Chapter 2:

Determination and justification Of the Area of Influence EIA Espejo de Tarapacá

Region of Tarapacá, Chile

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2. DETERMINATION AND JUSTIFICATION OF THE AREA OF INFLUENCE

2.1. Introduction

The project of hydro-pumping plant with seawater "Espejo de Tarapacá" will be located in the communes of Iquique and Pozo Almonte, province of Iquique, Region of Tarapacá, approximately 100 km south of the city of Iquique. The nearest towns are the River Seco Cove, next to a project path and 14 km further south, Caleta San Marcos, located at 500 m from the project.

The project consists of the installation and operation of a reversible hydraulic plant, i.e. the same machines function as pumps in a sense of water circulation or as turbines in the other direction, are the modes pumping and generation respectively. Likewise, regardless of the mode of operation in which the plant is operating, the same surface works, the water canalizations, the underground and the submarine will be used.

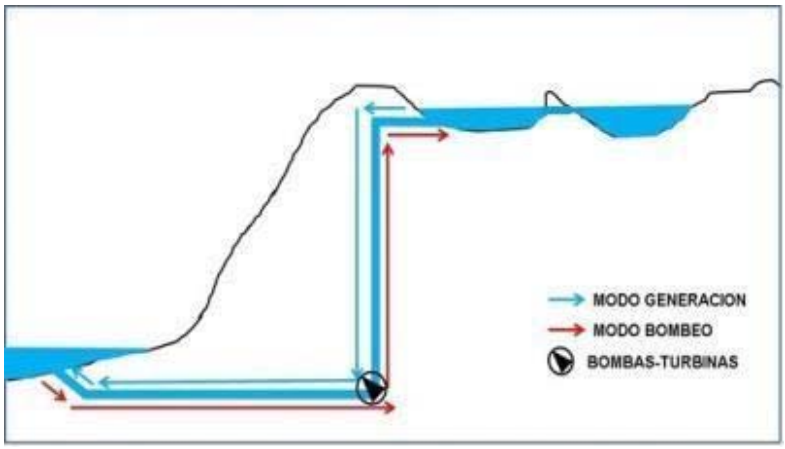
The installed power will be 300 MW and It will have three reversible hydraulic turbines of the Francis type of 100 MW each.

In its operation, during the day it'll pump seawater through Pumping Equipment-generation Which will be carried through a tunnel to Natural concavities located at 585 M.A.S.L. These concavities will be covered by a bituminous membrane and the reservoir of seawater to be generated will have an area of approximately 375 ha, at an approximate height of 609 M.A.S.L. This reservoir will accumulate seawater pumped during the day. Then, during the night, the plant will operate in generation mode, the accumulated water in the reservoir will flow by gravity towards the sea, taking advantage of the height between the coastal border and the plateau, going through the same pump-generation equipment, this time to generate Electricity

The point of intake and discharge of water in the sea is the same, since the plant is reversible and will use the same works and machines for the circulation of seawater in pumping mode and in generation mode. All these works are in the commune of Iquique.

The following figure presents a diagram that charts the reversible operation mode of this control unit.

Figure 2-1: Representation of the Operation Reversible: BOmbeo/Generation.

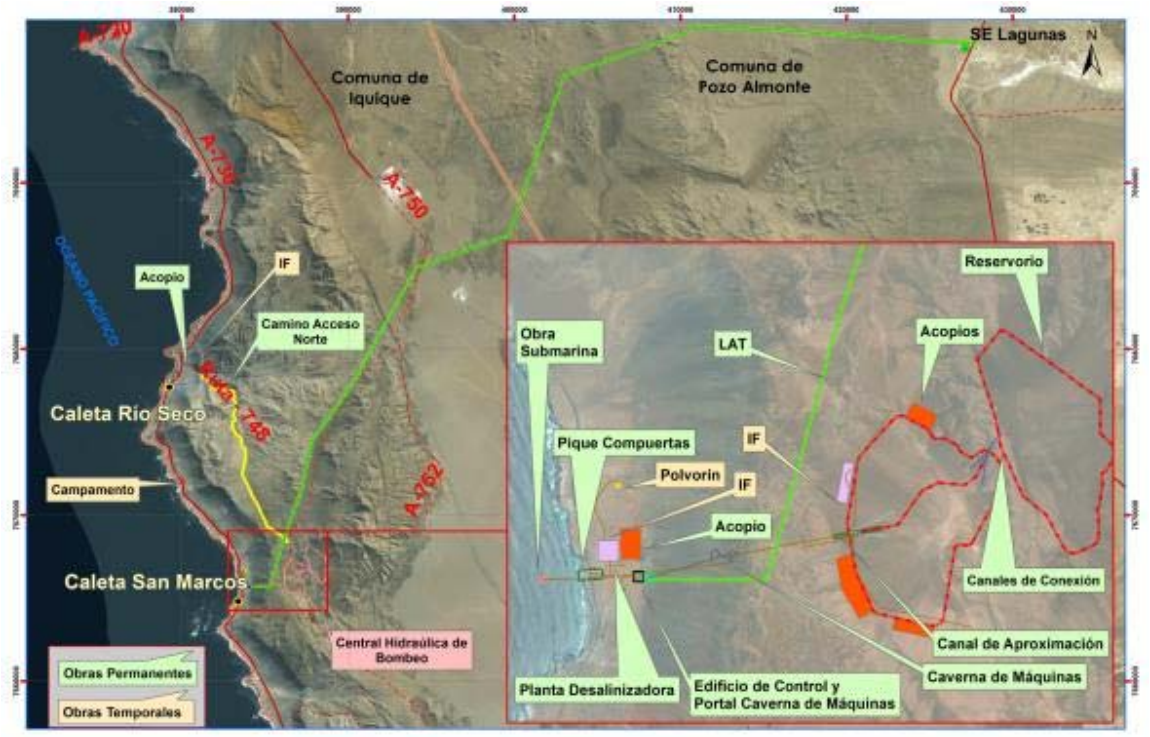


Source: Own Elaboration.

An annual average generation of 1.75 is estimated Gwh/day which will inject electricity into the existing Lagunas substation of the large North interconnected system (SING) by means of a 65 km long electrical transmission line (LAT). The last 35 km approximately, of LAT are in the commune of Pozo Almonte.

In the following figure you can see the location of the works of the project.

Figure 2-2: Works of the project



Source: Own Elaboration.

This chapter responds to the requirement established in The article 2 letter a) of the D. S. 40/12 Mma, regulation of the environmental impact assessment system, where it is indicated as *"The geographical area or space, whose attributes, natural or sociocultural elements must be considered in order to define whether the project or activity generates or presents any of the effects, characteristics or circumstances of article 11 of the Law, or To justify the non-existence of such effects, characteristics or circumstances. "*

Moreover In the Article 18 (d) of the DS 40/12, which speaks of the contents of the environmental impact studies, It is noted that the area of influence of the project or activity *".... will be defined and justified for each affected element of the environment, taking into consideration the potentially significant environmental impacts on them, as well as the geographical space in which the parts, works and/or actions of the Project or activity"* Making a General description of the same.

In this sense, this chapter will define and justify the area of influence taking into consideration the geographical space in which the parts are located, works and/or actions of the "EIA Espejo de Tarapacá" project and the potentially significant environmental impacts for each affected element of the environment.

2.2. Methodology

To Effect of determining the area of influence (AI) of the project, An analysis has been carried out Cause-effect where they are made Explicating causal relationships that account for the development of the potential effects in each component of the medium Mbiente.

In order to define and justify the area of influence of the potentially affected components of the environment and to establish their area of influence, an analysis was carried out proceeding as follows:

1st Identification of project works that give rise to the potential effects on the different components of the environment, as has already been realized in Chapter 1 of this EIA.

2nd Elaboration ofL List of components of the environment that in the course of the execution of the works and activities considered by the project could develop potential effects, characteristics or circumstances of article 11 of the Law on environmental bases.

3rd Cause-effect conceptual analysis for each Component Environmental impact of the project Relates The works and activities of the project with whats components of the Medio ToMbiente.

4th Estimation of the Space in which the PotNciales significant effects.

5º General description of the area of influence.

2.3. Project Location and its principals of objectives

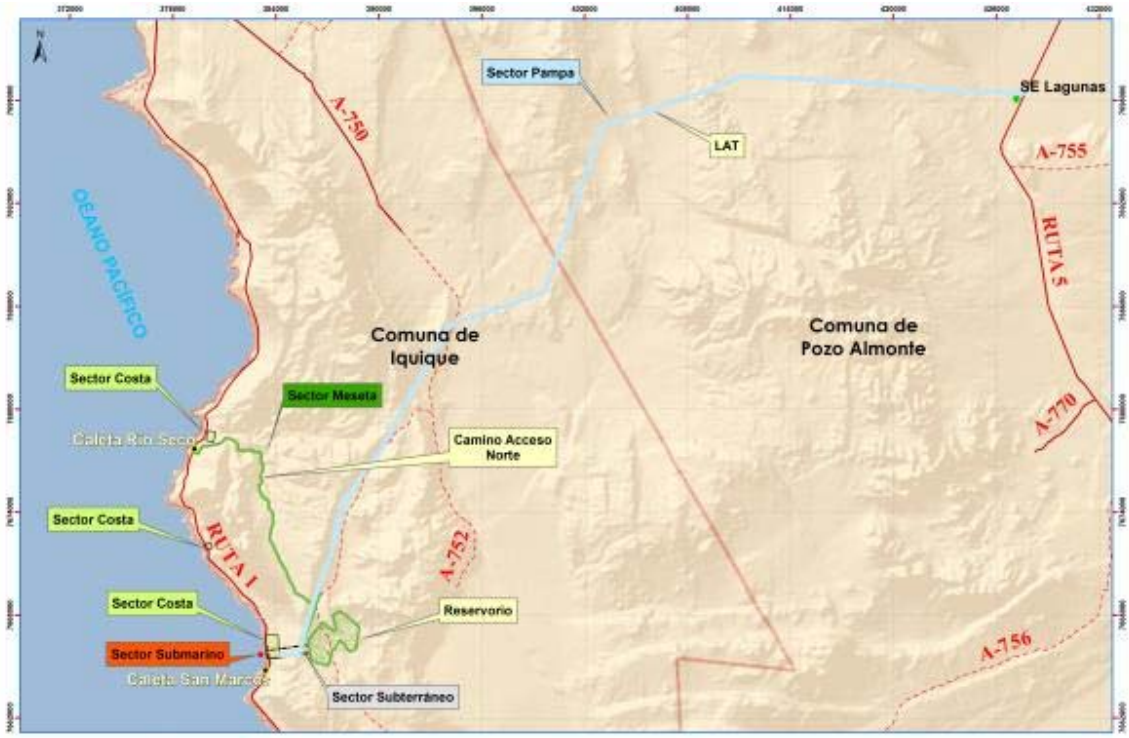
The project will be located in the communes of Iquique and Pozo Almonte, province of Iquique, Region of Tarapacá, specifically about 100 km south of the city of Iquique. The nearest towns are Caleta Río Seco and Caleta San Marcos, Which are approximately 500 m and 3 km of works of the project, respectively.

