

**RESPONSE TO THE REQUEST OF ADDITIONAL INFORMATION  
OFFICIAL COMMUNICATION SGPA/03-1483/13**

**1. RELATIONSHIP WITH APPLICABLE REGULATIONS**

**1.1. EXTENDED**

- ***THE PETITIONER MUST PROVE THAT THE PROJECT CONFORMS TO AND COMPLIES WITH THE STRATEGIC PROGRAM FOR SUSTAINABLE URBAN DEVELOPMENT FOR TAMAULIPAS, THE GENERAL LAW ON CLIMATE CHANGE AND THE RENEWABLE ENERGY DEVELOPMENT AND FINANCING FOR ENERGY TRANSITION LAW.***

In response to this requirement, next we describe how the Project will comply with: (i) the Strategic Program for Sustainable Urban Development for Tamaulipas, (ii) General Law on Climate Change and (iii) Renewable Energy Development and Financing for Energy Transition Law.

**(i) Strategic Program for Sustainable Urban Development for Tamaulipas (PEDUST)**

The Strategic Program for Sustainable Urban Development for Tamaulipas (PEDUST) was approved by governmental decree published in the Official Gazette of the State of Tamaulipas, on the 27th day of November, 2008.

The PEDUST was prepared based on section 18 of the Law for Urban Development of the State of Tamaulipas and consists of seven chapters: I. General objectives; II. Recitals and grounds; III. Strategic diagnose; IV. Forecast 2015-2030; V. Objective image and goals; VI. General strategy, policies, programs and triggering projects and; VII. Implementation mechanisms.

For these, it is important to make an emphasis on the general objectives of chapter I of the Project listed as follows:

- *To harmonize urban development and economic development according to the principles of sustainability and equity.* The development of Tres Mesas Wind Farm ("PETM") represents a clear example of how, by using the wind resource, we may generate energy fostering economic growth and taking care of the environment.
- *To prepare plans and projects for future investment in infrastructure and equipment to promote the state at a national and international level.* The investment to be made in the municipalities of Llera de Canales and Casas and placing the state of Tamaulipas in an international scenario as a producer of renewable energy is the consequence, among other factors, of the support shown on this type of projects by the authorities from the three government levels.

- *To foster the improvement of life quality within the cities in order to boost social cohesion and the population's ties.* The execution of a Project of this nature will be an additional source to foster local economy with the revenues obtained during construction and operation of the PETM which will benefit the community.

In turn, Chapter III of Strategic Diagnose is presented in number 3.1.3.5. Change of economic development model and loss of competitiveness for the *state has lost dynamism in the national economy share, especially for its position with regards to other bordering states.* In this regard, the fact that companies like Frontera Renovable ("FR") consider Tamaulipas as an alternative to develop their projects will somehow help, at the petitioner's discretion, to revert this deceleration.

In turn, in paragraph 3.1.3.8. Environmental issue, it is established that the main environmental issues emerge from the use of hydrocarbons, wrong disposal of waste in illegal landfills, strong pressure on water resources and generation of atmospheric emissions. On these elements, it is worth emphasizing that a project like PETM is an alternative that generates considerably less impact on the environment, requires minimum amounts of water for operation, displaces greenhouse gas emissions and has a Waste Management Plan for final waste to be placed at authorized sites. To sum up, all these measures contribute to fight part of the environmental issues referred to in the PEDUST.

In chapter V called Objective Image and Goals, there is a strong relationship with the Project regarding the short-term goal which consists in "*reverting the loss of population in medium cities and rural concentrations with triggering projects*", since within the objectives established by FR there is the use of local labor. Therefore, the fact that the inhabitants of the ejidos and communities of Llera and Casas have this option will make many of them decide not to leave their communities.

Now, in Chapter VI, it is worth mentioning especially Section II. 1 called **Regional Integration Guidelines**, which in its letter a) **Northeast Integration with Monterrey and Texas** states that the proximity between these two geographic points has generated integration in several fields, among which there is a possibility of recurring to R&D on environmental technology and alternative energy (wind energy).

From this premise, it is likely to conclude that the PETM brings to reality the vision established in the PEDUST and as indicated therein the development of this type of technology constitutes a high value-added activity that will prevail on global markets in the future.

Likewise, number III.2.2 **Sub-program of new market niches** of the section of Politics for Territorial regulation, the PEDUST sets the goal *to attract new investments which, in the medium and long term, will enable more balanced participation in the generation of added value within the northeast region and creation of new functional economic cores.* As a result of the latter, within the line of action in the short term we aim *to establish contact with national and international institutions for the development of alternative energy (wind energy and biofuel),* thus emphasizing the harmony of PETM with the development approach of Tamaulipas.

Therefore, it is worth highlighting that PETM will manage to link the conservation and respect of the environment and productivity and competitiveness, since as mentioned in the introduction of PEDUST, *taking care of the biophysical environment must not hinder the development of cities, for it eliminates development and welfare opportunities for the population.*

In this regard, it must be mentioned that PEDUST is making an **environmental sensitivity analysis** indicating that *there must be a previously assessed time and space to allow compatibility between the activities to be developed and the surrounding environment in such a way that the development of said activities is not stopped*. From the latter, it can be deduced that the submittal of the Environmental Impact Statement of the Project object matter hereof demonstrates the interest of PETM so that all its actions conform to the region's sustainable development.

Due to the aforementioned, it is hereby stated that PETM aims to make a contribution to sustainable development of the region and the country, since, as stated in this section, it is fully compatible with the strategies, goals, policies and programs of action of the PEDUST.

**(ii) General Law on Climate Change**

The General Law on Climate Change ("**LGCC**") published in the Federal Official Gazette ("**DOF**") on the 6th day of June, 2012, sets forth in its section 2, fraction VII the following objective: *To promote transition towards a sustainable, competitive economy of low-carbon emissions*. It can be deduced that one of the ways to move towards an economy meeting these requirements is the development of Renewable Energy Projects such as that submitted to assessment by FR.

In this regard, next we present the relationship of PETM with the main provisions of LGCC developing this objective.

Legal Provisions	Relationship with the Project
<p><b>Section 33.</b> The objectives of the public policies for mitigation are: [...] <b>III.</b> To gradually promote the substitution of use and consumption of fossil fuels by renewable sources of energy, as well as the generation of electricity through the use of renewable sources of energy; <b>IV.</b> To promote energy efficiency practices, development and use of renewable sources of energy and transfer and development of low-carbon technologies, particularly in real estate property and personal property of agencies and entities of the centralized and state-owned Federal Public Administration, of federal and municipal entities;</p>	<p>PETM is a Project for renewable energy through clean technology that will contribute to the fulfillment of the public policies of mitigation set forth in this provision.</p> <p>Likewise, it must be emphasized that the decision of investing in the state of Tamaulipas has been, among other factors, a consequence of the promotion made by federal and state governments.</p>

Legal Provisions	Relationship with the Project
<p><b>Section 34.</b> In order to reduce emissions, the agencies and entities of the Federal Public Administration, the Federal and Municipal Entities, within their scope of competence, will promote the design and preparation or policies and actions of mitigation related to the corresponding sectors considering the following provisions:</p> <p>I. Reduction of emissions in generation and use of energy:</p> <p>a) To foster practices of energy efficiency and promote the use of renewable sources of energy; as well as the transfer of low-carbon emission technology, as per the Law for Sustainable Use of Energy and Renewable Energy Development and Financing for Energy Transition Law. [...]</p> <p>e) To boost the development of renewable energy to generate electricity, as per the legislation applicable on this matter.</p>	<p>When building the infrastructure for development of wind energy in the region, the PETM will collaborate with the authorities from the three government levels which have been given the assignment to reduce greenhouse gas emissions, thus complying with this legal provision.</p>
<p><b>Section 93.</b> For purposes of granting tax incentives established as per the Federal Income Law, the activities related to the following are deemed priority: [...]</p> <p>II. Research and incorporation of energy efficiency systems; and development of renewable energy and low-carbon emission technologies;</p>	<p>As a result of this decree, the Income Tax Law sets forth tax incentives for the depreciation of assets, which have been taken into consideration by the Project to make the decision on investing.</p>
<p><b>Section 102.</b> In terms of climate change mitigation, the assessment will be performed regarding the following objectives: [...]</p> <p>II. To reduce greenhouse gas and compounds emissions, and improve the greenhouse gas sinks through promoting sustainable production and consumption patterns in fundamental public, social and private sectors in areas such as: generation and consumption of energy, transportation and comprehensive management of waste;</p> <p>III. To gradually substitute the use and consumption of fossil fuels by renewable sources of energy;</p>	<p>It is estimated that the Project in its full development might generate around 500 MW, with which almost 900,000 tons of carbon dioxide could be displaced; said carbon dioxide being the main pollutant of global warming.<sup>1</sup></p> <p>This action represents compliance with the objective of reducing emissions and transition towards renewable sources of energy highlighted in this section of the LGCC.</p>

<sup>1</sup> [www.awea.org](http://www.awea.org).

