LC	-	Not Migrant	X	
Aves	Passeriformes	Furnariidae	<i>Pseudasthenes steinbachi</i>	Steinbach's canastero	LC OR LR/LC	-	Not Migrant	X	
Aves	Passeriformes	Furnariidae	<i>Pseudoseisura gutturalis</i>	White-throated cachalote	LC OR LR/LC	-	Not Migrant	X	a
Aves	Passeriformes	Furnariidae	<i>Pygarrhichas albogularis</i>	White-throated Treerunner	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Furnariidae	<i>Spartonoica maluroides</i>	Bay-capped wren-spinetail	NT OR LR/NT	-	Full migrant	X	
Aves	Passeriformes	Furnariidae	<i>Upucerthia dumetaria</i>	Scale-throated earthcreeper	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Hirundinidae	<i>Hirundo rustica</i>	Barn swallow	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Hirundinidae	<i>Progne elegans</i>	Southern martin	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Hirundinidae	<i>Progne tapera</i>	Brown-chested Martin	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Hirundinidae	<i>Pygochelidon cyanoleuca</i>	Blue-and-white swallow	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Hirundinidae	<i>Riparia</i>	Collared sand martin	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Hirundinidae	<i>Tachycineta meyeni</i>	Chilean swallow	LC OR LR/LC	-	Full migrant	X	a

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Aves	Passeriformes	Icteridae	<i>Agelaioides badius</i>	Greyish Baywing	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Icteridae	<i>Agelasticus thilius</i>	Yellow-winged blackbird	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Icteridae	<i>Curaeus</i>	Austral blackbird	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Icteridae	<i>Leistes loyca</i>	Long-tailed meadowlark	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Icteridae	<i>Molothrus bonariensis</i>	Shiny cowbird	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Mimidae	<i>Mimus patagonicus</i>	Patagonian mockingbird	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Mimidae	<i>Mimus saturninus</i>	Chalk-browed Mockingbird	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Mimidae	<i>Mimus triurus</i>	White-banded Mockingbird	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Motacillidae	<i>Anthus correndera</i>	Correndera pipit	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Motacillidae	<i>Anthus furcatus</i>	Short-billed Pipit	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Motacillidae	<i>Anthus hellmayri</i>	Hellmayr's pipit	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Passerellidae	<i>Zonotrichia capensis</i>	Rufous-collared sparrow	LC OR LR/LC	-	Not Migrant	X	a
Aves	Passeriformes	Passeridae	<i>Passer domesticus</i>	House sparrow	LC OR LR/LC	-	Not Migrant	X	a
Aves	Passeriformes	Rhinocryptidae	<i>Scelorchilus rubecula</i>	Chucao tapaculo	LC OR LR/LC	-	Not Migrant	X	a
Aves	Passeriformes	Rhinocryptidae	<i>Teledromas fuscus</i>	Sandy gallito	LC OR LR/LC	-	Not Migrant	X	

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Aves	Passeriformes	Thraupidae	<i>Corydospiza carbonaria</i>	Carbon sierra-finch	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Thraupidae	<i>Diuca</i>	Common diuca-finch	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Thraupidae	<i>Embernagra platensis</i>	Great Pampa-finch	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Thraupidae	<i>Geospizopsis unicolor</i>	Plumbeous sierra-finch	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Thraupidae	<i>Paroaria coronata</i>	Red-crested Cardinal	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Thraupidae	<i>Phrygilus gayi</i>	Grey-hooded sierra-finch	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Thraupidae	<i>Phrygilus patagonicus</i>	Patagonian Sierra-finch	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Thraupidae	<i>Rhopospina fruticeti</i>	Mourning sierra-finch	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Thraupidae	<i>Sicalis flaveola</i>	Saffron Finch	LC OR LR/LC	-	Not Migrant		a
Aves	Passeriformes	Thraupidae	<i>Sicalis lebruni</i>	Patagonian Yellow-finch	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Thraupidae	<i>Sicalis luteola</i>	Grassland yellow-finch	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Troglodytidae	<i>Cistothorus platensis</i>	Grass wren	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Troglodytidae	<i>Troglodytes aedon</i>	House wren	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Turdidae	<i>Turdus amaurochalinus</i>	Creamy-bellied thrush	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Turdidae	<i>Turdus chiguanco</i>	Chiguanco Thrush	LC OR LR/LC	-	Full migrant		a

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Aves	Passeriformes	Turdidae	<i>Turdus falcklandii</i>	Austral thrush	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Agriornis lividus</i>	Great Shrike-tyrant	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Tyrannidae	<i>Agriornis micropterus</i>	Grey-bellied shrike-tyrant	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Tyrannidae	<i>Agriornis montanus</i>	Black-billed shrike-tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Agriornis murinus</i>	Lesser shrike-tyrant	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Tyrannidae	<i>Anairetes flavirostris</i>	Yellow-billed tit-tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Anairetes parulus</i>	Tufted tit-tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Elaenia albiceps</i>	White-crested elaenia	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Hymenops perspicillatus</i>	Spectacled tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Knipolegus aterrimus</i>	White-winged black-tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Knipolegus hudsoni</i>	Hudson's Black-tyrant	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Tyrannidae	<i>Lessonia rufa</i>	Austral negrito	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Machetornis rixosa</i>	Cattle Tyrant	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Tyrannidae	<i>Muscisaxicola capistratus</i>	Cinnamon-bellied ground-tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Muscisaxicola flavinucha</i>	Ochre-naped ground-tyrant	LC OR LR/LC	-	Full migrant	X	

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Aves	Passeriformes	Tyrannidae	<i>Muscisaxicola frontalis</i>	Black-fronted ground-tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Muscisaxicola maclovianus</i>	Dark-faced ground-tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Muscisaxicola maculirostris</i>	Spot-billed ground-tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Pitangus sulphuratus</i>	Great Kiskadee	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Tyrannidae	<i>Pseudocolopteryx citreola</i>	Ticking doradito	LC OR LR/LC	-	Full migrant	X	
Aves	Passeriformes	Tyrannidae	<i>Pyrocephalus rubinus</i>	Common Vermilion Flycatcher	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Tyrannidae	<i>Serpophaga griseicapilla</i>	Straneck's tyrannulet	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Serpophaga nigricans</i>	Sooty Tyrannulet	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Tyrannidae	<i>Stigmatura budytoides</i>	Greater Wagtail-tyrant	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Tyrannidae	<i>Tachuris rubrigastra</i>	Many-colored rush-tyrant	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Tyrannus melancholicus</i>	Tropical Kingbird	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Tyrannidae	<i>Xolmis coronatus</i>	Black-crowned monjita	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Xolmis irupero</i>	White Monjita	LC OR LR/LC	-	Full migrant		a
Aves	Passeriformes	Tyrannidae	<i>Xolmis pyrope</i>	Fire-eyed diucon	LC OR LR/LC	-	Full migrant	X	a
Aves	Passeriformes	Tyrannidae	<i>Xolmis rubetra</i>	Rusty-backed monjita	LC OR LR/LC	-	Full migrant	X	a