For A Best Analysis, the project area was divided into five sectors In which the works necessary for their operation will be carried out, These Are:

- Submarine Sector
- Sector Costa
- Underground Sector
- Plateau Sector

- Pampa Sector

Figure 2-3: Sectors of Project



Source: Own Elaboration.

The main works and activities of the project, in each of its phases, have been described in detail in Chapter 1 of the EIA. By way of summary, in the Table 2-1 And Table 2-2 are presented the Main Works or activities of the project, taking into account that they correspond to those that could generate effects on the environment.

Table 2-1: Summary of principles and objectives

Sector	Main works	Temporality
Submarine	Underwater Take and unload	Permanent
Coast	Area of operations	Permanent
	Potable Water supply system	Permanent
	Portals Costa	Permanent
	Installing Fauna's for the construction phase (camp)	Temporary
	Camp	Temporary
	Installation of tasks for the construction phase (sector San Marcos)	Temporary
	Access roads Sector Costa	Temporary and permanent
	Areas of stockpiles	Permanent
	Powder keg	Temporary
	Medium voltage Electric transmission line (LMT)	Permanent
	High Voltage electric transmission line (LAT)	Permanent
	Installation of slaughter Caleta Rio Seco	Temporary
Underground	Lower Tunnel	Permanent
	Ma Cavern Machines	Permanent
	Upper Tunnel	Permanent
Plateau	Portals Reservoir	Permanent
	TOMA and download Higher in the Reservoir	Permanent
	Reservoir	Permanent
	Reservoir Facility	Temporary
	Areas of stockpiles of excavation material Reservoir	Permanent
	Powder keg Reservoir	Temporary
	Roads Access Plateau Sector	Permanent
	Road work fronts and reservoir works to billets	Temporary
	Area Control and Communication Reservoir	Permanent
	Medium Voltage power line	Permanent
	High Voltage power line	Permanent
Pampa	Electric transmission Line High Voltage	Permanent
	Service Path Electric transmission line High Voltage	Permanent
	Mobile Fronts working LAT	Temporary

Table 2-2: Summary Principles objectivities Of Project by phase.

Activities	Phase		
	Fc	Fo	Fci
Hiring of Manpower	X	X	X
Preparation of the Terrain	X		
Transport of materials, supplies, waste and personnel	X	X	X
Installation slaughter, camps, warehouse of material collection, storage of waste, tank of fuel, polvorines and work fronts	X		X
Ground movement	X		
Construction and improvement of access roads	X		
Portals Construction	X		
Tunnel construction, piques and Cavern of machines	X		
Building construction	X		
Reservoir Waterproofing	X		
Assembly of equipment	X		
Testing and commissioning of the plant	X		
Construction LAT	X		
Potable Water supply system	X		
Collection of excavation material	X		
Withdrawal and disposition of Liquid waste	X	X	X
Withdrawal and disposition of solid waste	X	X	X
Withdrawal and disposition PTAS Sludge	X	X	X
Construction Take and unload Underwater	X		
Brine Discharge Piping Installation	X		
Removal of facilities for slaughter and cleaning	X		X
Underwater Take and unload		X	
Hydraulic Central operation		X	
Electric power transmission		X	
Central Maintenance and desalination plant		X	
Desalination plant operation		X	
Maintenance LAt		X	

Note: FC: Phase Of Construction FO: Phase Of Peraciand FCI: Phase of closing

2.4. Identification of To Those who Elements that QOdrían VErse To Fectados

In this Title are listed The components of the environment that Could be the subject of potential Environmental effects For the development of the project and the Causal relationship. The Elements analyzed are those described in the regulation of the environmental impact system D. S. n ° 40/2012, Minister of the MEdio ToMbiente, in article 18, letter D).

For these purposes, as ordered by the regulation, they shall be considered as "probable" The potentially significant environmental impacts on the elements of the environment.

The following is a Table With the Components or factors Environmental analysis in their relationship with the project to Then Power Define the area of influence in terms of Potential Effects of construction, Operation or close of the project Espejo de Tarapacá. The analysis of the impacts will be carried out in the corresponding chapter of this EIA.

Table 2-3: Identification Components Potentially affected and justification

Environmental Factor	Causal relationship	Probability
Physical environment		
Meteorology	The project does not consider works or activities that are likely to affect meteorology at the local level or at the national level.	Improbable
Air quality	The project will generate emissions to the atmosphere, mainly MP10 particulate matter, during the phase of construction Due to earth movements, use of machinery, excavations, road construction, surface installations, vehicle flow. Emissions will be negligible in the Operation phase And will be mainly related to the circulation of vehicles.	Likely
Noise and vibration	The project will generate acoustic emissions in its construction phase, Originated by the use of machinery, vehicle flows, road construction and installation of surface installations. Openings of access to underground works will produce noise and vibrations, which will decrease to Imperceptible as they move forward and become underground jobs. The noise will be despicable In The Operation phase.	Likely
Electromagnetic fields	The project considers the construction of a new Substation, which will be encapsulated and underground. From here it will	Likely

Environmental Factor	Causal relationship	Probability
	connect the line of electrical transmission of high voltage (LAT), whose connection to the interconnected system of the large North will be made in the existing substation "Lagunas". The operation of these works will generate Flow Of electric current that creates a magnetic field.	
Luminosity	During the construction will be installed Works of the project such as CampThe facilities for slaughter, Work fronts, They will have luminaires that could affect the light quality of the sky Because during the night, the artificial light emission could affect the visibility capacity of the sky. These works are temporary in nature and will not be maintained during the operation phase.	Unlikely
Geology	The project does not consider works or activities likely to affect geology at the local level or at the national level.	Unlikely
Geomorphology	The project considers the construction of 5 Collection Areas of material Of Excavation.	Likely
Natural hazards	The project is located near an area with marked slope and considerable height as is the coastal cliff. Despite the fact that large mass removal events are not evident, landslides may be likely to occur, so some project works may be susceptible to some such event.	Unlikely
Soils	The project considers the construction of works and roads, which can affect directly due to the loss and/or compaction of the soil.	Likely
Hydrology	There are No water courses near the project that can't Be affected.	Improbable
Hydrogeology	Underground water bodies are not evident in the sector where the excavation works will be carried out. As for the Works on surface, andL Project It considers the waterproofing of the 375 ha of the reservoir, in order to avoid the filtration of seawater to the subsoil.	Unlikely
Bathymetry	The project contemplates one orBra de Take and unload Underwater Outside the coastal protection zone that would not affect the bathymetry of the sector.	Unlikely

Environmental Factor	Causal relationship	Probability
Currents, tides and swells	The project contemplates a work of taking and unloading submarine Outside the coastal protection zone whose characteristics and dimensions would not affect Thes currents, tides and swells.	Unlikely
Water quality and sediments	The project contemplates the taking of 45 m3/s of seawater during the day and 28 m3/s of discharge during the night at the same point and outside the coastal protection zone.	Likely
Terrestrial ecosystems		
Flora and vegetation	The works of the Project is located Mostly In An environment where there is a total absence of vegetation due to the difficult climatic conditions, product of the negligible precipitations. However, the project works in the coastal sector Is Inserted Between the Oasis of Fog, Punta de Lobos, Alto Chipana And Pica's pavilion, so Could be Influenced By the coastal fog That could give rise To the existence of some plant species.	Likely
Fauna	Due to the location of the project and its works it is possible to identify *A priori* Two types of environments for fauna, one of them can be the absolute desert, which considers the works of the plateau sector and Pampa, which is Characterized by Be an environment Very unproductive, But that can present species Adapted to these conditions, such as reptiles *Liolaemus Stolzmanni* And *Phyllodactylus Gerrhopygus* And Some species of seabirds They could use Estand environment for reproduction. The other sector would correspond to the coastal environment, which is Determined by the presence of the ocean, which could prove favorable For the existence of various Species of birds, there being also reptiles fueremente associated with Intertidal.	Likely
Marine ecosystems		
Biological oceanography	The project contemplates The Take of 45 m^3Sea water/s And 28 m^3/s of Download From outside the coastal protection zone.	Likely
CULTURAL Heritage		

Environmental Factor	Causal relationship	Probability
Archaeology	There are archaeological backgrounds in The sector of Chomache, that although it is to the south of the Caleta San Marcos corresponds to archaeological evidences closer to the area of the project, which is why it is considered that the site works and development of construction activities at that stage can produce interactions with archaeological sites present.	Likely
Underwater archaeology	The area of influence corresponds to the underwater works of the project, specifically to the work of taking and downloading. However, the area is located close to the anchorages Guanillo and Punta Lobos so there could be wrecks and wrecks.	Likely
Paleontology	In the area Of the project, specifically in the coastal sector There is an exhibition of coastal deposits Which could contain paleontological remains. Therefore, it is considered that the works of site of the project and development of construction activities at this stage can produce interactions with paleontological sites present.	Likely
Landscape		
Landscape	The works of the project are located in sectors with different types of landscapes, different infrastructure of connectivity and in large areas without inhabitants or economic activities. There are potential observers in the environment, specifically in the Coastal sector of the project. The reservoir's work will constitute a change in the landscape that could attract potential observers.	Likely
Protected areas and priority sites		

Environmental Factor	Causal relationship	Probability
Protected areas and priority sites	The project is mostly developed in land of national goods, outside protected areas. Only the connection of the high-voltage line with the large North interconnected system will develop In and close to a protected area specifically, The National Reserve Pampa del Tamarugal Since the existing substation, Lagunas, is located within the reserve.	Likely
Natural or cultural attractions		
Tourism	The project is not located within or near any area of tourist interest in the region (ZOIT), nor the sector defined by the Ministry of National Goods for tourism development in Tarapacá in its latest public tender. The works and activities in the coastal sector will be located next To tourist attractions Local such as Caleta San Marcos, which in summer season receives holidaymakers, And Caleta Rio Seco, weekend and summer destination.	Likely
Use of the Territory		
Land use	The project area, according to the current planning instruments, is in rural areas, so the project will probably require change of land use.	Likely
Economic and productive activities	Near the project area is located la Caleta San Marcos, Dedicted to the primary exploitation of marine resources. ESTA Caleta also has two AMERB for the production and extraction of molluscs and algae.	Likely
Infrastructure and equipment	The project will make use of the road network Existing and some new sections specific to the project, For the transfer of workers, machinery and materials	Likely
Human environment		
Geographic dimension	The project will be located close to human settlements, such as Caleta Rio Seco and Caleta San Marcos. QOr another part, there are sectors surrounding the areas of development of Physical works of the project (High voltage line) They don't present room of people, But what Could be Used by human groups for the development of economic activities In an	Likely
Demographic dimension		Likely
Anthropological Dimension		Likely

Environmental Factor	Causal relationship	Probability
Socio-economic dimension	extensive use of space, such as goat farming. The project also considers the habilitation and use of a project workers ' camp.	Likely
Social Welfare dimension	In the area of the project no indigenous communities or areas of development were identified, nor were indigenous human groups identified.	Likely

According to this review, the area of influence is described below to The factors Environments identified as "Likely" in relation to the Project Espejo de Tarapacá.

2.5. Determining the area of influence

Considering those environmental components on which an effect could be generated, as Identify or in the former section And Under the works and activities of the project, below is presented and justifies the extension of the area of influence for each of them.

2.5.1 Physical environment

2.5.1.1 Quality of TolRe

Causal relationship

The project will generate emissions to the atmosphere, mainly MP10 particulate matter, during the construction phase due to earth movements, use of machinery, excavations, road construction, surface installations, vehicle flow.