Legal Provisions	Relationship with the Project
<p><b>Second Section.</b> The country assumes the indicative objective or aspirational goal of reducing thirty percent of emissions for 2020 with respect to the base line; as well as fifty percent of reduction of emissions for 2050 with respect to the emissions from the year 2000. These goals may be achieved if an international regime is established providing financial and technological support mechanisms from developed countries towards developing countries, among which one can find the United Mexican States. These goals will be reviewed upon publication of the next National Strategy.</p>	<p>The performance of the PETM is one of the many Projects to be carried out in the country from now to 2020 and 2050 so that Mexico can achieve the aspirational goal set in this legal provision.</p>
<p><b>Third Section.</b> Agencies and entities of the centralized and state-owned Federal Public Administration, Federal Entities and Municipalities must implement the necessary Mitigation and Adaptation actions, according to their attributions and competencies to achieve the following aspirational goals and indicative terms: [...] II. Mitigation: [...] e) The Department of Energy in coordination with the Federal Electricity Commission and the Energy Regulatory Commission, will promote that the generation of energy coming from clean energy sources reaches at least 35 percent for 2024.</p>	<p>In accordance with the content of the LGCC, Projects like the one presented herein by FR are part of the strategies established by the Mexican state to confront the effects of climate change.</p> <p>Therefore, the authorization issued by the CRE for PETM shall be used to document that all efforts made in our country to generate at least 35% of energy from renewable energy.</p>

**Renewable Energy Development and Financing for Energy Transition Law**

The Renewable Energy Development and Financing for Energy Transition Law ("LAERFTE") was published in the Federal Official Gazette on the 28th day of November, 2008 in order to *regulate the use of renewable energy sources and clean technologies to generate electricity with purposes other than providing the public service of power.*

Based on the aforementioned, the following table shows the most relevant sections regarding the PETM Project:

Legal Provisions	Relationship with the Project
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Legal Provisions	Relationship with the Project
<p><b>Section 16.-</b> Suppliers shall execute long-term agreements with Generators using renewable energy who have a permit from the Commission, as per the guidelines issued by said Commission.</p>	<p>FR shall comply with the provisions of the Energy Regulatory Commission (CRE) upon execution of the agreements mentioned herein.</p>
<p><b>Section 18.-</b> The National Electrical System shall receive the electricity produced with renewable energy in excess from self-supply projects or by electricity cogeneration projects, as per section 36 bis of the Law of Public Service of Power and as per the provisioned herein. Generators shall be subject to the conditions set forth by the Commission for services of conduction, transformation and delivery of electric energy, as per the Energy Regulatory Commission Law.</p>	<p>The PETM shall be connected to the National Electrical System for distribution of energy produced in its self-supply scheme.</p> <p>Likewise, it is important to mention that the core objective is not to generate surplus, but should this happen it will be channeled as per the conditions established by the Commission.</p>
<p><b>Section 21.-</b> Projects for generation of electricity from renewable energy with capacity above 2.5 Megawatts, shall aim to:</p> <p><b>I.</b> Assure participation of local and regional communities, through meetings and public consultation called by municipal, ejido or common authorities; during such meetings the participation of projects in the social development of communities shall be agreed;</p> <p><b>II.</b> As per each agreement, to pay leasing to owners of the land or site taken by the renewable energy project; the regularity of payments may be agreed with the interested parties, but under no circumstance may it be less than twice a year;</p> <p><b>III.</b> To promote social development within the community where the renewable energy generation projects are carried out, as per the best international practices and comply with the applicable standards in terms of sustainable rural development, environmental protection and agricultural rights.</p>	<p>With regard to the content of this legal standard, FR has held several meetings and sessions with the inhabitants of the Municipalities of Casas and Llera in order to present the Project to them and answer to their concerns.</p> <p>Likewise, the agreements executed with land owners are confidential, therefore it is not deemed appropriate to refer to the figures or conditions thereof, but in any case considerations are better than the basis set forth herein.</p> <p>The Project has been working for some years and will continue in a series of projects and alternatives which may support development in the community, for it is aware of the intrinsic good nature of said actions, and the decree established herein is also reflected.</p>

**Regulations for the Renewable Energy Development and Financing for Energy Transition Law**

The regulations for the Renewable Energy Development and Financing for Energy Transition Law ("RLAERFTE") were published in the DOF last September 2, 2009.

From the group of legal provisions contained herein, the following table presents those closely related to the Project.

Legal Provisions	Relationship with the Project
<p><b>Section 4.-</b> The Department shall promote the use of different energy sources for Renewable Energy Generation to be undertaken as per the following criteria:</p> <ul style="list-style-type: none"> <li>I. Strengthening of the country's energy safety, by diversifying energy sources for generation of electrical power;</li> <li>II. Decrease in the variation of costs of electric energy caused due to volatility in prices of fossil fuels;</li> <li>III. Reduction of operating costs upon the integration of generation in medium-tension grids;</li> <li>IV. Fostering of social development in communities where projects are used or carried out;</li> <li>V. Social participation in the corresponding projects;</li> <li>VI. Boost in regional, industrial and technological development of the country, as well as job creation;</li> <li>VII. Reduction of environmental impacts and public health issues caused by the use of fossil fuels;</li> <li>VIII. Reduction of greenhouse gas emissions, in generation of electricity, through the use of Renewable Energy and Efficient Cogeneration; and</li> <li>IX. Use and development of biomass coming from agricultural, livestock, forestry, aquaculture, alga and fishing activities, through clean technology.</li> </ul> <p>The Department shall consider criteria set forth in this section to design and perform the energy policy, and to determine Renewable energy in terms of section 3o., fraction II, letter g) of the Law.</p>	<p>The PETM, with the development and use of wind energy, shall contribute to comply with these criteria to crystallize the benefits established therein.</p> <p>According to this premise, it must be highlighted that said use shall always be subject to the guidelines set by different authorities responsible for these processes.</p> <p>Likewise, it shall be mentioned that the project, in a participative manner and in co-design with the communities of Llera and Casas, will be involved in a series of activities in different sectors to strengthen their development.</p> <p>Even if fossil fuels will not be used, as indicated in the EIS-S, the petitioner has the commitment to minimize the environmental impact of its activity.</p> <p>The Project, as it has been said before, in its optimum development may displace up to 900,000 tons of greenhouse gas.</p>
<p><b>Section 29.-</b> The Commission shall establish the methodologies to compute considerations for the services provided by the Supplier and renewable generators or efficient cogenerators, for which it shall consider the efficient costs related to the provision of said services.</p>	<p>FR shall follow at all times the methodologies established by the Commission and shall act in accordance with them if applicable.</p>

Legal Provisions	Relationship with the Project
<p><b>Section 41.-</b> The Commission shall publish in the Federal Official Gazette the guidelines to which the agreement models will be subject and the origin rules governing the Supplier's acquisition of electric electric energy produced by renewable generators and by efficient cogenerators outside the calling for tender.</p>	<p>PETM shall comply with the guidelines and methodologies set forth by the Energy Regulatory Commission for the agreement models, energy exchange procedures; rules of interconnection to the National Electrical System.</p>
<p><b>Section 42.-</b> The delivery of electric energy to the National Electrical System by renewable generators and efficient cogenerators outside the calling for tender may be carried out with the relevant permits granted by the Commission, as per the Law of Public Service of Power and its regulations, if deemed admissible.</p>	<p>The Project is not considering deliveries of this nature to the National Electrical System. However, if necessary, we will act in strict compliance with the procedure stated by the regulation.</p>

- **CLARIFY, RECTIFY OR EXTEND WHAT YOU HAVE STATED WITH REGARDS TO PAYMENT OF GOVERNMENT CHARGES, IN RELATION TO THE PROVISIONED IN SECTION 194-H OF THE FEDERAL GOVERNMENT CHARGES LAW.**
  - **YES, FOR THE PROJECT IT WAS NECESSARY TO MAKE THE ANALYSIS AND COMPARISON OF DIFFERENT OPTIONS IN TERMS OF MANAGEMENT, TREATMENT AND DISPOSAL OF SPECIAL AND/OR HAZARDOUS WASTE.**

Hazardous waste generated during the stages of site preparation and construction of Project, as referred to in the Special Environmental Impact Statement, ("EIS-S") shall consist mainly in our own waste from any civil work such as: oils, solvents and hydrocarbons consumed, containers, tows and cloths soaked in oil, paint cans and soldering waste.