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Aves	Pelecaniformes	Ardeidae	<i>Ardea alba</i>	Great white egret	LC OR LR/LC	-	Full migrant	X	a
Aves	Pelecaniformes	Ardeidae	<i>Egretta thula</i>	Snowy Egret	LC OR LR/LC	-	Full migrant		a
Aves	Pelecaniformes	Ardeidae	<i>Nycticorax</i>	Black-crowned night-heron	LC OR LR/LC	-	Full migrant	X	a
Aves	Pelecaniformes	Threskiornithidae	<i>Plegadis chihi</i>	White-faced Ibis	LC OR LR/LC	-	Full migrant		a
Aves	Pelecaniformes	Threskiornithidae	<i>Theristicus melanopis</i>	Black-faced ibis	LC OR LR/LC	-	Full migrant	X	a
Aves	Phoenicopteriformes	Phoenicopteridae	<i>Phoenicopterus chilensis</i>	Chilean flamingo	NT OR LR/NT	-	Full migrant	X	a
Aves	Piciformes	Picidae	<i>Colaptes campestris</i>	Campo Flicker	LC OR LR/LC	-	Full migrant		a
Aves	Piciformes	Picidae	<i>Colaptes melanochloros</i>	Green-barred Woodpecker	LC OR LR/LC	-	Not Migrant		a
Aves	Piciformes	Picidae	<i>Colaptes melanolaimus</i>	Golden-breasted woodpecker	LC OR LR/LC	-	Full migrant	X	
Aves	Piciformes	Picidae	<i>Colaptes pitius</i>	Chilean flicker	LC OR LR/LC	-	Not Migrant	X	a
Aves	Piciformes	Picidae	<i>Veniliornis lignarius</i>	Striped woodpecker	LC OR LR/LC	-	Full migrant	X	
Aves	Piciformes	Picidae	<i>Veniliornis mixtus</i>	Checkered woodpecker	LC OR LR/LC	-	Full migrant	X	
Aves	Podicipediformes	Podicipedidae	<i>Podiceps major</i>	Great grebe	LC OR LR/LC	-	Full migrant	X	a
Aves	Podicipediformes	Podicipedidae	<i>Podiceps occipitalis</i>	Southern silvery grebe	LC OR LR/LC	-	Full migrant	X	
Aves	Podicipediformes	Podicipedidae	<i>Podilymbus podiceps</i>	Pied-billed grebe	LC OR LR/LC	-	Full migrant	X	a

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Aves	Podicipediformes	Podicipedidae	<i>Rollandia rolland</i>	White-tufted grebe	LC OR LR/LC	-	Full migrant	X	a
Aves	Psittaciformes	Psittacidae	<i>Cyanoliseus patagonus</i>	Burrowing parrot	LC OR LR/LC	-	Full migrant	X	a
Aves	Psittaciformes	Psittacidae	<i>Enicognathus ferrugineus</i>	Austral parakeet	LC OR LR/LC	-	Altitudinal Migrant	X	a
Aves	Psittaciformes	Psittacidae	<i>Myiopsitta monachus</i>	Monk Parakeet	LC OR LR/LC	-	Not Migrant		a
Aves	Strigiformes	Strigidae	<i>Asio flammeus</i>	Short-eared owl	LC OR LR/LC	-	Full migrant	X	
Aves	Strigiformes	Strigidae	<i>Athene cunicularia</i>	Burrowing owl	LC OR LR/LC	-	Full migrant	X	a
Aves	Strigiformes	Strigidae	<i>Bubo magellanicus</i>	Magellanic horned owl	LC OR LR/LC	-	Not Migrant	X	
Aves	Strigiformes	Strigidae	<i>Bubo virginianus</i>	Great Horned Owl	LC OR LR/LC	-	Full migrant		a
Aves	Strigiformes	Strigidae	<i>Glaucidium nana</i>	Austral pygmy-owl	LC OR LR/LC	-	Full migrant	X	a
Aves	Strigiformes	Strigidae	<i>Strix rufipes</i>	Rufous-legged owl	LC OR LR/LC	-	Not Migrant	X	
Aves	Strigiformes	Tytonidae	<i>Tyto alba</i>	Common barn-owl	LC OR LR/LC	-	Not Migrant	X	
Aves	Struthioniformes	Rheidae	<i>Rhea americana</i>	Greater Rhea	NT OR LR/NT	-	Not Migrant		a
Aves	Struthioniformes	Rheidae	<i>Rhea pennata</i>	Lesser rhea	LC OR LR/LC	-	Not Migrant	X	a
Aves	Struthioniformes	Tinamidae	<i>Eudromia elegans</i>	Elegant crested tinamou	LC OR LR/LC	-	Not Migrant	X	a
Aves	Struthioniformes	Tinamidae	<i>Nothura maculosa</i>	Spotted Nothura	LC OR LR/LC	-	Not Migrant		a

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Aves	Suliformes	Phalacrocoracidae	<i>Nannopterum brasilianus</i>	Neotropical cormorant	LC OR LR/LC	-	Not Migrant	X	a
Mammalia	Carnivora	Canidae	<i>Lycalopex gymnocercus</i>	Pampas Fox	LC OR LR/LC	ND	-		b
Mammalia	Carnivora	Canidae	<i>Lycalopex culpaeus</i>	Culpeo	LC OR LR/LC	ND	-	X	b
Mammalia	Carnivora	Canidae	<i>Lycalopex griseus</i>	Chilla	LC OR LR/LC	ND	ND	X	b
Mammalia	Carnivora	Felidae	<i>Herpailurus yagouaroundi</i>	Jaguarundi	LC OR LR/LC	ND	ND		b
Mammalia	Carnivora	Felidae	<i>Leopardus colocolo</i>	Pampas cat	NT OR LR/NT	ND	ND	X	b
Mammalia	Carnivora	Felidae	<i>Leopardus geoffroyi</i>	Geoffroy's cat	LC OR LR/LC	ND	ND	X	b
Mammalia	Carnivora	Felidae	<i>Puma concolor</i>	Puma	LC OR LR/LC	ND	ND	X	b
Mammalia	Carnivora	Mephitidae	<i>Conepatus chinga</i>	Molina's hog-nosed skunk	LC OR LR/LC	ND	ND	X	b
Mammalia	Carnivora	Mephitidae	<i>Conepatus humboldtii</i>	Humboldt's hog-nosed skunk	LC OR LR/LC	ND	ND	X	b
Mammalia	Carnivora	Mustelidae	<i>Galictis cuja</i>	Lesser grison	LC OR LR/LC	ND	ND	X	b
Mammalia	Carnivora	Mustelidae	<i>Lontra provocax</i>	Southern river otter	EN	ND	ND	X	b
Mammalia	Carnivora	Mustelidae	<i>Lyncodon patagonicus</i>	Patagonian weasel	LC OR LR/LC	ND	ND	X	b
Mammalia	Cetartiodactyla	Camelidae	<i>Lama guanicoe</i>	Guanaco	LC OR LR/LC	-	ND	X	b
Mammalia	Chiroptera	Molossidae	<i>Tadarida brasiliensis</i>	Murciélago Cola Suelta Brasileño	LC OR LR/LC	ND	ND	X	b