Emissions will be Despicable In the operation phase and will be mainly related to the circulation of vehicles For maintenance of facilities.

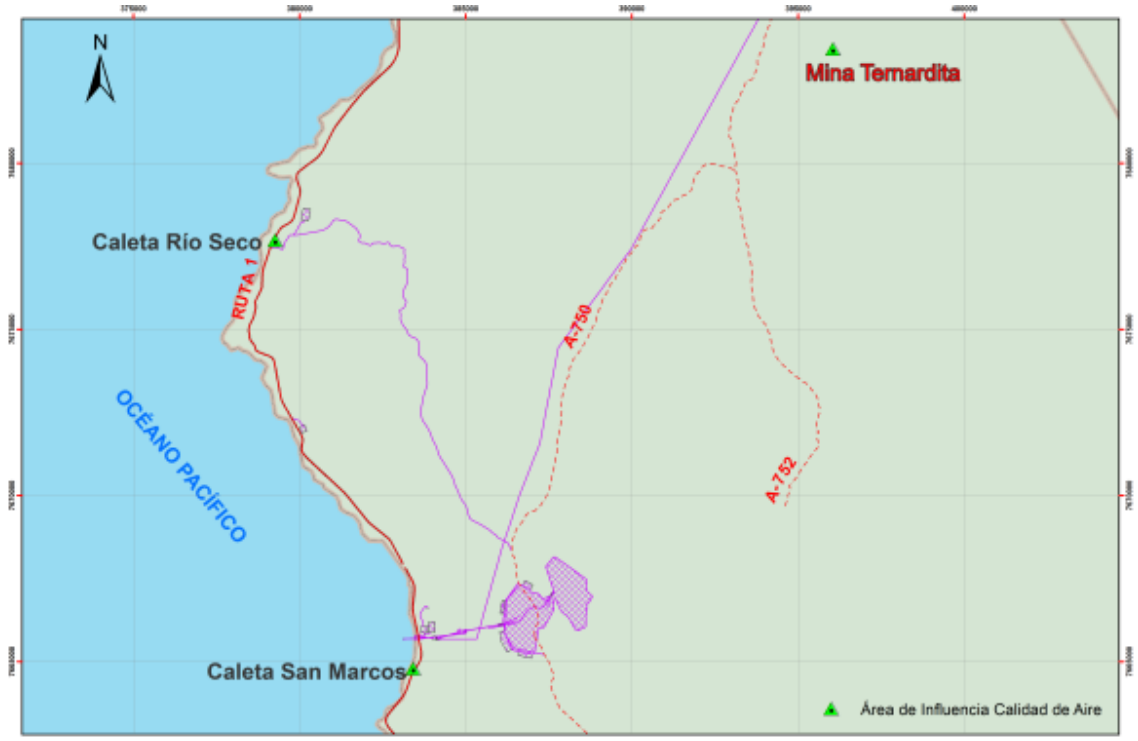
Potential effects

Alteration in air quality by emissions of combustion gases and particulate matter.

Area of Influence

The area of influence of the project will be determined by Sensitive receptors Closer To the works of the project, I mean To the area that It comprises the Caleta San Marcos, CDry river fin and mining sector teaNardita.

Figure 2-4: Area of influence air quality



Source: Own Elaboration.

Justification of the area of influence

The activities of the construction phase of the project would provoke Emissions Mainly from MP10.

2.5.1.2 Noise and vibration

Causal relationship

The project will generate acoustic emissions in its construction phase, originated by the use of machinery, vehicle flows, road construction and installation of surface installations. Openings of access to underground works will produce noise and vibrations, which decrease until they are imperceptible as they progress and become underground works. The noise will be Despicable In the operation phase.

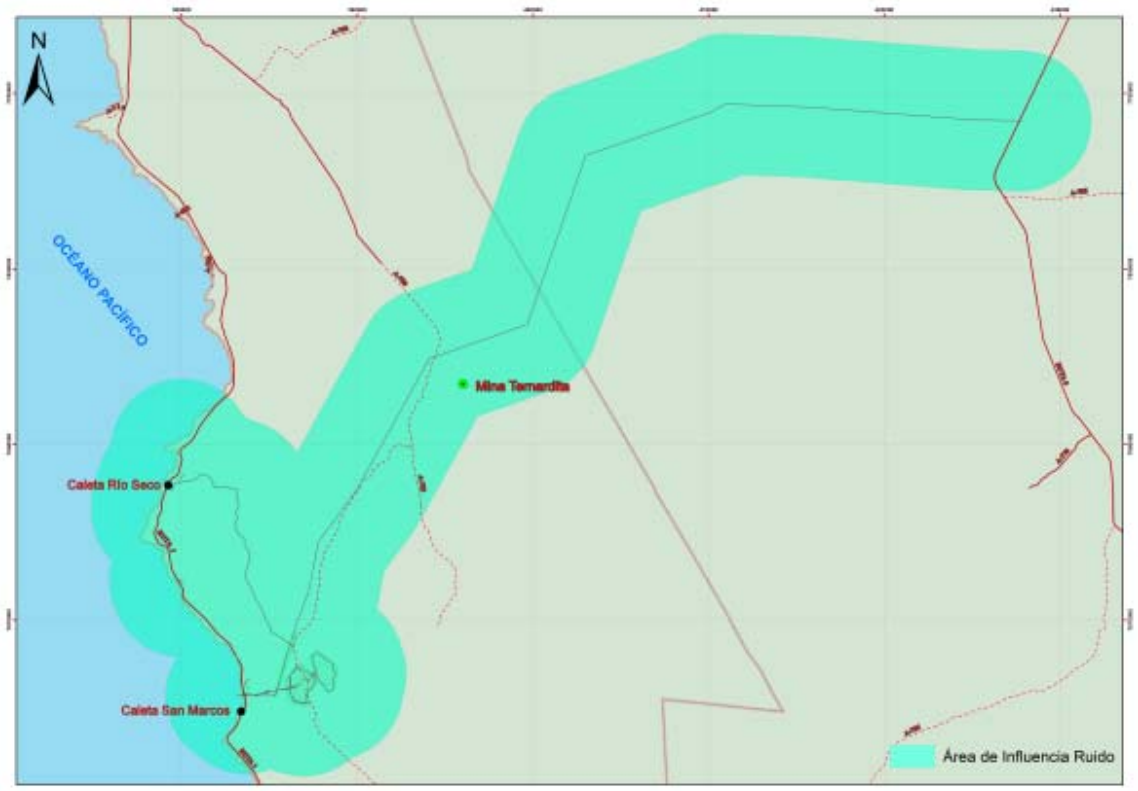
Potential effects

Alteration in baseline noise levels, for the generation of activities and works.

Area of Influence

The area of influence of the project Corresponds to the Territory where it is possible to perceive the levels of noise and vibration on the part of a receiver. For which the greatest distance of noise propagation was determined for both stages of the project, which corresponds to 4 km in the round From The Station source.

Figure 2-5: Area of influence noise and SawBraciones



Source: Own Elaboration.

Justification of the area of influence

The expected effects on noise and vibration emissions will be perceptible to an environment of 4 km to the round from Noise-emitting sources. Within this radius are sensitive receptors (Caleta SToN Marcos, Caleta Rio Seco and Mina teaNardita)

2.5.1.3 Fields Electromagnetics

Causal relationship

The project considers the construction of a new substation, which will be encapsulated and underground. From here it will connect the line of electrical transmission of high voltage (LAT), whose connection to the interconnected system of the large North will be made in the existing substation "Lagunas". The operation of these works will generate flow of electric current that creates a magnetic field.

Potential effects

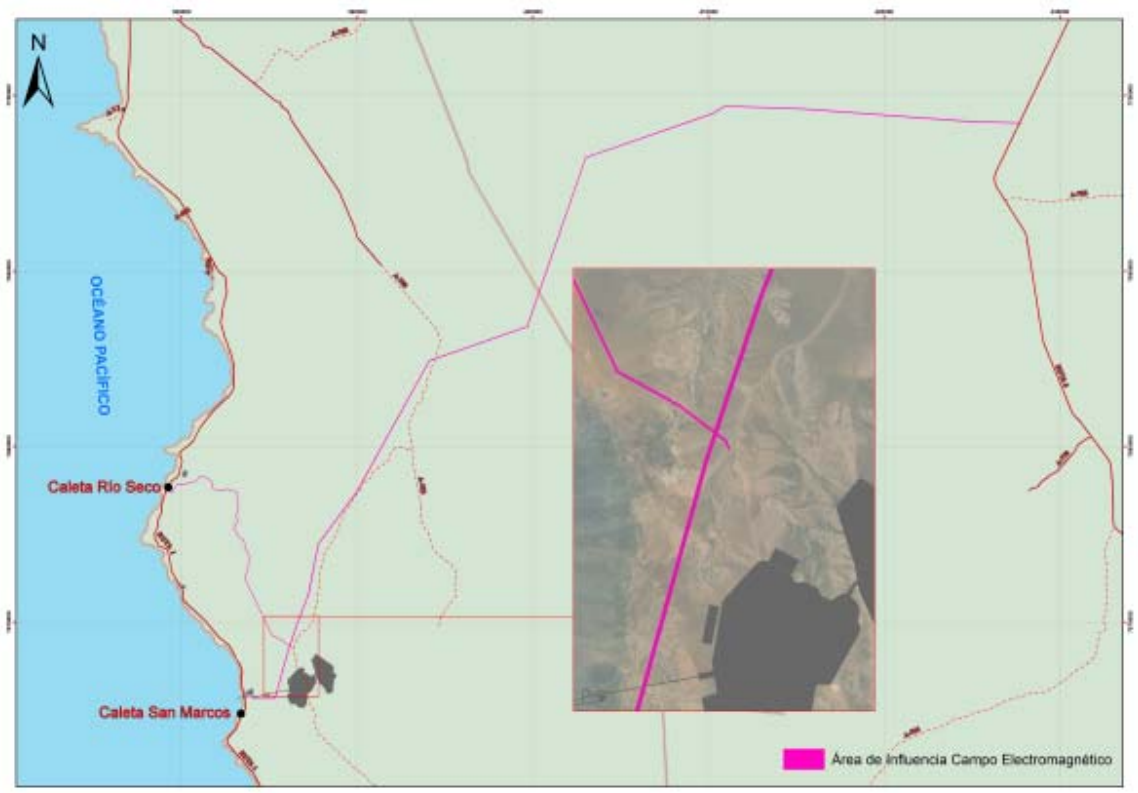
Electrical and magnetic field generation.

Area of Influence

The area of influence of the agent (transmission line High Voltage) is 20 m on each side of the line (total 40 m), defined mainly by the behavior of the electric field..

In the case of radio interference is defined an area of influence of 10 meters on each side of the line of medium voltage.

Figure 2-6: Area Of Influence Electromagnetic fields



Source: Own Elaboration.