Special handling waste will be basically waste from construction, that is, debris, rod and wood.

Based on the aforementioned, the petitioner and the undersigned responsible for the environmental study determined that it was not necessary to perform such analysis or comparison of different options for management, treatment and disposal of the same, for the management will be performed according to the ordinary procedures established in the General Law for Prevention and Comprehensive Management of Waste, which consists in storing them temporarily at the site in special places to be then transported and disposed of at authorized final disposal sites

Likewise, during the stage of operation of the wind farm, only wasted oil and cloths soaked in oil derived from maintenance activities will be generated, which in accordance with the procedure described above will be stored temporarily, transported and disposed of at the sites for final disposition registered before State and Federal authorities.

In addition and in order to assure due management and sorting of hazardous waste, a Comprehensive Management Plan will be implemented so as to assure that the management and handling of waste, both hazardous and non-hazardous, are undertaken in a sanitary and environmentally-appropriate manner, in

accordance with the principles of minimization, sorting and protection of public health, under the parameters established in the Mexican Official Standards on the matter.

Said plan contemplates mainly to limit the use of products generating hazardous waste; to carry out the sorting of the same; to place appropriate signs on them; to store them temporarily at sites separate from the work areas with their retaining walls, paved floors and trays or dams to contain possible leaks; and finally to transport and dispose of them at duly authorized sites by means of companies entitled to do so.

To summarize, given the characteristic of waste generated due to the type of Project, the PETM will manage, transport and dispose of it as per the general rules of the Law and its Regulations, without the need of analysis and comparison of additional or special alternatives.

- ***YES, THE PROJECT INCLUDES ONE OF THE ACTIVITIES LISTED IN SECTION 5° OF THE REGULATIONS OF THE GENERAL LAW OF ECOLOGICAL BALANCE AND ENVIRONMENTAL PROTECTION IN TERMS OF ENVIRONMENTAL IMPACT ASSESSMENT (REIA), OR A GROUP OF THE AFOREMENTIONED ACTIVITIES.***

The Project clarifies and rectifies that in response to the provisioned in the Law, its performance shall require carrying out two activities listed in section 5° of the General Law of Ecological Balance and Environmental Protection in terms of Environmental Impact Assessment ("REIA"), hereby incorporated by reference:

*"Section 5o.- Anyone willing to carry out any of the following works or activities shall previously request authorization from the Department in terms of environmental impact:*

*[...]*

*K) ELECTRIC POWER INDUSTRY:*

***I. Construction of nuclear-electric, hydroelectric, carbon electric, geothermal, wind or thermal power stations, conventional, combined-cycle or turbogas unit power stations, except for generation stations with capacity below or equal half MW, used for backup in residential units, offices and housing;***

*[...]*

*O) CHANGES IN LAND USE OF FOREST LANDS, AND IN RAIN-FORESTS AND ARID AREAS:*

*[...]*

***III. Other changes in the land use, in lands or areas with forestry land use, except for the modification of agricultural or livestock land into forestry, agroforestry or forest grazing, through the use of native species.***

*(Emphasis added)*

From reading the legal provisions, it can be deduced that despite the fact that the construction of a wind farm might involve certain activities inherent to its development such as removal of forest vegetation, it is true that the Law distinguishes them as two separate sections. Therefore, for purposes of section 194-H of the Federal Government Charges Law, the PETM must be considered a group of activities complying with the provisioned in the REIA.

Therefore, it is herein considered again the addition from questionnaire (**Appendix One**) to determine the payment of government charges and as a result a high degree with 24 points was obtained. Consequently, we hereby present (**Appendix Two**) the payment of government charges for the amount of \$78,512

(Seventy-eight thousand five hundred twelve pesos 00/100 National Currency), requesting the refund of the \$52,340.86 (Fifty-two thousand three hundred forty pesos 86/100 National Currency) originally paid.

**1.2. SECTION 27, SIXTH PARAGRAPH OF THE POLITICAL CONSTITUTION OF THE UNITED MEXICAN STATES**

- **TO CLARIFY, RECTIFY OR EXTEND THE CONTENT OF THE ENVIRONMENTAL IMPACT STATEMENT, MAKING THE RELEVANT CONNECTION OF THE PROJECT WITH THE FINAL PART OF SECTION 27, SIXTH PARAGRAPH OF THE POLITICAL CONSTITUTION OF THE UNITED MEXICAN STATES, STATING THAT ONLY THE NATION MAY USE NATURAL RESOURCES**

With regard to this statement, first we clarify that one of FR's main basis in the development of its projects is and will always be strict compliance with the law and even the adoption of best practices and standards of the industry above it, such as those established by the *International Finance Corporation* of the World Bank and the principles of Ecuador. Hence, it is necessary to state that it has never intended nor will intend to violate the Political Constitution of the United Mexican States and the laws comprising the National Legal System.

Having set forth the aforementioned, it is hereby rectified and clarified that due to an involuntary mistake and without the correct application of the term it was stated in pages II.6 and II.43 of the EIS-S of the Project, that the electric energy generated by the Project would be for SALE, whereas the correct and true statement is that it will be for self-supply under the scheme regulated in section 36 of the Law of Public Service of Power ("LSPEE") in full force and effect in our country. Next, the provision referred to is hereby incorporated by reference:

***"SECTION 36.-** The Department of Energy, considering the criteria and guidelines of the national energy policy and the opinion of the Federal Electricity Commission, will grant permits for self-supply, cogenerations, independent production, small production or import or export of electric energy, as the case may be, under the conditions stated for each case:*

*I. For self-supply of electric energy destined to satisfy the needs of individuals or corporations, provided that it is not an inconvenience for the country, at discretion of the Department of Energy. In order to grant the permit it should comply with the following:*

*a) In the event of several applicants for purposes of self-supply from a power station, they shall be co-owners thereof or constitute for that purpose a partnership which objective is the generation of electric energy to satisfy all self-supply needs of its partners. The concessionaire may not deliver electric energy to third party individuals or corporations which are not a partner thereof upon approval of the original project including extension plans, except if the assignment of rights or modification of said plans is authorized; and [...]"*

*(Emphasis added)*

In accordance with the statement of this legal provision, FR appeared before the competent authority in order to obtain the self-supply permit, which is in process and shall be subject to compliance with the essential requirements set forth by the legislation for its granting.

In addition, it is worth mentioning that in response to section 37, letter a) of the LSPEE, in case the FR acquires the capacity of concessionaire, the electric energy generated by the PETM shall be delivered to the National Electrical System operated by the Federal Electricity Commission, hence it is unlikely that any user may benefit from receiving electric energy coming from a self-supply project if they are not part of it and don't have said power before the authority.

In this regard, so long as they don't obtain all permits from different federal, state and municipal authorities necessary for the construction of their Project, activities will not begin, nor will they be carried out other than the provisioned, since the only purpose due to ethics and safety of the investment is to act as per the law.

**1.3. MODALITY OF THE ENVIRONMENTAL IMPACT STATEMENT**

- **THE PETITIONER SHALL PROVE HOW THE PROJECT ADAPTS OR NOT TO SECTION 11 OF THE REGULATIONS OF THE GENERAL LAW OF ECOLOGICAL BALANCE AND ENVIRONMENTAL PROTECTION ON ENVIRONMENTAL IMPACT MATTER AND NOT ONLY STATE THAT IT DOES NOT FALL WITHIN THE ASSUMPTIONS OF THE REGULATORY SECTION REFERRED TO AND THEREFORE HAS DECIDED TO CHOSE THE SPECIAL MODALITY.**

With the purpose of providing a comprehensive and complete response to this comment, the following table presents the assumptions on which section 11 of the REIA considers that environmental impact statements will be presented in the regional modality and how PETM does not conform to it.

The latter, because the last paragraph of said legal precept sets forth that when falling within the scope of this situation, the admissible action is to present a special modality as concluded by FR.