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Mammalia	Chiroptera	Vespertilionidae	<i>Histiotus macrotus</i>	Big-eared Brown Bat	LC OR LR/LC	ND	ND		b
Mammalia	Chiroptera	Vespertilionidae	<i>Histiotus magellanicus</i>	Southern Big-eared Brown Bat	LC OR LR/LC	ND	ND		b
Mammalia	Chiroptera	Vespertilionidae	<i>Histiotus montanus</i>	Small big-eared brown bat	LC OR LR/LC	ND	ND	X	b
Mammalia	Chiroptera	Vespertilionidae	<i>Lasiurus varius</i>	Cinnamon red bat	LC OR LR/LC	ND	ND	X	b
Mammalia	Chiroptera	Vespertilionidae	<i>Myotis chiloensis</i>	Chilean myotis	LC OR LR/LC	ND	ND	X	b
Mammalia	Chiroptera	Vespertilionidae	<i>Myotis dinellii</i>	Mouse-eared bat	LC OR LR/LC	ND	ND	X	
Mammalia	Cingulata	Chlamyphoridae	<i>Chaetophractus villosus</i>	Large hairy armadillo	LC OR LR/LC	-	ND	X	
Mammalia	Cingulata	Chlamyphoridae	<i>Zaedyus pichiy</i>	Pichi	NT OR LR/NT	-	ND	X	
Mammalia	Didelphimorphia	Didelphidae	<i>Lestodelphys halli</i>	Patagonian opossum	LC OR LR/LC	ND	ND	X	b
Mammalia	Didelphimorphia	Didelphidae	<i>Thylamys pallidior</i>	Pallid fat-tailed opossum	LC OR LR/LC	ND	ND	X	
Mammalia	Lagomorpha	Leporidae	<i>Lepus europaeus</i>	European hare	LC OR LR/LC	ND	ND	X	b
Mammalia	Rodentia	Caviidae	<i>Dolichotis patagonum</i>	Patagonian mara	NT OR LR/NT	ND	ND	X	b
Mammalia	Rodentia	Caviidae	<i>Galea leucoblephara</i>	Lowland yellow-toothed cavy	LC OR LR/LC	ND	ND	X	
Mammalia	Rodentia	Caviidae	<i>Microcavia australis</i>	Southern mountain cavy	LC OR LR/LC	ND	ND	X	b
Mammalia	Rodentia	Chinchillidae	<i>Lagidium viscacia</i>	Southern mountain viscacha	LC OR LR/LC	-	ND	X	b

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Mammalia	Rodentia	Chinchillidae	<i>Lagostomus maximus</i>	Plains Viscacha	LC OR LR/LC	-	ND		b
Mammalia	Rodentia	Cricetidae	<i>Abrothrix longipilis</i>	Long-haired akodont	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Abrothrix olivaceus</i>	Olive grass mouse	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Akodon dolores</i>	Cordoba akodont	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Akodon iniscatus</i>	Intelligent grass mouse	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Akodon molinae</i>	Molina's grass mouse	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Calomys musculus</i>	Drylands vesper mouse	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Eligmodontia morgani</i>	Morgan's Gerbil Mouse	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Eligmodontia typus</i>	Lowland gerbil mouse	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Euneomys petersoni</i>	Peterson's Chinchilla Mouse	LC OR LR/LC	-	ND	X	
Mammalia	Rodentia	Cricetidae	<i>Graomys griseoflavus</i>	Gray leaf-eared mouse	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Oligoryzomys longicaudatus</i>	Long-tailed Pygmy Rice Rat	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Phyllotis xanthopygus</i>	Yellow-rumped leaf-eared mouse	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Cricetidae	<i>Reithrodon auritus</i>	Reithrodon auritus	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Ctenomyidae	<i>Ctenomys haigi</i>	Ctenomys haigi	LC OR LR/LC	-	ND	X	b

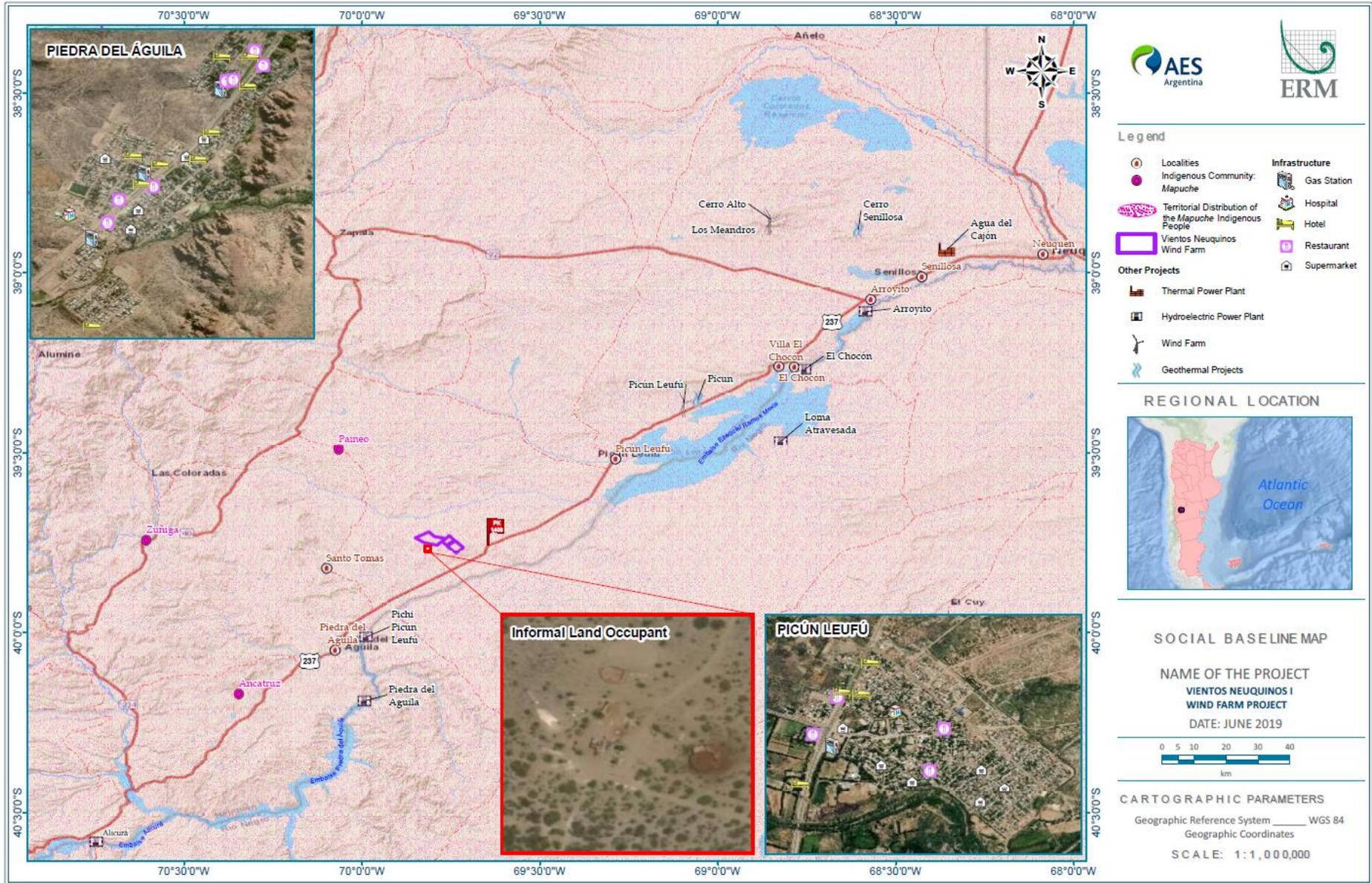
Class	Order	Family	Species	Common Name	IUCN Red List Category	Restricted Range	Movement Patterns	IBAT	Specialized Literature
Mammalia	Rodentia	Muridae	<i>Euneomys chinchilloides</i>	Patagonian Chincilla Mouse	DD	-	ND		b
Mammalia	Rodentia	Muridae	<i>Notiomys edwardsii</i>	Milne-Edwards' Long-clawed Mouse	LC OR LR/LC	-	ND		b
Mammalia	Rodentia	Myocastoridae	<i>Myocastor coypus</i>	Coypu	LC OR LR/LC	-	ND	X	b
Mammalia	Rodentia	Octodontidae	<i>Aconaemys porteri</i>	Porter's Rock Rat	DD	ND	ND		b
Mammalia	Rodentia	Octodontidae	<i>Aconaemys sagei</i>	Sage's Rock Rat	DD	ND	ND		b
Mammalia	Rodentia	Octodontidae	<i>Tympanoctomys barrerae</i>	Plains Viscacha Rat	NT OR LR/NT	ND	ND	X	b
Reptilia	Squamata	Amphisbaenidae	<i>Amphisbaena plumbea</i>	Lead worm lizard	LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Dipsadidae	<i>Erythrolamprus sagittifer</i>	Arrow ground snake	LC OR LR/LC	ND	ND	X	
Reptilia	Squamata	Dipsadidae	<i>Philodryas psammophidea</i>	Günther's Green Racer	LC OR LR/LC	ND	ND	X	
Reptilia	Squamata	Dipsadidae	<i>Philodryas trilineata</i>		LC OR LR/LC	ND	ND	X	
Reptilia	Squamata	Dipsadidae	<i>Pseudotomodon trigonatus</i>	False tomodon snake	LC OR LR/LC	ND	ND	X	
Reptilia	Squamata	Leiosauridae	<i>Diplolaemus sexcinctus</i>		LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Leiosauridae	<i>Leiosaurus bellii</i>	Bell's anole	LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Leiosauridae	<i>Pristidactylus fasciatus</i>	D'Orbigny's Banded Anole	DD	ND	ND		c
Reptilia	Squamata	Liolaemidae	<i>Liolaemus darwini</i>	Darwin's tree iguana	LC OR LR/LC	ND	ND	X	c