Justification of the area of influence

The expected effects due to electromagnetic fields areRán detectable up to a distance of 20 meters on each side of the line of high tension and 10 meters on each side of the line of medium voltage

2.5.1.4 Geomorphology

Causal relationship

The project considers Ground movements for building land habilitation In addition to The construction of 5 material collection areas of ex-Digging

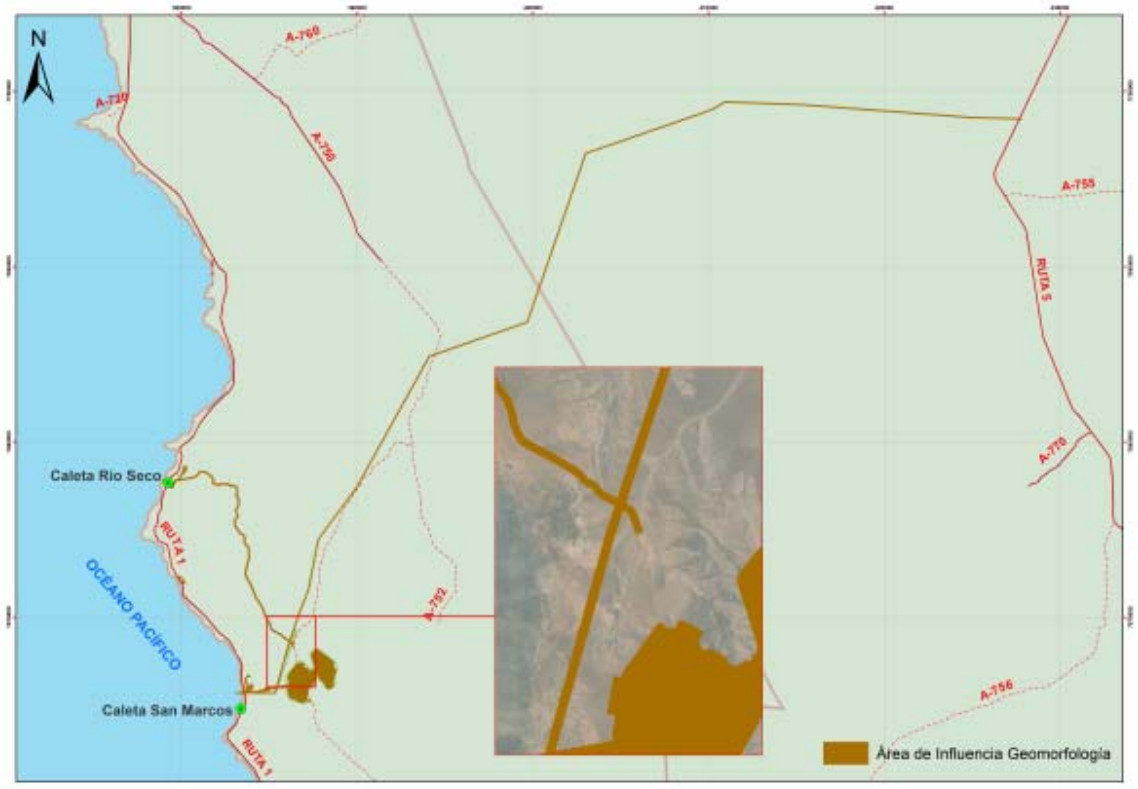
Potential effects

Modification of geomorphology for the facility of works, habilitation of roads and installation of billets of excavation material.

Area of Influence

The area of influence for the Ground component corresponds to a Area of 50 meters around the works of the project.

Figure 2-7: Area of Influence geomorphology



Source: Own Elaboration.

Justification of the area of influence

The Alterations on geomorphology They will occur on the grounds on which the works are to be located.

2.5.1.5 Soils

Causal relationship

The project considers the construction of works and roads, which can affect directly due to loss and/or soil compaction.

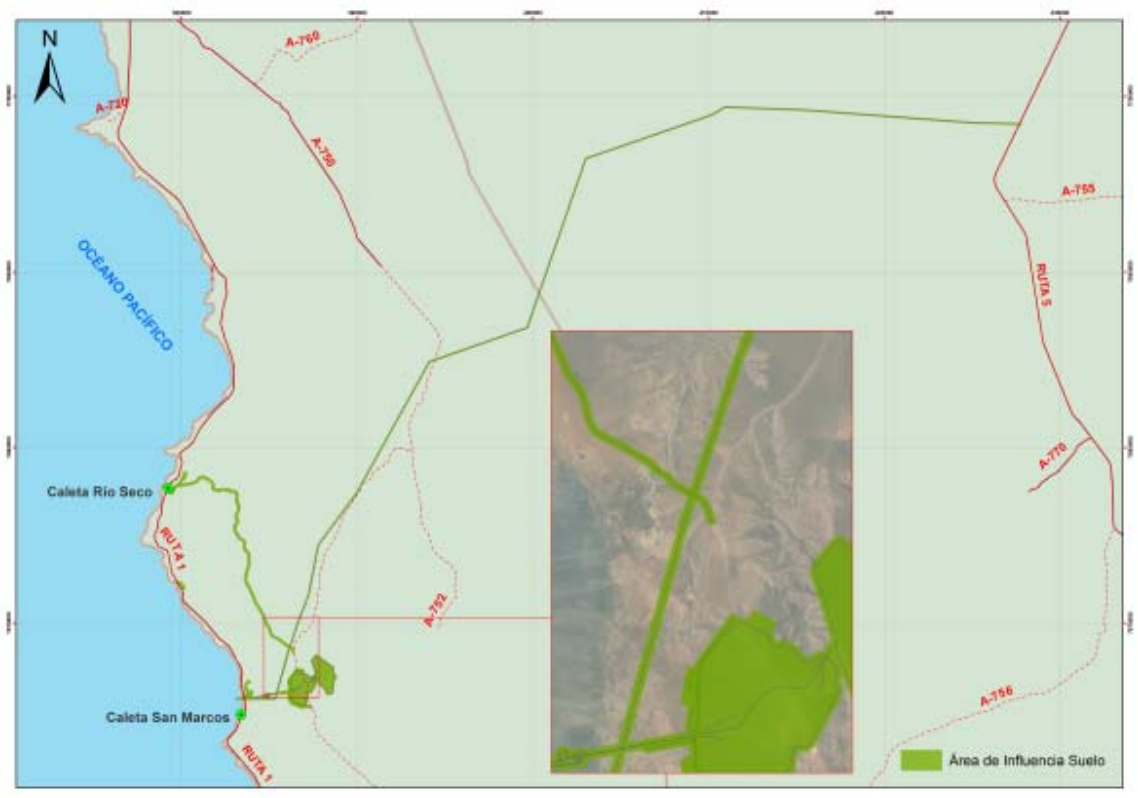
Potential effects

Loss of soil properties.

Area of Influence

The area of influence for the Ground component corresponds to a Area of 50 Meters around the works of the project.

Figure 2-8: Ground Influence Area



Source: Own Elaboration.

Justification of the area of influence

The Land occupancy It will occur on the grounds on which the works are to be located.

2.5.1.6 Quality of ToGua and Sediments

Causal relationship

The project contemplates the taking of 45 m3/s of seawater during the day and 28 m3/s of discharge during the night at the same point and outside the coastal protection zone.

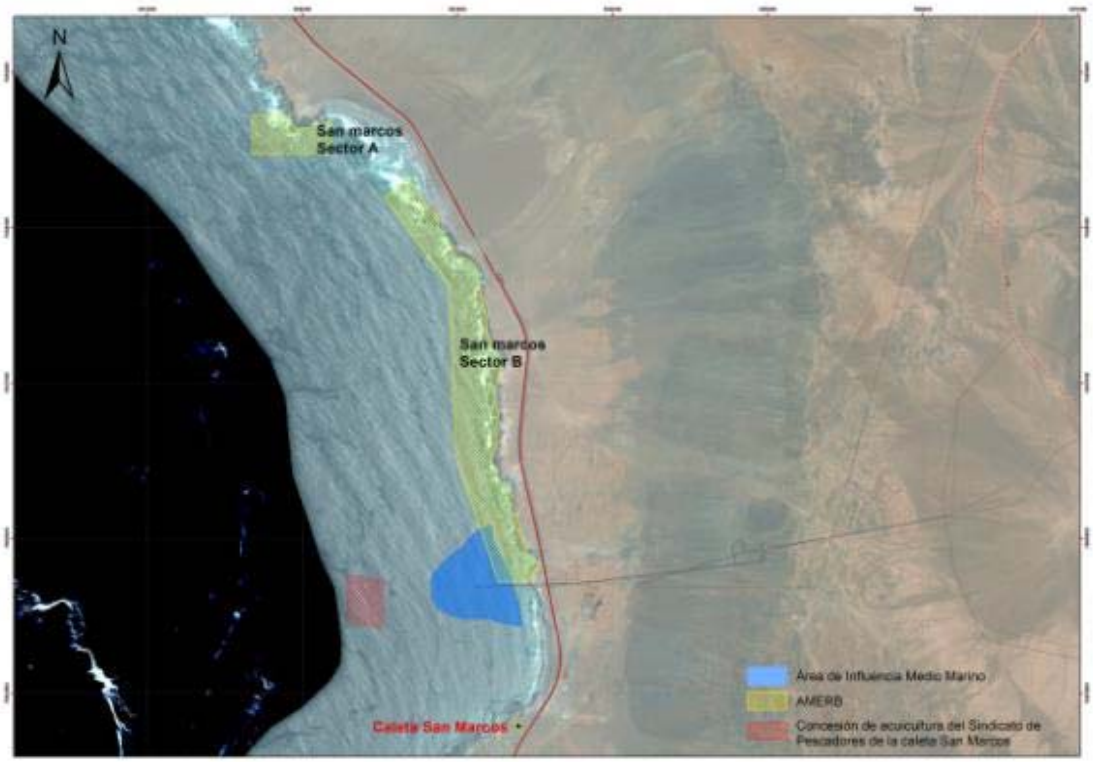
Potential effects

Decrease in the quality of marine waters and sediments.

Area of Influence

The area of influence shall correspond to the area determined by the limits of dispersion of the thermal boom, saline and suspended solids on the surface. The following figure shows the thermal boom with a boundary condition of 0,3°c-0,4Approximately differential °c with Temperature of the surrounding marine environment.

Figure 2-9: Area Of Influence In the S-Thermal boomUperficie



Source: Own Elaboration.

Justification of the area of influence

Expected effects on water quality and sediment will be perceptible to the maximum dispersion limit of the thermal boom

2.5.2 Terrestrial ecosystems

2.5.2.1 Flora and vegetation

Causal relationship

The works of the project will be placed mainly in an environment where there is a total absence of vegetation due to the difficult climatic conditions, product of the negligible precipitations. However, the works of the project in the coastal sector are inserted between the Oasis of Fog, Punta de Lobos, Alto Chipana and Pica's pavilion, so they could be influenced by the coastal fog that could give rise to the existence of some plant species.