Assumptions of section 11 of the REIA to submit an Environmental Impact Statement, regional modality.	Reasons why the PETM determined that said assumptions are not applicable.
<p>I. Industrial and water stations, water farms of more than 500 hectares, roads and railroads, projects for generation of nuclear energy, dams, and, in general, projects modifying water basins;</p>	<p>First, it is stated that the PETM is not an industrial or water station of a water farm of more than 500 hectares, nor a road or railroad. It isn't a project for generation of nuclear energy or dam.</p> <p>Likewise, it was determined that upon its execution no water basin where it is located will be altered putting the structure and functioning of ecosystems at risk, considering the identification and quantification of impacts caused during the stages of site preparation, construction and operation to carry out the Project.</p> <p>The statement in the previous paragraph is based on the fact that most impacts identified, although classified as low-impact, occur mainly during the preparation and construction stages. Therefore, upon conclusion of said stages the impacts may be assimilated by the environment in a natural manner or through activities focused on restoration, recovery and/or rehabilitation of main environmental factors such as land, flora, fauna and landscape, comprised within several Programs and Subprograms composing the Environmental Management Program of the Project.</p>
<p>II. A group of works or activities included in a partial plan or program for urban development or ecological zoning subject to consideration by the Department as per the terms foreseen in section 22 hereof;</p>	<p>The PETM is not included within a partial plan or program for urban development or ecological zoning submitted to this DEPARTMENT, all the more since section 22 of the REIA deals with the rules for suspension and expiration of the procedure.</p>
<p>III. A group of projects of works and activities aiming to be carried out within a certain</p>	<p>The wind farm subject to assessment is one single Project, not a group as it may happen in a master plan for tourist development, or else, in an industrial</p>

**TRES MESAS WIND FARM**

Assumptions of section 11 of the REIA to submit an Environmental Impact Statement, regional modality.	Reasons why the PETM determined that said assumptions are not applicable.
ecological region, and	station, therefore this assumption is not applicable.
<p>IV. Projects aimed to be developed at sites, where due to the interaction with different regional environmental components, cumulative, synergy or residual impacts, foreseeing causes of destruction, isolation or fragmentation of ecosystems.</p>	<p>The PETM as any electric energy generation anthropogenic infrastructure will generate adverse impacts on the environment, for it is not related to the natural environment. However, these are considered to be mostly low-intensity adverse impacts. We identified a total of 66 impacts, out of which 48 are adverse and 18 are beneficial.</p> <p>Out of the 48 adverse impacts identified, 45 are low and 3 are moderate. Moderate impacts are related to modification of landscape, loss of vegetable coverage and modification of land use.</p> <p>It is worth mentioning that the loss of vegetation and modification of land use is limited exclusively to zones occupied by wind turbines, access roads and support infrastructure. In accordance with the EIS, it is estimated that the project will cover only 3.01% of the polygonal, of which 1.69% are permanent works and 1.32% are temporary works.</p> <p>It is noted that after the construction of the wind farm, a Restoration and Land Preservation Program will be implemented, contemplating land restoration activities for roads used on a provisional basis during previous stages and temporarily affected areas which may be rehabilitated. The main purpose of these activities is to recover the land and grow natural vegetation, to make the site return to its initial conditions.</p> <p>Considering the aforementioned, it is possible to conclude that even if the Project development may cause some adverse impacts, the application of preventive and corrective measures will enable us not to cause any other impact which due to its features and nature may provoke alterations in the ecosystems affecting the continuity of natural processes currently happening within the project area. Hence, it is estimated that the project development will not cause destruction, isolation or fragmentation of ecosystems, nor will it jeopardize the structure and features of the ecosystems described in the environmental system.</p> <p>With regards to the impact during the operation stage, it refers essentially to risk of mortality of birds and bats due to collision with turbines. The results of monitoring studies included in the EIS and attached hereto as part of the additional information, demonstrate that species registered in the zone are mainly resident and terrestrial species with low stratum habits, which do not flight above the canopy and migratory species flying outside the mesas or at flying heights above 200 meters, often between 700 and 1200 meters. In general, we observed that migratory routes generally follow the coastline located more than 150 km east.</p> <p>The latter allows us to conclude that the project, even if it might cause impacts due to risk of collision with wind turbines, these are considered isolated events and migratory routes of species traveling over Tamaulipas, and in particular over the area of the project.</p>

**1.4. RELATIONSHIP WITH AGREEMENT**

- **THE PETITIONER SHALL LINK THE PROJECT TO THE AGREEMENT EXECUTED BETWEEN THE UNITED MEXICAN STATES AND THE UNITED STATES OF AMERICA FOR PROTECTION OF MIGRATORY BIRDS AND CINEGETIC SPECIES, AS WELL AS THE PROTOCOL BETWEEN THE GOVERNMENT OF THE UNITED MEXICAN STATES AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA TO MODIFY THE CONVENTION FOR PROTECTION OF MIGRATORY BIRDS AND CINEGETIC MAMMALS.**

In response to this point, it is noted that along with the Agreement for Protection of Migratory Birds and Cinegetic Mammals and its Protocol, to this date our country has executed a series of International Treaties, of which the following have been identified as those having closer relation to the Project:

International Treaty	Environmental subject or factor considered	Stage or activity of the Project to which the instrument is applied	Relationship between instrument and Project
<p>North American Agreement on Environmental Cooperation (NAACP)                      Art. 2. With respect to their territory, each Party hereto:                      (...) e) shall assess the environmental impacts and (...).</p>	<p>Participation, access to information and care about the environment.</p>	<p>Authorization of the project</p>	<p>This EIS is part of the procedure for the Environmental Impact Assessment in which the petitioner and the authority comply with the guidelines of the NAAEC.</p>
<p>World Summit on Sustainable Development (WSSD)                      (...) III. Modification of unsustainable modalities of consumption and production.                      13. In order to achieve sustainable development it is necessary to introduce fundamental changes in the way of consuming and producing of societies (...).</p>	<p>Sustainable Development</p>	<p>Operation</p>	<p>The Project will generate electricity without the use of fossil fuels and promote the use of sustainable modalities of energy generation and fundamental changes in the way of generating energy in Mexico.</p>
<p>Agreement between the United Mexican States and the United States of America for protection of migratory birds and cinegetic mammals (CPAMyMC)                      Sec. I.- The High Contracting Parties hereby represent that it is fair and convenient to protect migratory birds, no matter their origin, which in their travels live temporarily in the United Mexican States and the Unites States of America, by means of the appropriate procedures (...).                       Sec. II.- The High Contracting Parties agree to set the laws, Regulations and Provisions deemed relevant to meet the need indicated in the previous section, including:                      (...) E).- Interdiction of killing insectivorous migratory birds, except if they damage the agriculture and constitute plagues, (...).</p>	<p>Fauna</p>	<p>Operation</p>	<p>The Project has implemented past-time Monitoring measures with the assistance of the Instituto Tecnológico y de Estudios Superiores de Monterrey. Likewise, since the beginning of the year a Monitoring Program was started with the Instituto de Ecología, A.C. (INECOL) which will last one year and shall continue during the Project development. From the results generated, it is possible to deduce that migratory species have registered flight levels above the height of wind turbines so no interaction is foreseen.                       The Project does not aim to cause the mortality of any type of birds. However, in order to prevent this from happening because of the type of activity, all measures described in chapter VI will be</p>

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International Treaty	Environmental subject or factor considered	Stage or activity of the Project to which the instrument is applied	Relationship between instrument and Project
<p>Protocol between the Government of the United Mexican States and the Government of the United States of America to modify CPAMyMC</p> <p><b>ARTICLE I</b> Article II, letter D) of the Convention shall be replaced by the following: D) Establishing a closed season for wild ducks from March tenth to September the first, except in the State of Alaska, USA, where wild ducks and their eggs may be captured by indigenous inhabitants of the place, provided that the seasons and other regulations implementing no-waste in the capture of wild ducks and their eggs are consistent with the usual and traditional use by indigenous inhabitants and are for their own food and other essential needs.</p> <p><b>ARTICLE II</b> 1. This Protocol shall enter into force on the date the Parties exchange their corresponding ratification instruments. 2. This Protocol shall continue effective for the term of this Convention and shall be considered an integrating part thereof.</p>	Fauna	Operation	<p>implemented.</p> <p>Some families and migratory species named in the agreement are present at the site of the project, including predatory species. However, given the nature of the project, the petitioner will not carry out activities related to rational use such as hunting, capture or trade of specimens, disposal or byproduct, or those for purposes of sports, food, trade and capture of birds, nests or eggs, their sale or their byproducts.</p> <p>Acknowledging that it is fair and convenient to protect migratory birds so that their species do not become extinct, the necessary mitigation actions shall be carried out oriented to monitoring bird populations and decreasing potential collision of birds in the wind farm. Likewise, we will follow the World Bank's recommendation to mitigate potential collisions. In addition, if required, the management of specimens or remaining of birds found will be performed with the corresponding collection permits granted by the authority.</p> <p>The exercise of relationship is performed as the validity of this modification is acknowledged.</p>
<p>Agreement between the United Mexican States and the United States of America on Cooperation for Protection and Improvement of the Environment in the Border Area (CCPyMMAZF)</p> <p>Sec. 2.- The Parties undertake, to the fullest extent possible, to adopt the appropriate measures to prevent, reduce and eliminate sources of pollution in their respective territory which affect the border area of the other.</p> <p>Sec. 4.- For the purposes of this Agreement, it shall be understood that the "border area" refers to the area situated 100 kilometers on either side of the inland and maritime boundaries between the Parties.</p>	Air quality	Operation	<p>The Project development shall allow to contribute to satisfying the energy demand without resorting to the emission of carbon or other greenhouse gas due to burning hydrocarbons.</p> <p>Even if it is not located within the border area, since it is a state with this quality, the Project presents a relation dynamic with the United States of America.</p>
<p>Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (RAMSAR)</p> <p>Art. 1.</p>			