Class	Order	Family	Species	Common Name	IUCN Red List Category	Restricted Range	Movement Patterns	IBAT	Specialized Literature
Reptilia	Squamata	Liolaemidae	<i>Liolaemus elongatus</i>	Elongate tree iguana	LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Liolaemidae	<i>Liolaemus gracilis</i>	Graceful tree iguana	LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Liolaemidae	<i>Liolaemus gununakuna</i>		LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Liolaemidae	<i>Liolaemus kriegi</i>	Krieg's tree iguana	LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Liolaemidae	<i>Liolaemus purul</i>		LC OR LR/LC	X	ND	X	c
Reptilia	Squamata	Liolaemidae	<i>Liolaemus rothi</i>	Roth's sand iguana	LC OR LR/LC	-	ND	X	c
Reptilia	Squamata	Phyllodactylidae	<i>Homonota andicola</i>	Cei's marked gecko	LC OR LR/LC	ND	ND	X	
Reptilia	Squamata	Phyllodactylidae	<i>Homonota darwinii</i>	Darwin's marked gecko	LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Phyllodactylidae	<i>Homonota fasciata</i>	South American Marked Gecko	LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Phyllodactylidae	<i>Homonota underwoodi</i>	Underwood's Marked Gecko	LC OR LR/LC	ND	ND	X	c
Reptilia	Squamata	Teiidae	<i>Aurivela longicauda</i>	Longtail Whiptail	LC OR LR/LC	ND	ND		c
Insecta	Coleoptera	Scarabaeidae	<i>Canthon janthinus</i>		LC OR LR/LC			X	
Insecta	Coleoptera	Scarabaeidae	<i>Canthon lituratus</i>		LC OR LR/LC			X	
Insecta	Coleoptera	Scarabaeidae	<i>Malagoniella argentina</i>		LC OR LR/LC			X	
Insecta	Coleoptera	Scarabaeidae	<i>Scybalophagus patagonicus</i>		LC OR LR/LC			X	

Class	Order	Family	Species	Common Name	IUCN Red List Category	Restricted Range	Movement Patterns	IBAT	Specialized Literature
Insecta	Hymenoptera	Apidae	<i>Bombus dahlbomii</i>	Moscardon	EN	-	Not Migrant	X	
Insecta	Hymenoptera	Apidae	<i>Bombus opifex</i>		LC OR LR/LC			X	
Insecta	Odonata	Aeshnidae	<i>Rhionaeschna diffinis</i>		LC OR LR/LC			X	
Insecta	Odonata	Coenagrionidae	<i>Cyanallagma interruptum</i>		LC OR LR/LC			X	
Insecta	Odonata	Coenagrionidae	<i>Ischnura fluviatilis</i>		LC OR LR/LC			X	
Insecta	Odonata	Lestidae	<i>Lestes undulatus</i>		LC OR LR/LC			X	
Insecta	Odonata	Libellulidae	<i>Erythrodiplax ochracea</i>		LC OR LR/LC			X	
Insecta	Odonata	Libellulidae	<i>Pantala flavescens</i>	Wandering glider	LC OR LR/LC			X	
Insecta	Odonata	Petaluridae	<i>Phenes raptor</i>		LC OR LR/LC			X	

The level of risk according to the IUCN Redlist (2019): LC = Least Concern, VU = Vulnerable, NT = Near Threatened, EN = Endangered, CR = Critically endangered, and DD= Data Deficient. Specialized Literature: a= Veiga, J.O., F.C. Filiberto, M.P. Babarskas y C. Savigny. 2005. Aves de la Provincia de Neuquén. Patagonia Argentina. Lista Comentada y Distribución. 186 pags. Edit. RyC, b= Bonino, N. 2005. Guía de Mamíferos de la Patagonia Argentina. Estación Experimental Agropecuaria San Carlos de Bariloche. Instituto Nacional de Tecnología Agropecuaria. Buenos Aires, Argentina, c= Medina, C.D., Morando, M., Minoli. I., Breitman, M.F. Sites, J.W. y Ávila, L. J. Lagartijas de la Provincia de Neuquén (Argentina): estado de conservación, diversidad genética y mapas de distribución geográfica. INIBIONA, CONICET, UNCO. Restricted Range: x= EOO < 50,000 km², - = EOO > 50,000 km². ND= No Data