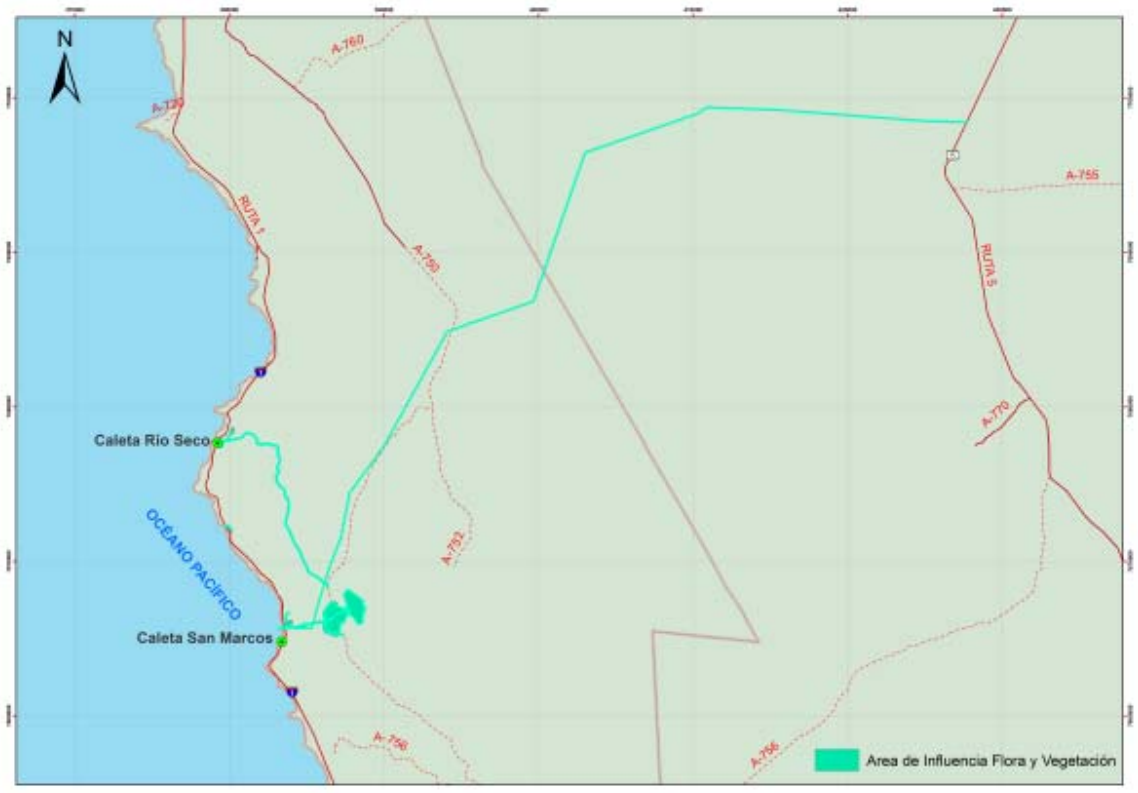
Potential effects

ToFectación de espEcies in a state of conservation by works and activities of the project.

Area of Influence

The area of influence will cover the areas of installation of works and development of activities of the project.

Figure 2-10: Area of influence Flora and vegetation



Source: Own Elaboration.

Justification of the area of influence

It is necessary to rule out the existence of vegetation in the Land on which the works will be located.

2.5.2.2 Fauna

Causal relationship

Due to the location of the project and its works it is possible to identify a priori two types of environments for fauna, one of them can be the absolute desert, which considers the works of the plateau sector and Pampa, which is characterized as a very unproductive environment , but which may present species adapted to these conditions, such as reptiles *Liolaemus Stolzmanni* And *Phyllodactylus Gerrhopygus* And some species of seabirds that could use this environment for reproduction.

The other sector would correspond to the environment of Costa which is determined by the presence of the ocean which could be favorable for the existence of various species of birds, also existing reptiles strongly associated to Intertidal.

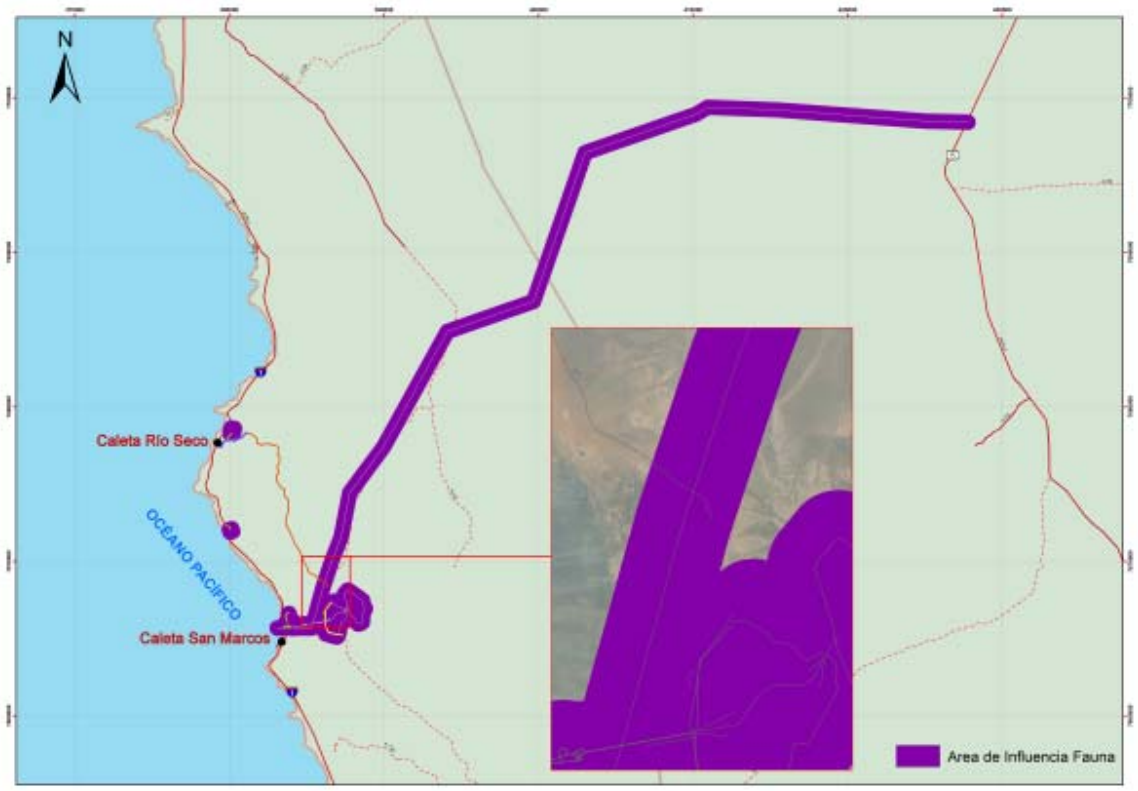
Potential effects

Alteration of potential sites of interest and loss of individuals of species in a state of conservation and low mobility.

Area of Influence

The area of influence will cover See 500 meters Around the works of the project.

Figure 2-11: Area of Influence FAuna



Source: Own Elaboration.

Justification of the area of influence

The project will be located on an area that can present species adapted to absolute desert conditions.

2.5.3 Ecosystems Marine

2.5.3.1 Oceanography Biological

Causal relationship

The project contemplates the taking of 45 m3/s of seawater during the day and 28 m3/s of discharge during the night at the same point and outside the coastal protection zone.

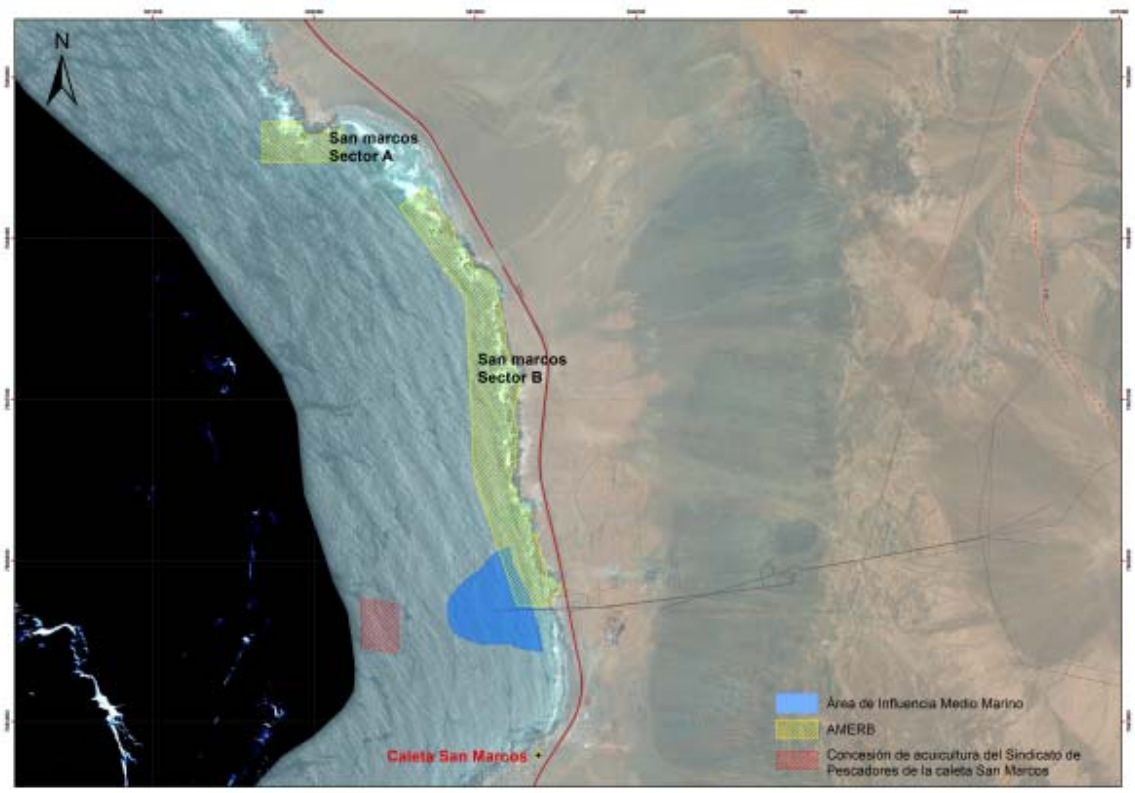
Potential effects

Decrease in the quality of marine waters and sediments.

Area of Influence

The area of influence shall correspond to the area determined by the limits of dispersion of the thermal boom, saline and suspended solids on the surface. The following figure shows the thermal boom with an edge condition of 0.3 °c-0, 4 °c approximately differential with the temperature of the surrounding marine environment.

Figure 2-12: Area of influence of the QLuma TÉrmica at SUperficie.



Source: Own Elaboration.

Justification of the area of influence

The expected effects on biological oceanography will be perceptible by the species in the biological communities.

2.5.4 Cultural Heritage

2.5.4.1 Archaeology

Causal relationship

There are archaeological antecedents in the sector of Chomache, that although it is to the south of the Caleta San Marcos corresponds to archaeological evidences closer to the area of the project, reason why it is considered that the works of site of this one and development of construction activities in this stage can produce Interactions with archaeological sites present.