International Treaty	Environmental subject or factor considered	Stage or activity of the Project to which the instrument is applied	Relationship between instrument and Project
<p>1. For purpose of this Convention wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters.</p> <p>2. For purpose of this Convention waterfowl are birds ecologically dependent on wetlands.</p> <p>Art. 4.-</p> <p>1. Each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening.</p> <p>2. Where a Contracting Party in its urgent national interest, deletes or restricts the boundaries of a wetland included in the List, it should as far as possible compensate for any loss of wetland resources, and in particular it should create additional nature reserves for waterfowl and for the protection, either in the same area or elsewhere, of an adequate portion of the original habitat.</p>	Priority Sites	Construction	The Project does not contemplate activities in streams or water bodies which may be considered wetlands. Nor is it in any of the 130 sites listed in the Convention in our country.
	Fauna	Operation	<p>The Project has included the INECOL among its consultants, in order to perform bibliographical and field studies to assess the amounts and patterns of birds and bats flights for a [sic] before the operation of wind turbines and after wind turbine are commissioned.</p> <p>Likewise, it is convenient to highlight that within the area of the Project there are no water bodies considered main interest of waterfowl.</p>
	Priority Sites	Construction	

**2. OTHER ASPECTS**

**2.1. USE OF EXPLOSIVES**

- **THE PETITIONER SHALL INDICATE IF EXPLOSIVES WILL BE USED DURING THE INSTALLATION OF WIND TURBINES, AND THE CORRESPONDING IMPACT FOR PURPOSE OF THE ENVIRONMENTAL IMPACT ASSESSMENT.**

Based on the final arrangement of the wind farm, precise location of each wind turbine and detailed geotechnical and mechanical studies of land, we will determine the need of performing or not blasting of rocks in some points through the use of explosives. For purposes of this Environmental Impact Assessment, we decided to consider the worst case scenario, so in this case we did not include this activity as part of the project. Should it be required, the aim of these blasting activities is to fragment underground rocks in order to carry out the construction of foundations for each wind turbine. The material resulting from the blasting will be crushed and we will try to use it for roads and for filling in the areas where necessary.

Blasting activities shall take place as per the applicable regulations and the best engineering practices, using methods and techniques to minimize the excessive fracture of indicated limits and preserving the rock outside such limits in the best possible conditions. It is likely that we use techniques such as pre-splitting or line drilling. Before starting operations we will prepare a blasting plan including detailed specific information of all procedures, materials and equipment to be used. The blasting plan should describe the procedures and precautions to be taken to protect the staff, existing structures and structures to be built. Said plan should indicate the specific operations for drilling, blasting, removal and towing of rocks. We will have the corresponding permit from SEDENA.

Just as mentioned in page II-34 of the EIS, it is estimated that approximately 30% of the areas where the activities of digging for laying foundations for wind turbines will take place, blasting with explosives will be required. For the first stage it is estimated that approximately 2 tons of explosives will be used. It should be mentioned that this is an estimate, for as mentioned before, this will depend on detailed mechanic studies of the soils at each specific point where each wind turbine will be located.

For purpose of identifying the project's activities having a direct or indirect impact on the environment, the EIS submitted took into account and assessed the impacts caused by the removal and blasting of rocks, which is considering the environmental impacts derived from the use of explosives. However, for purposes of being able to identify on a separate basis the exclusive effects due to the use of explosives, we will present the following impact identification matrix, where we added the use of explosives as an independent activity.

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Phases	Components	Climate/Atmosphere			Land			Water		Groundwater		Flora		Terrestrial		Ecosystems/Landscape		Economic		Services			Negative interactions	Positive interactions		
		Microclimate	Quality	Noise	Structure	Quality	Relief	Surface drainage	Quality	Aquifers recharge	Quality	Vegetable coverage	Species within any category of NDM-059	Habitat	Distribution	Species within any category of NDM-059	Biodiversity	Quality	Change of land use	Jobs	Local and Regional Development	Water			Energy	Waste management and disposal
Construction	Use of explosives		IC 1	IC 2										IC 9											3	
	Rocks removal and blowing up		IC 1	IC 2	IC 3	IC 4	IC 5	IC 6	IC 7					IC 9			IC 10		IC 11	IC 12	IC 13		IC 15	IC 16	11	3
	Excavations, cuts, and filling-in		IC 1	IC 2	IC 3	IC 4	IC 5	IC 6	IC 7					IC 9			IC 10		IC 11	IC 12	IC 13		IC 15	IC 16	11	3
	Compaction and leveling		IC 1	IC 2	IC 3	IC 4	IC 5	IC 6	IC 7	IC 8				IC 9			IC 10		IC 11	IC 12	IC 13		IC 15	IC 16	12	3
	Wind-turbines construction		IC 1	IC 2	IC 3	IC 4		IC 6	IC 7	IC 8				IC 9			IC 10		IC 11	IC 12	IC 13	IC 14	IC 15	IC 16	12	3
	Installation of permanent meteorological towers		IC 1	IC 2	IC 3	IC 4		IC 6	IC 7					IC 9			IC 10		IC 11	IC 12	IC 13	IC 14	IC 15	IC 16	11	3
	Construction of transmission lines and substations		IC 1	IC 2	IC 3	IC 4		IC 6	IC 7	IC 8				IC 9			IC 10		IC 11	IC 12	IC 13	IC 14	IC 15	IC 16	12	3
	Operation of provisional facilities (concrete plant, crusher, offices and warehouses)		IC 1	IC 2				IC 7						IC 9			IC 10		IC 11	IC 12	IC 13	IC 14	IC 15	IC 16	8	3
	Connection tests																						IC 15	IC 16	1	1
	Restoration, cleaning, and signaling		IC 1	IC 2										IC 9					IC 11	IC 12	IC 13		IC 15	IC 16	5	3
	Transportation of consumables, equipment, materials and staff		IC 1	IC 2										IC 9					IC 11	IC 12	IC 13			IC 16	4	3
	Storage of materials and equipment					IC 4		IC 6								IC 10						IC 14			4	0
	<b>Negative interactions</b>			10	10	6	7	3	7	7	3	0	0	0	0	10	0	0	8	0		9	9	9	5	9
<b>Positive interactions</b>																									10	
<b>Total negative interactions</b>			94																							
<b>Total positive interactions</b>			28																							

Adverse Impact  
Beneficial Impact

In the matrix we can see that the impacts caused directly by the use of explosives refer to emissions of dust into the atmosphere, emissions of noise due to detonation of explosives, modification of the land structure at the site where the explosion occurs, and finally modification in the distribution of fauna caused by displacement species because of the noise. Considering that the site conditions are very homogenous, it is estimated that all points where the explosives will be detonated will have similar features, therefore the impacts should be the same, no matter the point where the explosion takes place.

The number of impacts identified because of the construction activity shall remain without changes, that is, the stage of construction where there is use of explosives shall have 16 impacts, out of which 13 are low-adverse impacts and 3 are low-beneficial impacts.

The following matrix shows the hierarchy of impacts related to the use of explosives, and we may see that all impacts identified are considered low-adverse impacts.