APPENDIX D SOCIAL BASELINE MAP



APPENDIX E DISPOSITION N°184 S.T. / 13. - NEUQUÉN

DISPOSICIÓN Nº 134 S.T./13.-
NEUQUÉN, 10 JUL 2013

VISTO:

El Expediente Nº **4340-001858/13** del registro de la Subsecretaría de Tierras dependiente del Ministerio de Desarrollo Territorial; y

CONSIDERANDO:

Que mediante Ley 2596, la Provincia del Neuquén adhiere a la Ley Nacional 26190, que establece un régimen de fomento nacional para el uso de fuentes renovables de energía eléctrica;



Que además, la norma Provincial dispone en su Artículo 2º, declarar de Interés Público Provincial la generación de energía eléctrica a partir del uso de fuentes renovables de energía con destino a la presentación de servicio público;

Que la Agencia para la Promoción y el Desarrollo del Neuquén ADI-NQN S.E.P., fué creada mediante Decreto Provincial Nº 957/08, asumiendo como objetivo, entre otros, generar por sí o a través de terceros, el desarrollo de proyectos de inversión relacionados a la producción de energía a partir del recurso eólico;

Que en concordancia con dicha normativa, el Poder Ejecutivo Provincial dictó el Decreto Nº 1837/09, el cual dispone la reserva de manera permanente y con fines de utilidad pública, de predios de propiedad del Estado Provincial, individualizados en el ANEXO ÚNICO del mencionado Decreto, como así también los que en el futuro se incorporen;


PABLO ALEJANDRO PRIETO
SUBSECRETARÍA DE TIERRAS

Que el Decreto Nº 1837/09 expresamente instruye a la autoridad de aplicación de la Ley Provincial 263, a realizar todas las acciones necesarias a los fines de dar viabilidad a lo ordenado en dicho acto, entre ellas, emitir todos los actos administrativos tendientes a establecer y registrar servidumbres u otras restricciones;

Que asimismo el Artículo 3º del citado Decreto, faculta al ADI-NQN S.E.P., a solicitar a la autoridad de aplicación, todas las servidumbres o restricciones que sean necesarias sobre áreas reservadas con fines de utilidad pública, para el desarrollo de actividades de generación de energía eléctrica a partir del uso de fuentes renovables de energía;

Que en cumplimiento de su cometido y tal como surge del Expediente Nº 4303-000106/11, ADI-NQN S.E.P. ha constituido una Sociedad Anónima, junto a inversores privados denominada Vientos Neuquinos I S.A., cuyo objetivo es el desarrollo de un parque eólico en el área Provincial identificada como Bajada Colorada cuya individualización yace en el ANEXO UNICO de la presente;

Que el desarrollo del mencionado parque eólico será en beneficio del Interés público de la comunidad, generando energía a partir de fuentes de energía renovable, limpia y no contaminante;

Que mediante Decreto Nº 1121/11, el Poder Ejecutivo Provincial incorporó el área denominada Bajada Colorada, al ANEXO ÚNICO del Decreto Nº 1837/09;

Que a los fines del desarrollo del parque eólico por parte de Vientos Neuquinos I S.A., resulta necesario disponer una limitación jurídica a su favor sobre el área necesaria, teniendo como objeto

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inmediato la utilidad pública y sirviendo al uso público;

Por ello,

**EL SUBSECRETARIO DE TIERRAS
DISPONE:**

Artículo 1º: ESTABLÉZCASE a favor de Vientos Neuquinos I S.A., CUIT N° 30-71312200-5, una Servidumbre Administrativa de Uso sobre el área identificada como Bajada Colorada, Departamento Collón Cura, Provincia del Neuquén, cuya designación y datos catastrales forman parte de la presente como ANEXO ÚNICO.-

Artículo 2º: Regístrese, Comuníquese y cumplido, Archívese.-

ES COPIA.
AP.-



FDO.) FERRARESSO.-

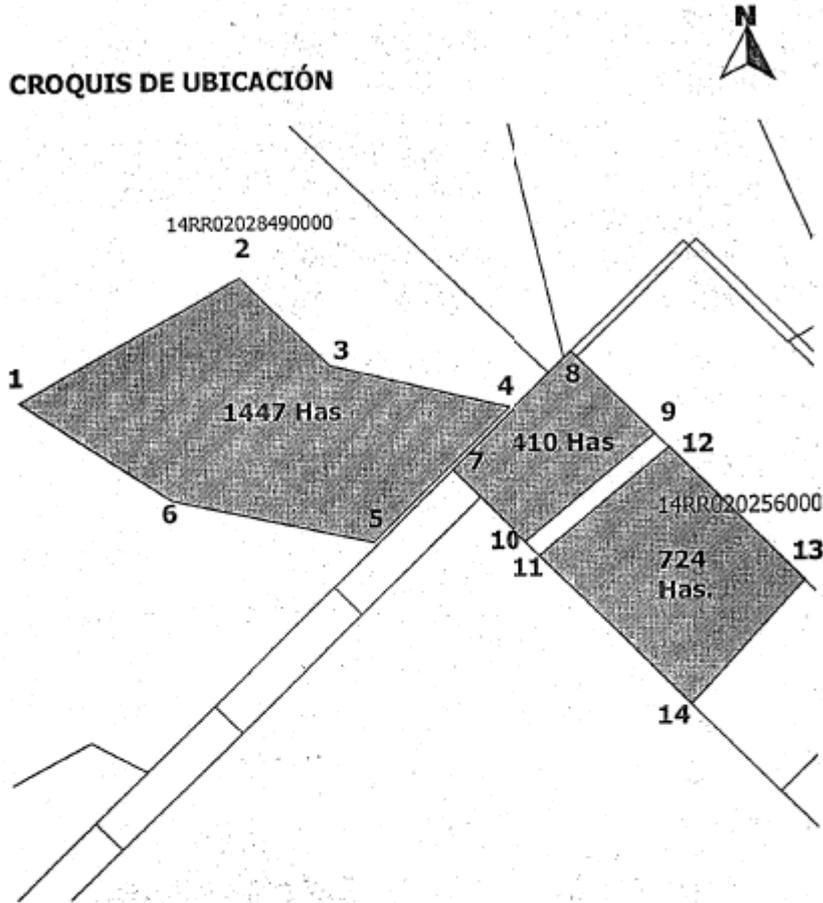
Valeria Peret
VALERIA PERET
Directora General de
Geología y Catastro
MINISTERIO DE GESTIÓN DE TIERRAS

Paulo Ferraresso
PAULO FERRARESSO
SUBSECRETARIO DE TIERRAS

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DISPOSICIÓN N° 194 S.T./13 - ANEXO ÚNICO.-