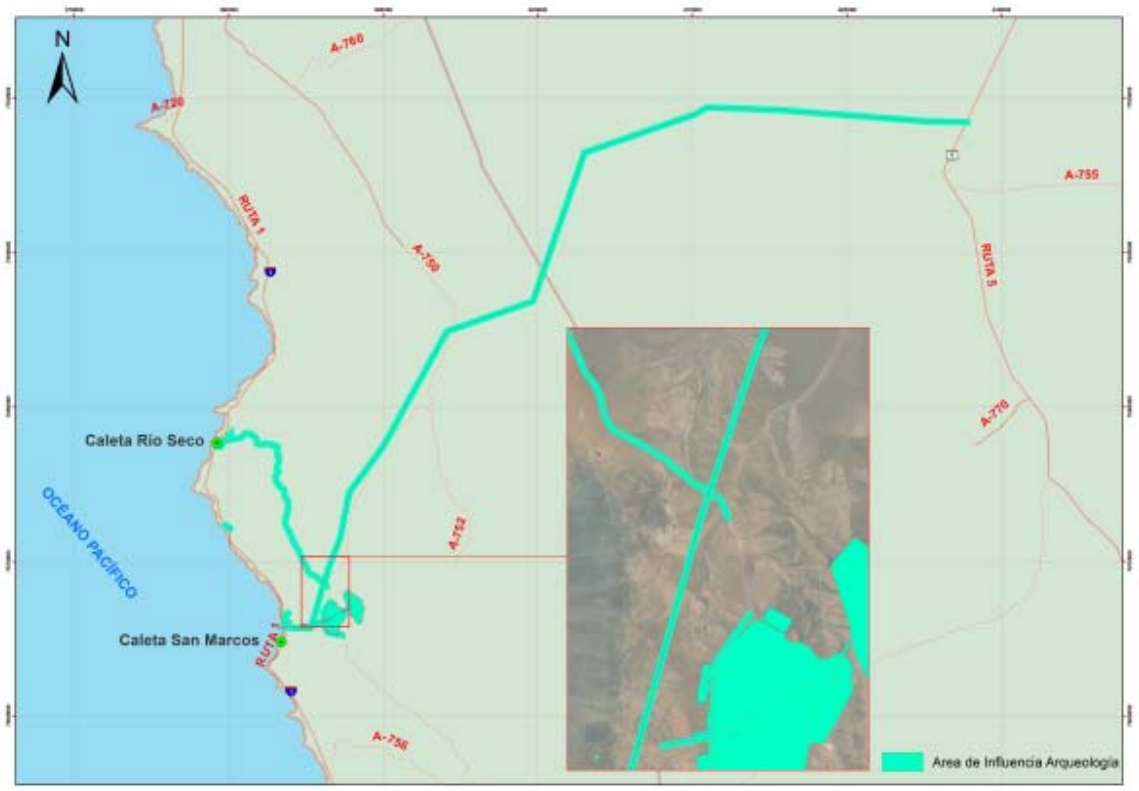
Potential effects

Site involvement With potential Archaeological.

Area of Influence

The area of influence will be the area of installation of the project works and to The linear works a buffer of at least 30 meters on each side of it.

Figure 2-13: Area of Influence archaeology



Source: Own Elaboration.

Justification of the area of influence

The location of The works can To present elements of cultural heritage.

2.5.4.2 Underwater archaeology

Causal relationship

The area of influence corresponds to the underwater works of the project, specifically to the work of taking and downloading. However, the area is located close to the anchorages Guanillo and Punta Lobos so there could be wrecks and wrecks.

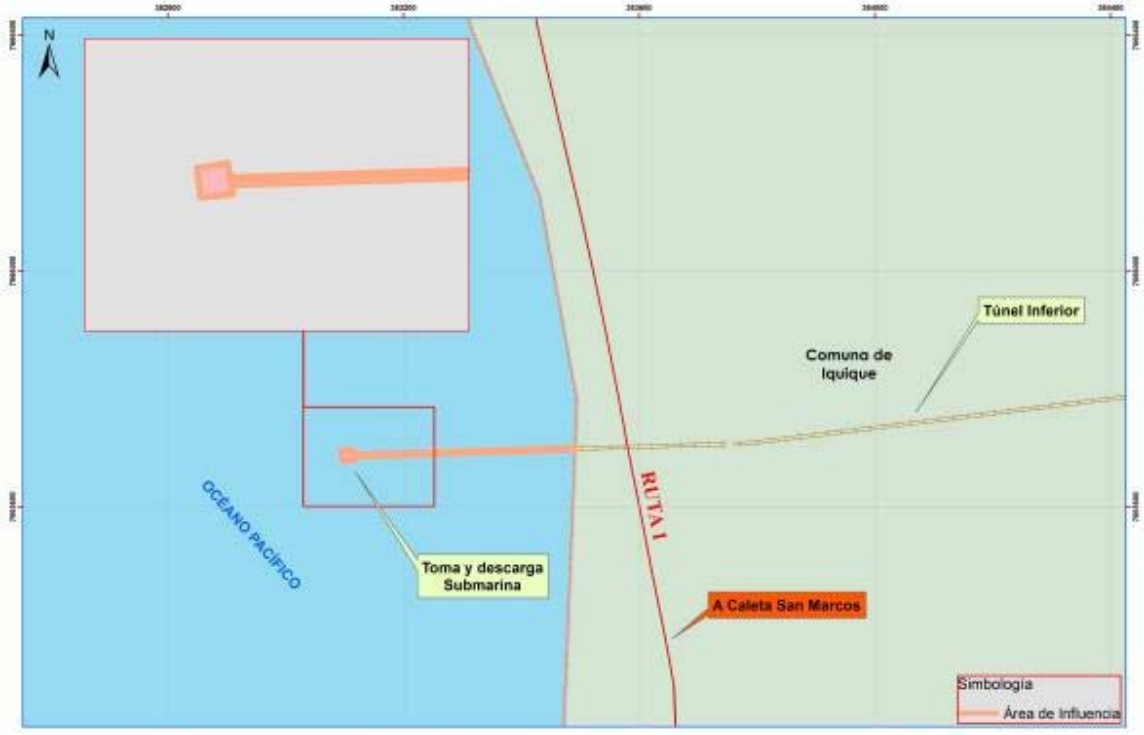
Potential effects

Affectation of underwater cultural heritage.

Area of Influence

The area of influence will be the area of installation of the works of taking and unloading of the project In the submarine sector.

Figure 2-14: Area of Influence archaeology



Source: Own Elaboration.

Justification of the area of influence

The site of the works can be To present elements of cultural heritage.

2.5.4.3 Paleontology

Causal relationship

In the area of the project, specifically in the coastal sector there is an exhibition of coastal deposits which could contain paleontological remains. Therefore, it is considered that the works of site of the project and development of construction activities at this stage can produce interactions with paleontological sites present.

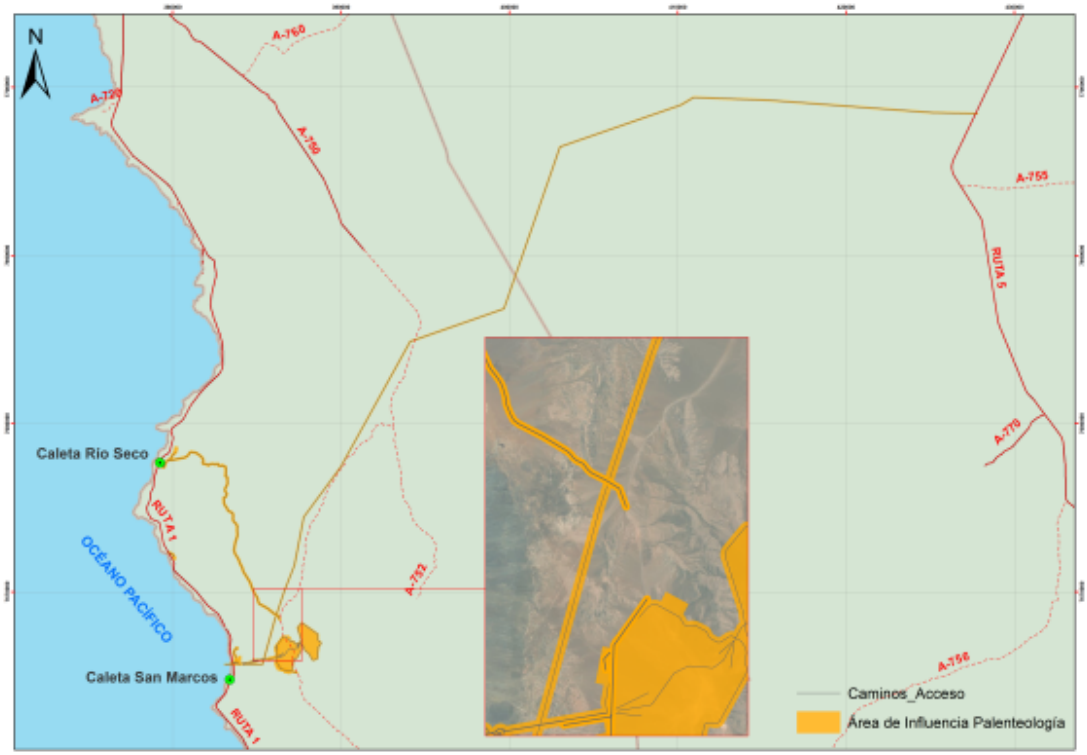
Potential effects

Affecting sites with potential fossil.

Area of Influence

The area of influence BeDetermined by a buffer of 50 meters around the works of the project.

Figure 2-15: Area of Influence paleontology



Source: Own Elaboration.

Justification of the area of influence

The location of The works can present elements of cultural heritage.

2.5.5 Landscape

2.5.5.1 Landscape

Causal relationship

The works of the project are located in sectors with different types of landscapes, different infrastructure of connectivity and in large areas without inhabitants or economic activities. There are potential observers in the environment, specifically in the project's coastal sector. The reservoir's work will constitute a change in the landscape that could attract potential observers.

Potential effects

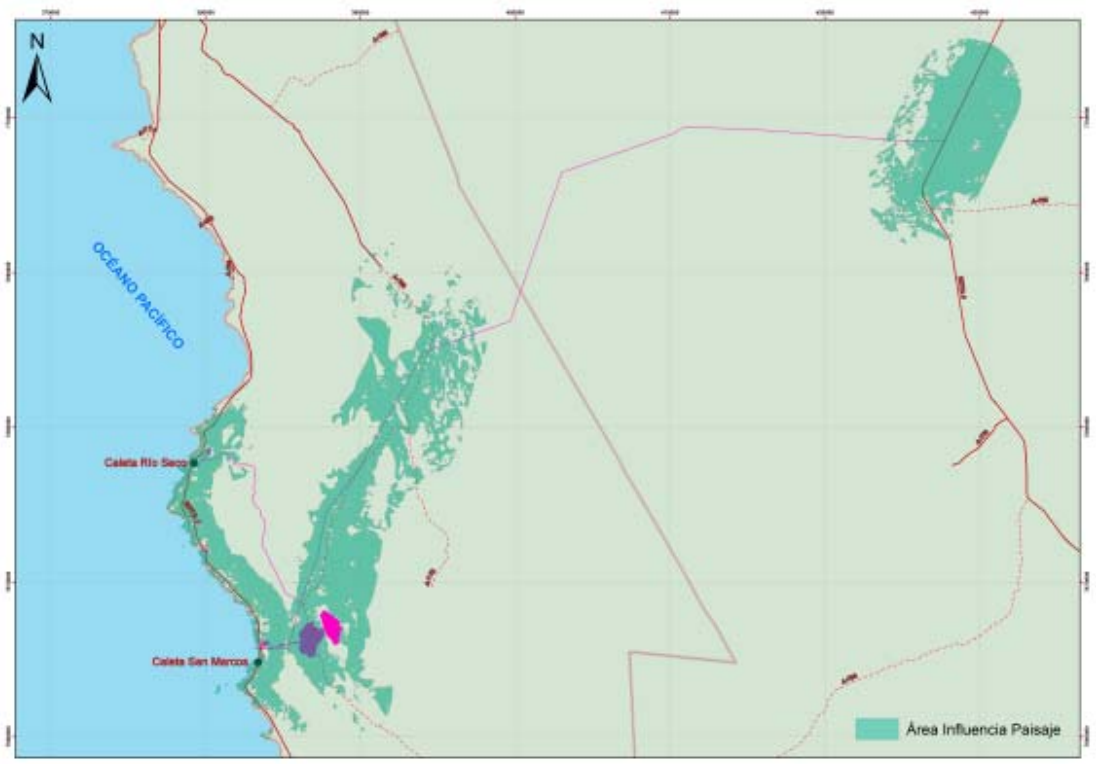
Altering the attributes of a landscape-valued zone.