TRES MESAS WIND FARM

FACTOR	ACTIVITY	IMPACT DESCRIPTION	INCIDENCE CRITERIA						TOTAL	INCIDENCE CRITERIA	FACTOR QUALITY		MAGNITUDE	IMPACT Magnitude X Incidence Index	CLASSIFICATION	
			SIGN	ACCUMULATIVE	MOMENT	PERSISTENCE	SYNERGY	REVERSIBILITY			MITIGABILITY	With project				Without project
	High beneficial															
	Moderate beneficial															
	Low beneficial															
	Low adverse															
	Moderate adverse															
Air Quality	Use of explosives Land clearing and clearance habilitation and expansion of roads Construction and/or placement of provisional facilities Transportation of consumables, equipment, explosives, materials and staff	IP 2: Emissions of combustion gas and dust	-	2	3	2	1	1	2	11	0.42	0.7	1	0.3	0.13	Low adverse
Noise	Use of explosives habilitation and expansion of roads Land clearing and clearance habilitation and expansion of roads Construction and/or placement of provisional facilities Transportation of consumables, equipment, explosives, materials and staff	IP 3: Noise emissions	-	2	3	1	2	1	2	11	0.42	0.7	1	0.3	0.13	Low adverse
Land structure	Use of explosives Rocks removal and blowing up Excavations, cuts, and filling-in Compaction and leveling Wind-turbines construction Installation of permanent meteorological towers Construction of transmission lines and substations	IC 3: Land erosion due to loss of vegetable coverage	-	2	3	2	2	2	2	13	0.58	0.6	0.8	0.2	0.12	Low adverse
Distribution of fauna species	Use of explosives Rocks removal and blowing up Excavation, cuts, and filling-up Compaction and leveling Wind-turbines construction Installation of permanent meteorological towers Construction of transmission lines and substations Operation of provisional facilities (concrete plant, offices and warehouses) Restoration, cleaning, and signaling Transportation of consumables, equipment, materials and staff	IC 3: Species displacement	-	3	3	2	1	2	2	13	0.58	0.4	0.7	0.3	0.18	Low adverse

**2.2. INFORMATION ON THE METEOROLOGICAL TOWERS EXISTING AT THE SITE**

With regards to the meteorological towers already existing within at the site, the following is stated:

- The tower identified as tres mesas south was installed on the 22nd day of December, 2007 at the property of Mr. Manuel Álvarez Zúñiga.
- The tower identified as tres mesas north was installed on the 21st day of December, 2007 at the property of Mr. Manuel Álvarez Zúñiga.
- The tower identified as Mesa Sandía was installed on the 10th day of August, 2009 at the property of the ejido Rancho Nuevo.
- The meteorological tower identified as TM01 was installed on the 23rd day of March, 2013 at the property of Mr. Adolfo Mares.

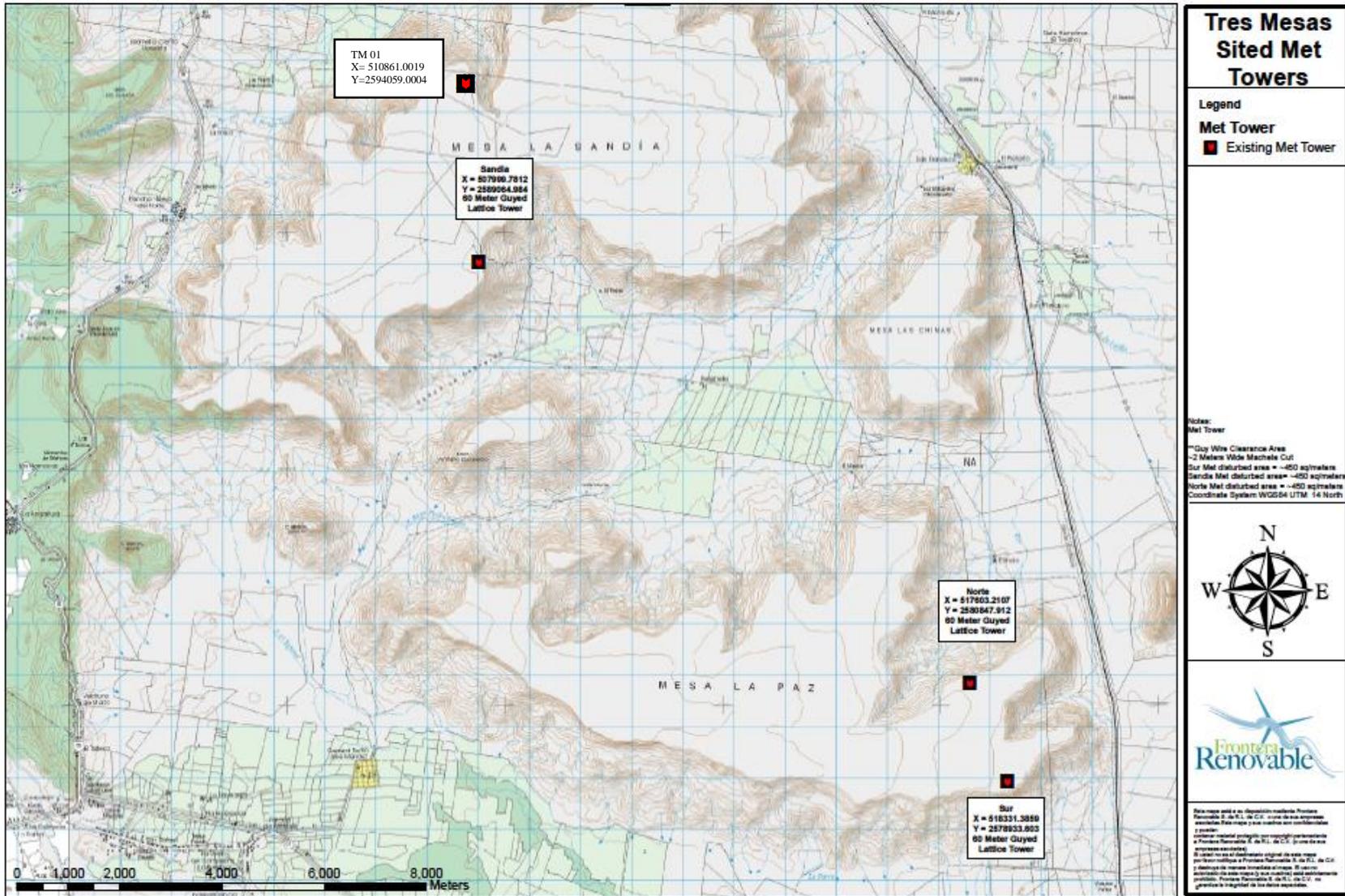
Currently, the four meteorological towers are operated by Frontera Renovable. For purposes of reference for the authority regarding each of these meteorological towers, each of them takes up a surface of 5 x 5 meters total. We can find the foundations of each tower on this surface, which measure 1.5 x 1.5 meters and are anchored to three cables forming angles of 0°, 120° and 240°.

Likewise, for its construction we selected sites lacking vegetation next to the existing access roads and on surfaces below 500 square meters, so according to section 5 paragraph O) fraction I, an authorization of environmental impact or an authorization for changing the land use on forestry lands was not necessary, in terms of section 2 along with Second Chapter of the General Law for Sustainable Forest Development.

Finally, the following table shows the location coordinates of the existing meteorological towers and figure 1 presents a plan with the location thereof.

Tower	Coordinate x	Coordinate y
TM 01	510861.0019	2594059.0004
TM Sandra	507999.7812	2589064.984
TM North	517603.2107	2580847.912
TM South	518331.3859	2578933.603

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**THE PETITIONER SHALL ALSO SUBMIT UPON THIS REGIONAL OFFICE THE INFORMATION RELATED TO DATA OF CLIMATE AND WIND CONDITIONS OF THE AREA WHERE IT INTENDS TO PERFORM OR DEVELOP THE PROJECT, INCLUDING INFORMATION USED AND/OR EMPLOYED FOR THE PREPARATION AND/OR DRAFTING OF THE ENVIRONMENTAL IMPACT STATEMENT.**

In response to this request, FR states that it will not submit the information requested for it is confidential information in terms of the applicable legislation, considering as well, at it's discretion, that it is not a *sine qua non* element for the procedure of Environmental Impact Assessment object matter hereof.

### **2.3. HEIGHT OF WIND TURBINES AND ACCURATE DATA ON SAMPLINGS OF BIRDS AND BATS**

- **SPECIFY THE APPROXIMATE HEIGHT OF WIND TURBINES INCLUDING TOWER AND BLADES**

Wind turbines consist of three basic parts: a) tower, height from 60 to 100 meters; b) nacelle, c) and rotor connected to the nacelle, which consists of the box, the nose and three blades built traditionally of fiberglass and steel connections with length of 50 to 63 m per blade, thus forming a rotor of 100 to 126 m of diameter.

The petitioner is still assessing the type of wind turbine to be used; however, it is estimated that for stage one and two it will possibly be equipment VESTAS model V112 of 3.0 to 3.3. MW, with a rotor diameter of 117 meters.

The total height of each wind turbine, including tower and blades, is estimated to be maximum 150 meters, but it may vary depending finally on the wind turbine capacity, the blades length (which in turn depends on the wind characteristics at the exact location of the turbine), the height of the towers selected and the best technology existing at the moment.