CROQUIS DE UBICACIÓN



PABLO ANTONIO BARRIETO
SUBSECCIÓN DE TITULOS

SUPERFICIE TOTAL APROXIMADA SUJETA A MENSURA 2580 Has
 PARTE DE LOS LOTES:
 -LOTE 21 PARTE DE LOS LOTES OFICIALES 5, 8, 9, 10, 11, 12, 13,
 14, 15, 16 17 Y 18 SECCION XXIV N.C 14-RR-020-2849-0000
 -REMANENTE DE PARTE DEL LOTE OFICIAL 7 SECCION XXIV N.C
 14-RR-020-2560-0000

PLANILLA DE COORDENADAS (SISTEMA POSGAR 94/ ARGENTINA 2)

1- 2427034,53 - 5601357,46	8- 2435253,5 - 5602028,51
2- 2430319,59 - 5603194,48	9- 2436474,81 - 5600784,99
3- 2431640,93 - 5601864,9	10- 2434550,35 - 5599182,98
4- 2434310,76 - 5601208,58	11- 2434766,39 - 5598964,8
5- 2432272,18 - 5599216,92	12- 2436686,92 - 5600568,29
6- 2429283,67 - 5599868,58	13- 2438674,07 - 5598547,63
7- 2433465,26 - 5600282,3	14- 2436980,53 - 5596722,81

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ANDREA VALERIA PONS
 Directora General de
 Gestión y Despacho

APPENDIX F PROVISIONAL ACCESS PERMIT

Buenos Aires, 17 de abril de 2019

Presente

Estimados Reducto Patagónico SRL / Sr José Luis DEHAIS:

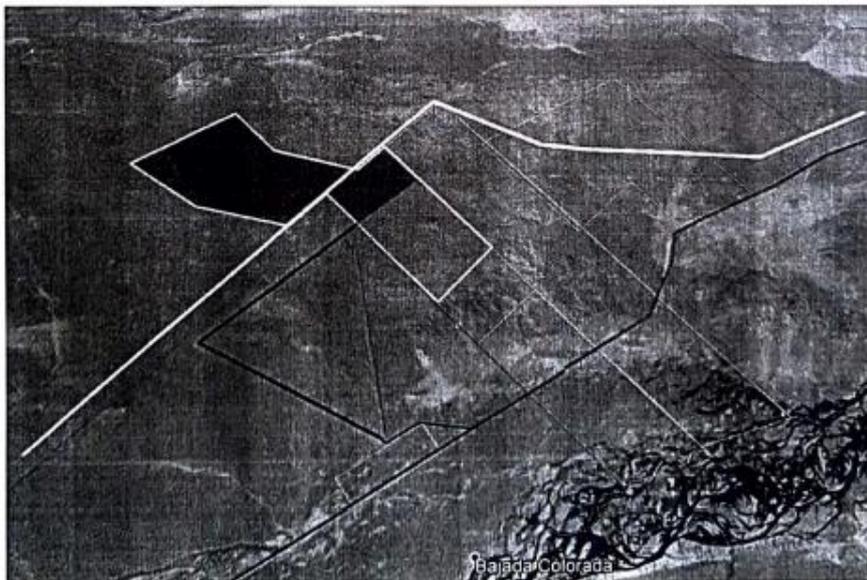
En mi carácter de apoderado de Vientos Neuquinos I S.A. y siguiendo conversaciones mantenidas, me dirijo a Ud. a fin de solicitar autorización para ingresar al lote asignado al proyecto eólico Vientos Neuquinos (el "Proyecto", ubicado en el croquis adjunto con el contorno de color blanco) utilizando el camino detallado en color negro dentro del lote del cual Ud. alega ser tenedor/propietario.

Solicitamos que la autorización a ser por ustedes brindada tenga el carácter de inmediata y dure por el plazo de 60 días corridos en el cual mi representada y quien ustedes designen celebren la pertinente servidumbre de paso a favor del terreno en el cual se instalará el Proyecto. A esos efectos, proponemos preliminarmente que la traza de dicha servidumbre sea la que figura en el croquis adjunto con una línea color rojo. En caso de acordar la servidumbre futura, el plazo será considerado desde la firma del presente documento.

Desde ya agradecemos le impriman a la autorización solicitada el carácter de urgente.

Saludamos a Ud. cordialmente,


Rubén Zaja
Vientos Neuquinos S.A.
Director - Apoderado



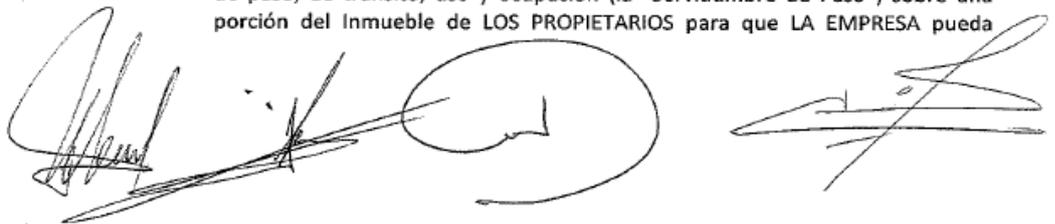
APPENDIX G RIGHT-OF-WAY EASEMENT SIGNED AGREEMENT.

CONVENIO DE SERVIDUMBRE DE PASO

En la ciudad de Neuquén, Capital de la Provincia de Neuquén, República Argentina, a los 7 días del mes de Junio de 2019, entre la empresa **VIENTOS NEUQUINOS I S.A.**, representada en este acto por el Señor Rubén Zaia en su carácter de apoderado, constituyendo domicilio especial a efectos del presente en la calle Carlos Pellegrini 1023, piso 9 de la Ciudad Autónoma de Buenos Aires, en adelante denominada "LA EMPRESA", por una parte; y por la otra (i) el Sr. **JOSE DEHAIS**, DNI N° 5.593.191, representado en este acto por el Sr. **JOSÉ LUIS DEHAIS**, DNI N° 21656953. , en carácter de apoderado (Confome Poder General amplio de Administración y Disposición – Escritura N° 175), con domicilio en Estancia Fortin Nogueyra, ruta nacional 237 km 1431, (ii) **REDUCTO PATAGONICO S.R.L.**, CUIT: 30-70968172-5, con domicilio en calle Miguel Muñoz 487 de la ciudad de Cipolletti, Provincia de Rio Negro, por sí mismo, representada en este acto por el Sr. **AGUSTÍN CARABETTA**, con DNI Nro. 32.694.652 en su carácter de Gerente y (iii) [Fernando Carlos Muñoz de Toro, DNI N°16.968.835, con domicilio en Avenida Alicia Moreau de Justo 740 piso 2 loft 212 de CABA, representado en este acto por el Sr. **EDUARDO ALBERTO ARISTU**, con DNI N° 16.124.666 en su carácter de apoderado conforme poder que se adjunta al presente en adelante denominados individualmente como un "PROPIETARIO" y, en su conjunto, como "LOS PROPIETARIOS", y en conjunto denominados como "LAS PARTES",

CONSIDERANDO:

- a) Que LA EMPRESA es una compañía dedicada a la actividad de generación de energía eléctrica a partir de fuentes renovables y se encuentra abocada a la construcción, desarrollo y explotación del parque eólico "Vientos Neuquinos 1" en el área de Bajada Colorada (proyecto amparado por Ley 27.191) (el "PROYECTO");
- b) Que LOS PROPIETARIOS son copropietarios de un fundo indiviso contiguo al predio donde se instalará el PROYECTO (el "Inmueble"), de conformidad con el certificado de dominio emitido por el Registro de la Propiedad de la Provincia del Neuquén que LOS PROPIETARIOS deberán tramitar que se acompaña como Anexo I;
- c) Que en fecha 17 de abril de 2019 "LA EMPRESA" solicitó a LOS PROPIETARIOS una autorización de acceso provisoria al Inmueble inmediata y por el plazo de 60 días hasta que se constituyera una servidumbre de paso;
- d) Que en esa misma fecha LOS PROPIETARIOS prestaron su conformidad a LA EMPRESA perfeccionando así el permiso provisorio de paso solicitado, manifestando no tener ninguna objeción a que el personal de LA EMPRESA y sus contratistas ingresen al Inmueble por el camino propuesto por LA EMPRESA mientras las Partes negocian un acuerdo definitivo de servidumbre de paso;
- e) Que, en esta instancia, las Partes desean formalizar ese acuerdo definitivo de servidumbre de paso y, a tales fines, constituir un derecho real de servidumbre de paso, de tránsito, uso y ocupación (la "Servidumbre de Paso") sobre una porción del Inmueble de LOS PROPIETARIOS para que LA EMPRESA pueda



ingresar al PROYECTO para su construcción, desarrollo y explotación, conforme al Anexo II

POR LO TANTO, las Partes convienen en celebrar este contrato de constitución de derecho real de servidumbre de paso (en adelante, el "Convenio"), con carácter oneroso, que se regirá de acuerdo a las cláusulas y condiciones que se exponen a continuación:

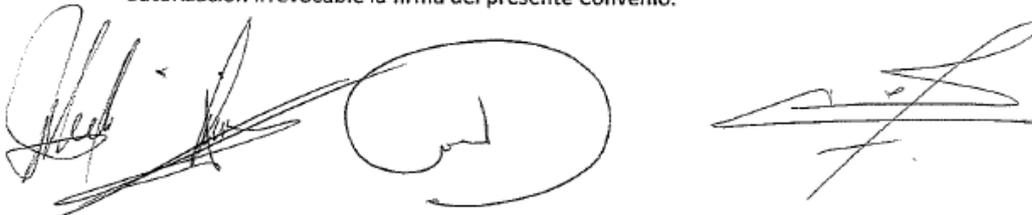
PRIMERO - OBJETO: LOS PROPIETARIOS constituyen exclusivamente a favor de LA EMPRESA el derecho real de Servidumbre de Paso, de tránsito, y de uso y ocupación, en los términos del artículo 2162 y concordantes del Código Civil y Comercial de la Nación, sobre una fracción de terreno que forma parte de una superficie del Inmueble según croquis que se acompañan como Anexo II al presente.

La superficie de afectación de la presente Servidumbre de Paso sobre dicho Inmueble es de aproximadamente 8,5 Has, cuya traza se indica con color lila y con detalle de sus coordenadas aproximadas en el mencionado croquis

Una vez acordada la fracción de terreno y firmado el presente Convenio, LA EMPRESA procederá a la contratación de un agrimensor para comenzar con la mensura definitiva y la posterior inscripción registral de la Servidumbre de Paso, que será llevada a cabo en un todo de acuerdo a los plazos de los organismos públicos intervinientes. LOS PROPIETARIOS reconocen y aceptan que la mensura y traza definitiva de la Servidumbre de Paso podrían variar de la prevista en el Anexo II y manifiestan que no objetarán la misma, salvo que esta impida o dificulte de forma sustancial algún emprendimiento o actividad, que, a la fecha de firma de este Convenio, LOS PROPIETARIOS estuvieran desarrollando.

SEGUNDO - FINES: La Servidumbre de Paso se constituye a los fines de que, con las más amplias facultades, LA EMPRESA y los terceros debidamente autorizados por ella (según se indica en la cláusula TERCERA) puedan acceder al predio donde se construirá, desarrollará y explotará el PROYECTO a través del área afectada en el presente Convenio.

TERCERO - DERECHOS DE LA EMPRESA: En virtud de la presente Servidumbre de Paso, LA EMPRESA podrá ingresar al inmueble donde se emplazará el PROYECTO por el camino de acceso fijado en la presente. A tales efectos LOS PROPIETARIOS se obligan a permitir el ingreso al Inmueble, con acceso independiente, del personal de LA EMPRESA y los terceros por ella autorizados (incluyendo, pero sin limitarlo a sus asesores, auditores, contratistas, subcontratistas, proveedores y/o clientes) a los fines que puedan ingresar y transportar todos los elementos necesarios para la construcción, desarrollo, explotación, operación, mantenimiento y/o remoción del PROYECTO. LA EMPRESA y los terceros por ella autorizados podrán utilizar el área afectada a la Servidumbre de Paso para ingresar al predio del PROYECTO en cualquier momento, las veinticuatro horas del día, todos los días de la semana, sin necesidad de aviso o autorización previa por parte de LOS PROPIETARIOS, siendo suficiente autorización irrevocable la firma del presente Convenio.



CUARTO – RESTRICCIONES AL DOMINIO - VIGENCIA: Se deja perfectamente establecido que LOS PROPIETARIOS no podrán efectuar dentro del área afectada a la Servidumbre de Paso, construcciones, plantaciones y/o realizar cualquier otra actividad que pueda afectar, dificultar o entorpecer el derecho de paso de LA EMPRESA por el camino trazado. LOS PROPIETARIOS garantizan a LA EMPRESA que el área afectada a la Servidumbre de Paso se encuentra libre de ocupantes, restricciones, turbaciones, gravámenes y/o vicios ocultos, siendo solidaria e ilimitadamente responsables por el no cumplimiento de esta garantía. Se deja expresa constancia que el plazo de vigencia de esta Servidumbre de Paso es de 25 años en los términos del artículo 2165 del Código Civil y Comercial de la Nación.