Area of Influence

The area of influence will be the geographical space delimited by theS BasinS VisualIs Of the project's potential observers. These Observers Can be Specific or moving. Punctual observers correspond to those Whose visibility is given from static locations, such as a house, a group of houses or a meeting place, so that its visual basin is subject to a point. This is the case of CaleTa San Marcos and Caleta Rio Seco. The moving observers correspond to those Whose vision is momentary, but its visual basin is far more powerful because it is obtained from a route (not a point), such as a road or a path. Routes 1 and 5 would have this type of observer.

In order to determine the area of influence for the moving landscape observers, an analysis of Intervisibility, in other words, the visual watersheds of the identified points and observation routes were superimposed, which in this case resulted in two visual watersheds, the first one located in the coastal sector between Rio Seco and San Marcos, following Route 1, which was named as Coastal visual basin and the second corresponding to the visual basin of Route 5 in the Pampa del Tamarugal sector, named Visual basin of La Pampa. It is worth mentioning that in the coast sector, from north to south, the works of the project are confined to Caleta Rio Seco, Camp (7.5 km from San Marcos) and Caleta San Arches.

Figure 2-16: Landscape Influence Area



Source: Own Elaboration.

Justification of the area of influence

The delimitation of the area of influence responds to criteria specified in relevant guides.

2.5.6 Protected areas and priority sites

2.5.6.1 Areas QRotegidas

Causal relationship

The project is mostly developed in land of national goods, outside protected areas.

Only the connection of the high-voltage line with the large North interconnected system will be developed in and close to a specifically protected area, the Pampa del Tamarugal National Reserve since the existing substation, Lagunas, is located within This reservation.

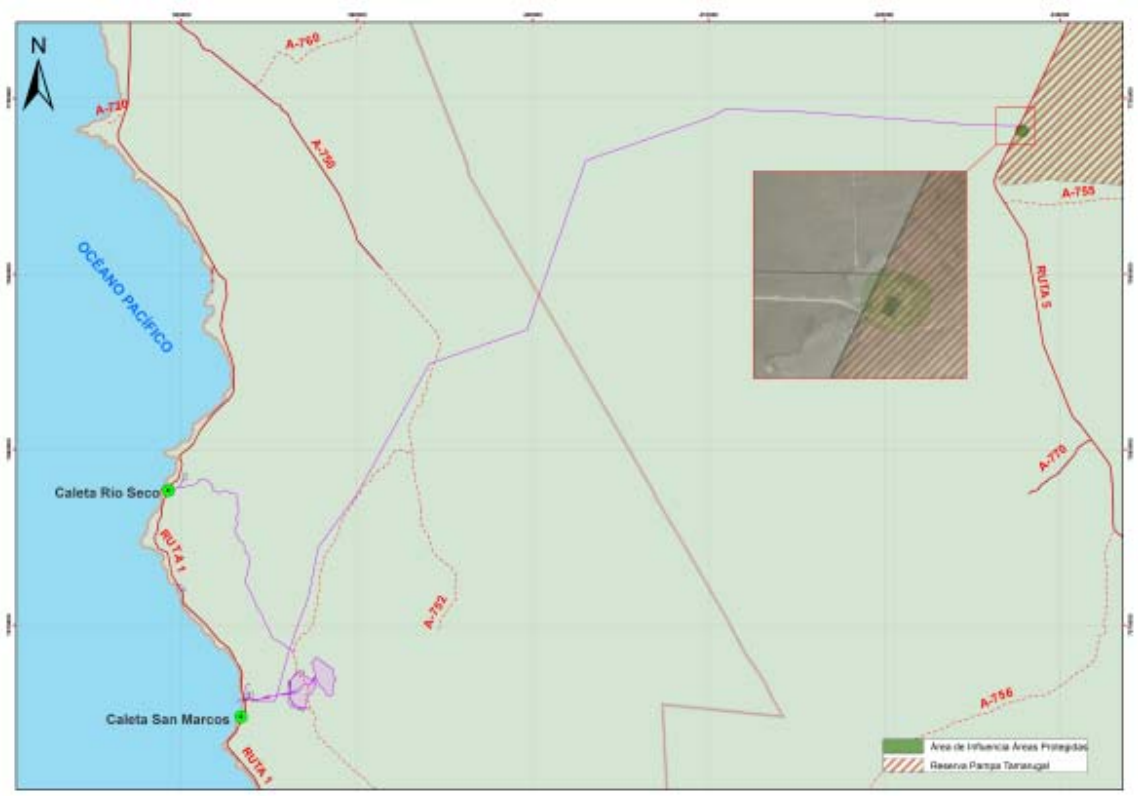
Potential effects

Affectation of The National reserve Pampa del Tamarugal By The connection of the high voltage line to Lagunas (existing) substation located within the aforementioned reserve.

Area of Influence

The area of influence of the protected areas component corresponds to the sector where project works will be located within the limits of the protected area identified, the Pampa del Tamarugal National Reserve, which is the arrival of the power line to the substation Lagoons, located inside the reserve.

Figure 2-17: Area of influence protected areas



Source: Own Elaboration.

Justification of the area of influence

The Power line of the project is connected to The Lagunas substation, located inside the reserve.

2.5.7 Attractions

2.5.7.1 Tourism

Causal relationship

The project is not located in or close to any area of tourist interest in the region (ZOIT), nor to the sector defined by the Min. Of National Goods for tourism development in Tarapacá in its latest public tender.

The works and activities in the coastal sector will be located close to local tourist attractions, such as Caleta San Marcos, That in summer season receives vacationers, And Caleta Rio Seco, Weekend and summer destination.

Potential effects

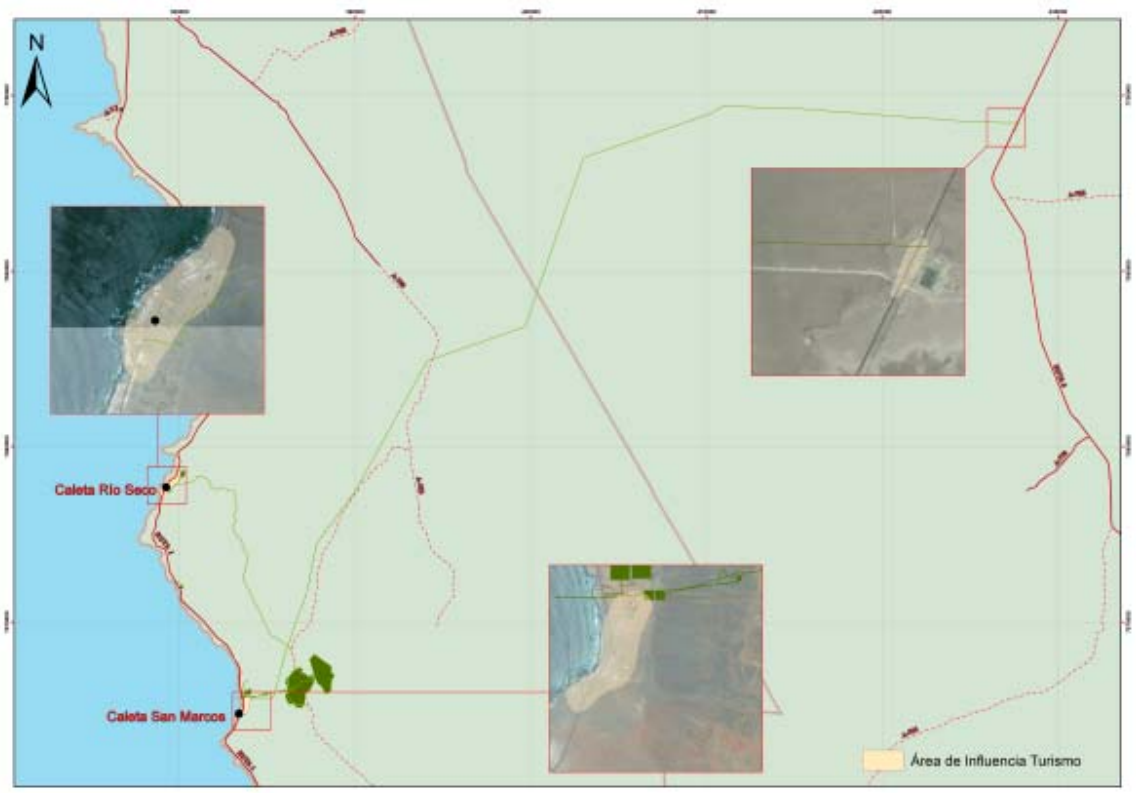
Affectation of Tourist attractions Local, such as Caleta San Marcos And Caleta Rio Seco By proximity to the project.

Area of Influence

The area of influence of the tourism component is estimated in relation to the presence of populated centers near the area where the project will be installed in which there are tourist services and/or infrastructure of tourist support added to the presence of attractive Tourist and routes used for tourist purposes.

In this case the main populated centers Caleta Rio Seco and Caleta San Marcos correspond to others to the main tourist attractions of the area, while the main routes correspond to Route 1 and Route 5

Figure 2-18: Area of influence Tourism



Source: Own Elaboration.

Justification of the area of influence

The delimitation of the area of influence responds to criteria considered in the landscape component.

2.5.8 Use Territory

2.5.8.1 Use of the land

Causal relationship

The project area, according to the current planning instruments, is in rural areas, so the project will probably require change of land use.