For purposes of the assessment of impacts on birds, the height range considered was between 120 and 180 meters.

- **INDICATE THE RECORDS RELATED TO TYPE OF SPECIES AND FREQUENCY OF SPECIMENS DETECTED FLYING AT HEIGHTS BETWEEN 100 METERS AND LESS THAN 200 METERS, STATING THE MONITORING PERIOD (IN DAYS) AND THE CORRESPONDING STATION.**

Appendix three presents the last bird monitoring report, including spring and summer seasons (March, April, May, June, July and August 2013). This study established the corresponding specifications on the flight heights and frequency of individuals detected.

However, in order to detail more precisely the results from the monitoring, next we present an explanation about the methods used for each monitoring and the list of species detected in spring, indicating the number of individuals detected, how many of them where detected at risk heights, collision

probabilities for each species and finally the flying seasonality, habits and behavior for each species (Table 1).

Each method used for monitoring birds is supplementary and meets the specific features (that is, abundance recording and species richness at different points counting). In this regard, the radar method allows detecting targets which behavior is assumed to be compatible with birds flying within the area of study and determining their flight heights, it does not allow identifying individuals or groups to determine their specie.

Therefore, data used to estimate the collision risk probabilities is produced at the monitoring station operated during spring for a two-week term. The monitoring station is operated by two bird monitoring specialists who, assisted by binoculars and a telescope, carry out observation sessions during approximately eight continuous hours (from 08:00 to 16:00), including periods of higher activity registered for migratory birds. This method is used for monitoring and visual identification of predatory birds and waterfowl mainly of migratory species. A key factor for the effectiveness of the method is the appropriate location. The site where the station was installed allows monitoring the birds flying over the Mesas Sandía and La Paz.

In order to carry out the analysis of collision risk probability four height categories were established above ground level (AGL), using a range of altitudes based on the models of wind turbines planned to be installed. All birds observed were assigned a flight height category: 1= below the lowest point of the blade, 2 = between the lowest point of the blade and the center point of the rotor, 3 = from the center point of the rotor to the highest point of the blade and 4 = Heights above the blades. Since the second and third category belong to the altitude at which the wind turbine blades are located, these will be considered the collision risk zone.

Basically, the probability of a bird flying at a risk height consists of the product of two probabilities: 1) the probability of a bird entering the region flying over the wind farm and 2) the probability of birds entering the wind farm flying at height categories 2 and 3. Under this premise, during spring season we counted the birds observed within the area where wind turbines are intended to be installed in Mesas La Paz and La Sandía and birds passing through the region without entering the wind turbines area. The collision risk probabilities calculated for species observed at the monitoring station are presented in Table 1.

From the 40 species registered, the highest proportion of individuals was registered outside the areas of the Mesas and at heights above 200 meters AGL. Therefore, the values of the collision risk probabilities were low (< 0.5); very few species overflew the mesas showing collision risks and including mainly three migratory predatory species: *Buteo swainsoni* (0.58), *Circus cyaneus* (0.5) and *Buteo brachyurus* (0.4). It is worth mentioning that the abundance registered for these species was very low in comparison to those registered on the coast of the Gulf of Mexico (see <http://www.hawkcount.org/>) and at the Istmo de Tehuantepec, Oaxaca (Villegas-Patracá unpublished data). The latter suggests that at a local scale, birds migration is not as strong probably because species follow the coastline located at approximately more than 150 km east.

The following Table presents the list of birds registered at the monitoring station during spring season 2013 at Tres Mesas region, Tamaulipas and the collision risk probability calculated based on the individuals observed and their flight behavior.

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**Table 1.** Bird species registered at the monitoring station during spring season 2013 at Tres Mesas region, Tamaulipas and collision risk probability calculated based on the individuals observed and their flight behavior.

Specie	Ind num.	Flying at risk h	Flying at risk h within site	Collision Prob	Seasonality	Habits	Flight behav
<i>Cathartes aura</i>	67	26	20	0,30	Resident	Predatory	Solitary
<i>Buteo swainsoni</i>	48	28	28	0,58	Transitory	Predatory	Flocking
<i>Coragyps atratus</i>	16	0	0	0	Resident	Predatory	Flocking
<i>Psilorhinus morio</i>	12	1	0	0	Resident	Terrestrial	Flocking
<i>Euphonia affinis</i>	7	0	0	0	Resident	Terrestrial	Solitary
<i>Icterus gularis</i>	6	0	0	0	Resident	Terrestrial	Solitary
<i>Polioptila caerulea</i>	6	0	0	0	Resident	Terrestrial	Solitary
<i>Zenaida asiatica</i>	6	0	0	0	Resident	Terrestrial	Flocking
<i>Baeolophus atricristatus</i>	5	0	0	0	Resident	Terrestrial	Flocking
<i>Buteo brachyurus</i>	5	3	2	0,4	Resident	Predatory	Solitary
<i>Buteo magnirostris</i>	5	1	1	0,2	Resident	Predatory	Solitary
<i>Caracara cheriway</i>	5	1	0	0	Resident	Predatory	Solitary
<i>Hirundo rustica</i>	5	4	0	0	Transitory	Terrestrial	Flocking
<i>Polioptila sp.</i>	5	0	0	0	Resident	Terrestrial	Solitary
<i>Archilochus colubris</i>	4	0	0	0	Transitory	Terrestrial	Solitary
<i>Corvus cryptoleucus</i>	4	4	0	0	Hibernating	Terrestrial	Solitary
<i>Arremonops rufivirgatus</i>	3	0	0	0	Resident	Terrestrial	Solitary
<i>Corvus imparatus</i>	3	1	1	0,33	Resident	Terrestrial	Solitary
<i>Picoides scalaris</i>	3	0	0	0	Resident	Terrestrial	Solitary
<i>Quiscalus mexicanus</i>	3	3	0	0	Resident	Terrestrial	Flocking
<i>Tyrannus melancholicus</i>	3	0	0	0	Resident	Terrestrial	Solitary
<i>Branta canadensis</i>	2	0	0	0	Transitory	Aquatic	Flocking
<i>Buteo albicaudatus</i>	2	0	0	0	Hibernating	Predatory	Solitary
<i>Buteo lineatus</i>	2	1	1	0,5	Hibernating	Predatory	Solitary
<i>Camptostoma imberbe</i>	2	0	0	0	Resident	Terrestrial	Solitary
<i>Circus cyaneus</i>	2	1	1	0,5	Hibernating	Predatory	Solitary
<i>Corvus corax</i>	2	0	0	0	Resident	Terrestrial	Solitary
<i>Euphonia hirundinacea</i>	2	0	0	0	Resident	Terrestrial	Solitary
<i>Falco sparverius</i>	2	0	0	0	Hibernating	Predatory	Solitary
<i>Pandion haliaetus</i>	2	1	0	0	Hibernating	Predatory	Solitary
<i>Patagioenas flavirostris</i>	2	0	0	0	Resident	Terrestrial	Flocking
<i>Toxostoma longirostre</i>	2	0	0	0	Resident	Terrestrial	Solitary
<i>Accipiter cooperii</i>	1	1	0	0	Hibernating	Predatory	Solitary
<i>Amazilia yucatanensis</i>	1	0	0	0	Hibernating	Terrestrial	Solitary
<i>Cardinalis cardinalis</i>	1	0	0	0	Resident	Terrestrial	Solitary

Specie	Ind num.	Flying at risk h	Flying at risk h within site	Collision Prob	Seasonality	Habits	Flight behav
<i>Columbina passerina</i>	1	0	0	0	Resident	Terrestrial	Solitary
<i>Geococcyx californianus</i>	1	1	0	0	Resident	Terrestrial	Solitary
<i>Mniotilta varia</i>	1	0	0	0	Hibernating	Terrestrial	Solitary
<i>Oreothlypis celata</i>	1	0	0	0	Hibernating	Terrestrial	Solitary
<i>Piranga bidentata</i>	1	0	0	0	Resident	Terrestrial	Solitary

• **RESULTS FROM BIRD SAMPLINGS FOR DIFFERENT SEASONS**

The petitioner, through hiring the INECOL, intended to start birds and bats monitoring since October 2012; however, due to insecurity conditions in the area, a decision was made to begin on March 2013, only after the petitioner determined that it was safe. To this date, there are complete results from spring and summer, encompassing the months of March, April, May, June, July and August 2013. Currently, at the site there is a field brigade to monitor autumn conditions and then completing winter conditions.

The monitoring performed during autumn will provide information to corroborate the trend described during spring.