QUINTO – IMPORTE INDEMNIZATORIO: Las Partes de común acuerdo fijan la suma única, total y definitiva de DOLARES CINCUENTA Y CINCO MIL (US\$ 55.000,00.-) en concepto de indemnización total por la Servidumbre de Paso que se constituye por este Convenio. Suma que se abonará a las partes firmantes del siguiente modo: A favor de la empresa **REDUCTO PATAGONICO S.R.L.**, la suma de DOLARES ESTADOUNIDENSES TREINTA MIL (US\$ 30.000,00.-) y a favor del Sr. JOSE DEHAIS la suma de DOLARES ESTADOUNIDENSES VEINTICINCO MIL (US\$ 25.000,00.-). LA EMPRESA cancelará las sumas mencionadas en las siguientes proporciones: El 30% será exigible dentro de los CINCO (5) días hábiles de que LA EMPRESA reciba de ambos los datos de los números de cuenta para transferir; datos que deberán ser proporcionados al correo electrónico del representante legal de LA EMPRESA; debiendo acompañar el certificado de Dominio correspondiente en un todo de acuerdo a lo indicado en el punto b) del Considerando . A falta de dicha indicación, LA EMPRESA no podrá ser considerada en mora del pago por ninguno de LOS PROPIETARIOS, debiéndose éstos de abstener de realizar cualquier acto que pudiera afectar o dificultar el derecho de paso de LA EMPRESA. El pago se realizará mediante transferencia bancaria a las cuentas que cada uno de LOS PROPIETARIOS le indiquen, las cuales deberán estar a sus respectivos nombres. LOS PROPIETARIOS reconocen que la constancia de transferencia bancaria tendrá carácter de carta de pago sirviendo de único y suficiente recibo. LOS PROPIETARIOS renuncian a reclamar cualquier otra suma o indemnización con motivo de la afectación del Inmueble al derecho real de servidumbre. El segundo pago del 30 % se realizará a los 90 días de haber realizado el pago del 30 % inicial. El 40% restante de la indemnización será abonada por LA EMPRESA en el momento en que las Partes concurren para elevar el presente Convenio a escritura pública ante escribano designado por LA EMPRESA.

SEXTO – INSCRIPCIÓN: El presente Convenio se inscribirá, en el Registro Público de la Propiedad Inmueble de la Ciudad de Neuquén, previa intervención de un Escribano Público, para la elevación a escritura pública del presente acto. Los gastos que demande la elevación a escritura pública e inscripción del Convenio de Servidumbre de Paso en el Registro Público serán soportados LA EMPRESA. LOS PROPIETARIOS aceptan en forma irrevocable que LA EMPRESA podrá ceder sus derechos bajo el presente Convenio a cualquier sociedad afiliada a su grupo económico, quedando a cargo de LA EMPRESA los gastos que en ese caso implicase su inscripción en el Registro Público. En el caso que LA EMPRESA decida ceder este acuerdo a una sociedad no afiliada, deberá



requerir la previa conformidad del PROPIETARIO, que no podrá ser irrazonablemente denegada.

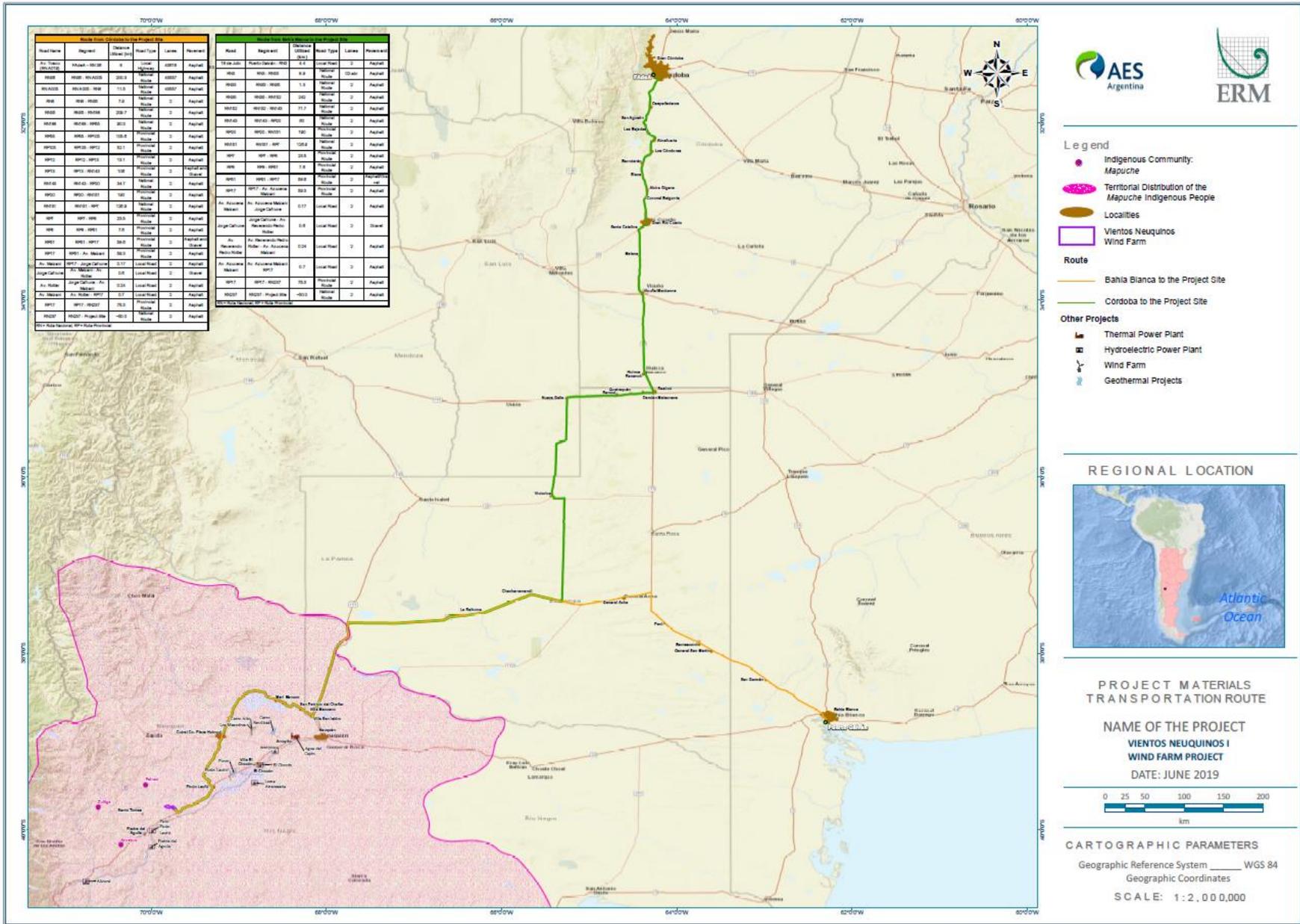
SÉPTIMO – DOMICILIO: Para todos los efectos legales del presente Convenio, las partes constituyen los domicilios señalados al principio donde se tendrán por válidas las notificaciones que pudieran tener con motivo o en relación con el mismo.

OCTAVO – LEY APLICABLE – JURISDICCIÓN: El presente Convenio de Servidumbre de Paso será regido e interpretado por las leyes de la República Argentina. Queda convenida la jurisdicción de los Tribunales Ordinarios con competencia en lo civil sitos en la Ciudad de Autónoma de Buenos Aires, haciendo renuncia expresa los firmantes a cualquier otro fuero o jurisdicción que pudiera corresponder.

NOVENO – IMPUESTO DE SELLOS: El presente Convenio se encuentra exento del impuesto de sellos en virtud a lo establecido por el artículo 3 inciso b) de la Ley 3.108.

En prueba de conformidad, a los Siete (7) días del mes de Junio del año 2019 se firman cuatro ejemplares de un mismo tenor y a un solo efecto, en lugar y fecha de su otorgamiento.

APPENDIX H TRANSPORTATION ROUTE



APPENDIX I STAKEHOLDER ENGAGEMENT PLAN

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