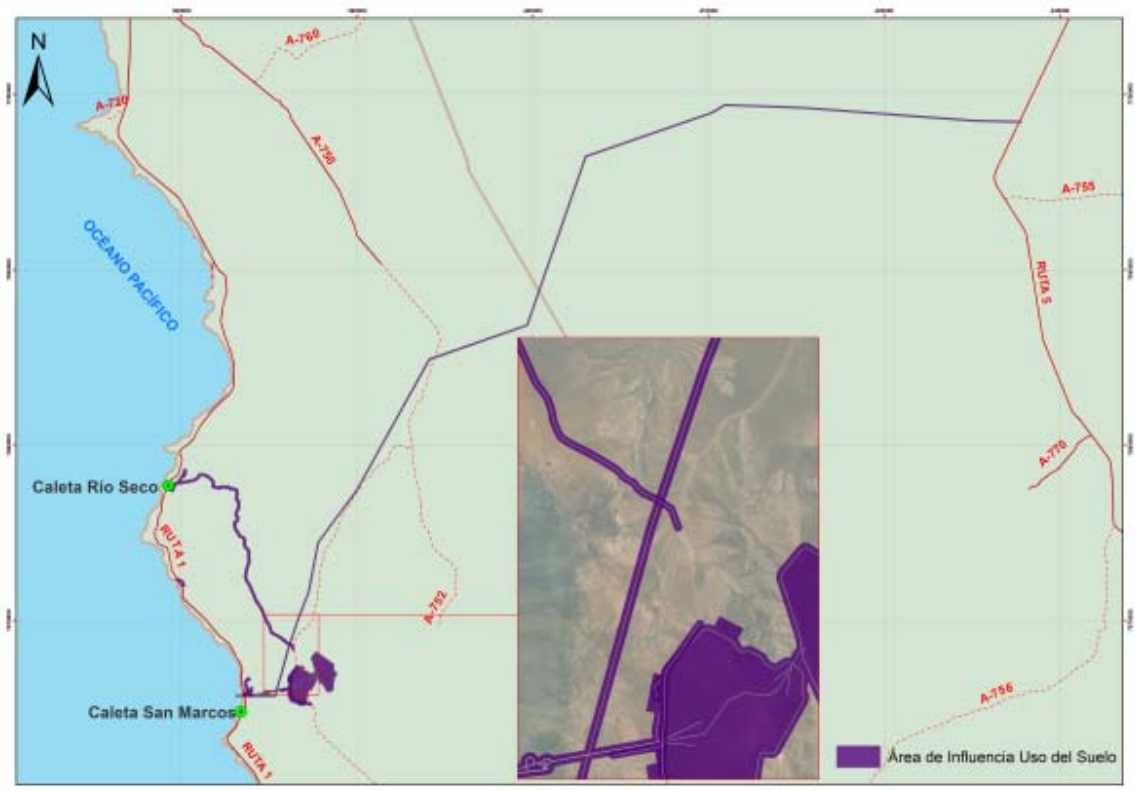
Potential effects

Alteration of the use of Soil In the Installing the Project.

Area of Influence

The area of influence for the Ground component corresponds to Area of 50 meters around the works of the project.

Figure 2-19: Area of influence land use



Source: Own Elaboration.

Justification of the area of influence

The Land occupancy It will occur on the grounds on which the works are to be located.

2.5.8.2 Economic and productive Activities

Causal relationship

Near the area of the project is located the Caleta San Marcos, dedicated to the primary exploitation of marine resources. This cove also has two AMERB for the production and extraction of molluscs and algae. (see Figure 2-12)

Potential effects

Alteration of the Use of the Territory by the Installation of a new economic activity.

Area of Influence

Nearby locations that correspond to Caleta San Marcos and, to a lesser extent, To Caleta Rio Seco.

Figure 2-20: Area of influence activities EConomic and QRoductivas

Caleta Rio Seco

Caleta San Marcos

Source: Own Elaboration.

Justification of the area of influence

The project is located in the vicinity of Caleta San Marcos where activities of primary exploitation of marine resources are carried out.

2.5.8.3 Infrastructure and Equipment

Causal relationship

The project will make use of the existing road network and some new specific sections For the project for the transfer of workers, machinery and materials.

The access road will connect the route CH-1, At the height of the river Seco Creek, Will be spliced with a new stretch of road that will lead to the installation of operations and dump of the sector and raise the coastal cliff to join Route A-750, in the section where it is a dirt road. The projected path is approximately 15,5 K:iM, of which 5 K:iM will be on new road and the rest will be a Improving a footprint andXisting.

Potential effects

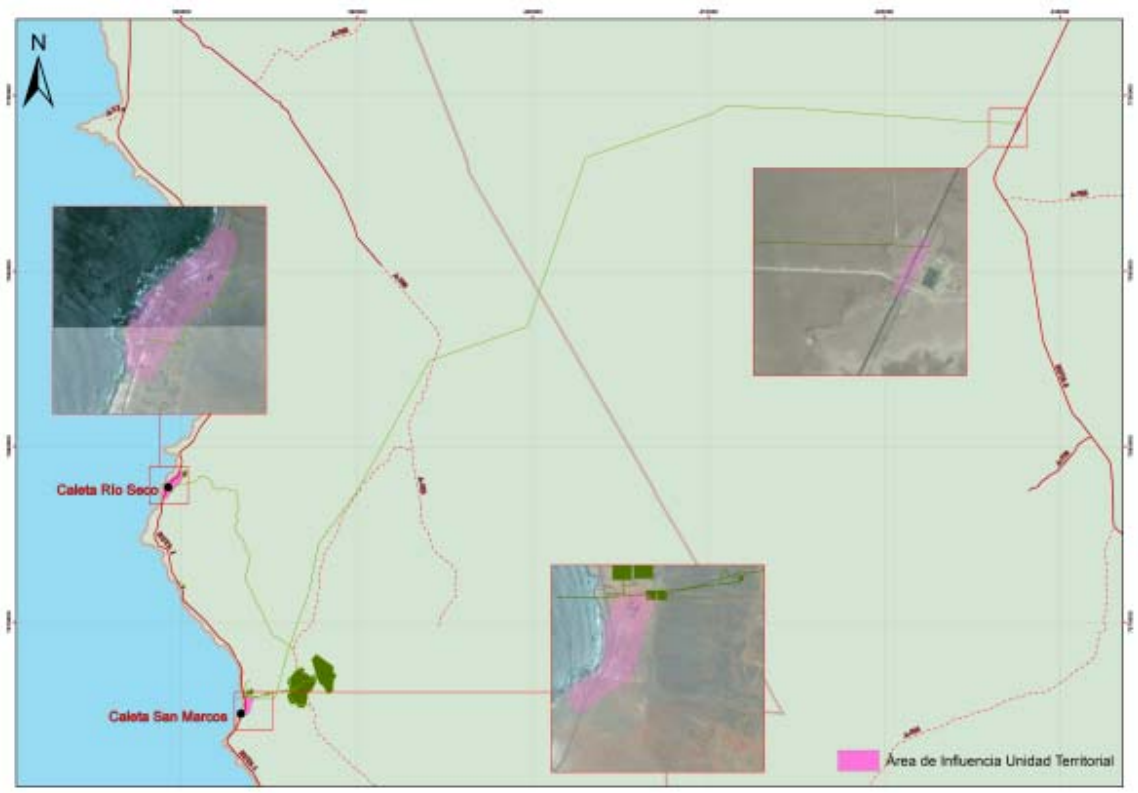
Increase Temporary of the road flow.

Area of Influence

The area of influence is established in relation to those sections or sectors that will be intercepted by the project and/or may be affected by their vehicular flows.

In this case the area of influence of the project is defined by the localities of San Marcos and Río Seco, the electric substation Lagunas and routes 5 and 1.

Figure 2-21: Area of influence infrastructure and equipment



Source: Own Elaboration.

Justification of the area of influence

The project considers the use of existing pathways and incorporates new pathways in the area.

2.5.9 Human environment

Causal relationship

The project will be located close to human settlements, such as Caleta Rio Seco and Caleta San Marcos. On the other hand, there are sectors adjacent to the areas of development of physical works of the project (line of high tension) that do not present room of people but that could be used by human groups for the development of economic activities in a use Extensive space, such as goat farming.

The project also considers the habilitation and use of a project workers ' camp.

Potential effects

affecting your activities and their local culture.

Area of Influence And Justification

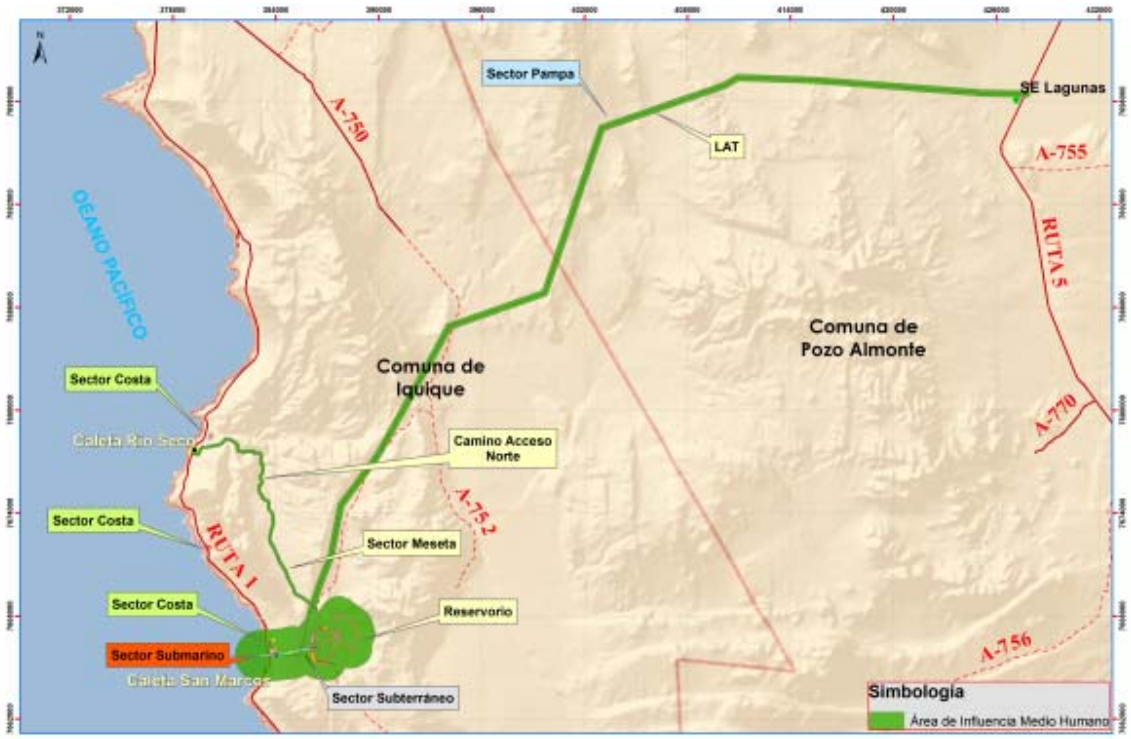
For A Better understanding, the area of influence of the human environment for each sector of the project, is presented in detail in the following table:

Table 2-4. Area of influence and justification. Human environment

AI Sector	Inclusion criterion	Human groups	Works	Buffer
Pampa and Meseta Sectors	Sectors adjacent to Works and activities Of the project, and development of economic and infrastructure activities.	The presence of human groups was not identified; Yes of mining related activities, specifically the transport of trucks, and the improvement of the route A-750 by the MOP.	Reservoir	1 kilometer to flood limits
			New Road	100 meters on each side of the road
			Lat	200 meters on each side of the line
Sector Costa	Human settlements close to works of the project. Human settlements close to places defined for the accommodation of workers and with the presence of basic services or infrastructure.	Caleta that gathers a large number of divers shellfish, fishmongers and orilleros that are dedicated to the extraction and drying of fleeing. On the other hand, in the areas of free access near the cove and in the AMERB, we can see the transit of boats working in these areas.	New Road	100 meters on each side of the road
			Accommodation and provision of basic services for the camp	Caleta de San Marcos and Río Seco
			Construction of works for the operation of the project (tasks, chops, sluices, pipes, room of Máquinas9	1.5 kilometres from the limit of the works

Source: Own Elaboration.

Figure 2-22: The area of human influence



Source: Own Elaboration.