It is worth mentioning that at the Project region, the Instituto Tecnológico de Monterrey (ITESM) monitored birds for nine months during 2011 (April through December). The method used was point count and there were 18 tours total. 38 points total were distributed throughout Mesa La Sandía and 15 points throughout Mesa La Paz. According to the flight heights registered, there was also an analysis to determine the collision risk and the rate of exposure of different species upon wind turbines. From the species registered, we identified those included in Mexican Official Standard, NOM-059-SEMARNAT-2010.

Said study, for Mesa La Sandía, reported a total of 4,996 individuals of 118 species, 13 included in NOM-059-SEMARNAT-2010. For Mesa La Paz, the record shows a total of 2,550 individuals of 83 species; five included in NOM-059-SEMARNAT-2010. Most of these species (*Accipiter cooperi*, *A. striatus*, *Buteo albicaudatus*, *B. albonotatus*, *B. lineatus*, *B. swainsoni*, *Buteogallus anthracinus*, *Ictinia mississippiensis* and *Parabuteo unicinctus*) were migratory predatory birds. Although the study by the ITESM did not implement any specific method allowing the analysis of migratory patterns in the area, during spring and summer, it reported migratory species flying in large groups.

The results of this study demonstrate also that the greater collision risks are for the group of passeriform birds which do not flock together and predatory species. The results from the ITESM were taken into account to establish the work hypothesis of the INECOL.

**2.4. LAND RESTORATION AND CONSERVATION PROGRAMS AND SUBPROGRAM FOR RESCUE AND RELOCATION OF FLORA**

Next we present in detail the land restoration and conservation programs as well as the subprogram for

rescue and relocation of flora in order to specify the storage conditions to preserve fertility on the soil layer, indicate which species will be used to ensure land restoration and conservation, and detail the general standards or guidelines to be followed in rehabilitation measures, stating the location and dimensions of sites used to distribute relocated species, how the transplant will be performed and the dimensions of the plants to be rescued and transplanted.

## LAND RESTORATION AND CONSERVATION PROGRAM

- **Objectives**

- To identify and define practices applicable to erosion control during the stages of site preparation and construction of the wind farm.
- To establish the necessary measures for the land to return to its initial characteristics in temporary works involving the resource, and to repair or compensate the damages in permanent works.

- **Activities**

The activities or strategies to be developed must be problem-oriented during each of the different stages of the "Tres Mesas" Wind Farm Project.

The activities for site preparation and construction necessarily involve direct impact on the land resource and vegetable coverage, causing erosion and disturbing surface drainage patterns.

In this regard, it is necessary to propose a series of strategies and measures to minimize damages caused to these resources and, in order to fulfill the objective, they will be oriented to protecting the land surface and avoiding particles from being swept by rain or wind. The main techniques and measures to be considered are described hereunder in general, but they should be developed in detail each time the Program is prepared in detail, which might include other supplementary measures or strategies.

- **Delimitation of working zones.** Working zones for transit and storage must be clearly marked out according to the project design and the work program, so that the loss of vegetable coverage and land is minimum; therefore, there must be a perimeter demarcation at such areas restricting the access to other areas within the disturbed zone of the project.
- **Land Fertility** All the soil removed will be stored temporarily whether at the work site or in the sections reserved for that purpose. In order to preserve fertility of the soil layer, the material should be periodically removed to avoid compression and allow the entrance of oxygen. This practice will be positive to maintain the appropriate characteristics of the land for it to be reused in rehabilitation activities. We will intend, as much as possible, to decrease storage times for this material.
- **Drainage and water harvesting systems.** Considering the nature of the project, mainly during digging activities for laying foundations for wind turbines and civil works, as well as during the installation of the underground electrical grid, there will be an issue of water accumulation during rain season. In order to avoid this, it will be necessary to build temporary dams and drains.

Ditches must be kept dry and if necessary accumulated water will be extracted through pumping or any other alternative method.

- **Barriers.** In order to avoid the erosion of excavated areas, barriers should be used such as: mesh, sand bags, duffel, agave or coconut fiber, local natural fibers, etc.
- **Use of mulches in areas to be restored.** Mulches are an excellent technique to preserve lands and to allow their reestablishment and persistence. In this regard, once the areas to be restored are decompacted through the use of special machinery, the mulches will be set using debris from organic material obtained during clearing and cleaning (bark, vegetable debris product of the clearing and grubbing) in the areas prone to erosion, in order to cover the naked soil, prevent surface run-off, regulate the soil temperature, preserve humidity and avoid weed.
- **Planting the Vegetable Coverage** They will use native plants, mostly those rescued at cleared and grubbed areas; this will be done as the areas disturbed are free. They will select species providing relevant environmental services such as:
  - Reduction of wind speed
  - Water harvesting and setting
  - Mitigation of the effects of climate change;
  - Generation of oxygen and assimilation of several pollutants;
  - Protection of biodiversity;
  - Retention of soil and assistance for reestablishment of edaphic layer
  - Shelter for wild fauna;

Some of the species suggested are:

Family	Scientific Name	Common Spanish Name	Stratum
Agavaceae	<i>Yucca sp.</i>	Yucca, Ghost in the graveyard	Arboreal
Boraginaceae	<i>Cordia boissieri</i>	Mexican Olive, Anacahuita	Bushy
Boraginaceae	<i>Cordia pringlei B.L. Robinson</i>	Huevo de gato	Bushy
Burseraceae	<i>Bursera fagaroides (H.B.K)</i>	Fragrant bursera, copal	Arboreal
Ebenaceae	<i>Diospyros palmeri Eastw.</i>	Ebony or perimmon tree	Arboreal
Ebenaceae	<i>Diospyros texana Scheele</i>	Texas Persimmon, black persimmon	Arboreal
Leguminosae	<i>Acacia berlandieri Benth.</i>	Berlandier's acacia, guajillo	Bushy
Leguminosae	<i>Acacia rigidula Bentham</i>	Black-brush acacia	Bushy
Leguminosae	<i>Acacia schaffneri (S.Wats.) F.J. Hermann var. Bravoensis Isely</i>	Huizache	Bushy
Leguminosae	<i>Eysenhardtia polystachya (Ort.)Sarg</i>	Kidney-wood	Bushy
Leguminosae	<i>Lysoloma divaricata</i>	Rajador	Arboreal
Leguminosae	<i>Mimosa malacophylla Gray</i>	Cat's claw	Herbaceous

Family	Scientific Name	Common Spanish Name	Stratum
Leguminosae	<i>Parkinsonia aculeata</i>	Mexican palo verde, Parkinsonia	Arboreal
Mimosaceae	<i>Pithecellobium dulce</i> (Roxb.) Benth	Blackbead	Arboreal
Leguminosae	<i>Pithecellobium ebano</i> (Berland.) C.H. Mull.	Ebano	Arboreal
Leguminosae	<i>Pithecellobium pallens</i> (Benth.) Standley	Blackbead	Arboreal
Leguminosae	<i>Prosopis laevigata</i> (W. & B. ex Willd) M.C. Johnst.	Smooth mesquite	Bushy
Nolinaceae	<i>Beaucarnea recurvata</i> (Lemaire, 1861).	Elephant's foot	Arboreal
Rhamnaceae	<i>Ziziphus amole</i> (Sessé & Mociño) M. Johnston	Naranjillo	Arboreal

Should seedling be required, it should be obtained from the closest plant nursery of the area under study, in order to avoid several climate changes, these actions will be undertaken by specialist technicians or staff properly trained.

The choice of plants should be focused on healthy plants, without plagues or disease, fully exposed to the sun for at least three months before guaranteeing their resistance. If these plants lacked the period of acclimatization directly to the sun or drought, they are likely to die under natural conditions; hence, it is recommended that they be exposed to this type of lack of water and high exposure to the sun, if they survive this practice they are expected to survive at the site. Therefore, it is important to choose plant nurseries known for their quality in plants and appropriate phytosanitary handling.

Likewise, it is recommended that reforestation be carried out in the beginning of the rain season, the unfavorable months for this activity are October through May.

- **Methodology**

To perform the aforementioned activities you must have specialized staff who will define the techniques and methodology to be used in the different disturbed areas, taking into consideration the problem during each of the project stages.

Once the general arrangement of the farm has been defined, a map will be prepared determining more accurately the location and dimensions of the sites requiring restoration tasks.

The staff in charge of these tasks should:

- Mark out on a plan the different working areas.
- Analyze the geological, edaphological and hydrological information in the site.
- Identify the specific areas which may be affected as a consequence of the activities of site preparation and construction.
- Define and develop the necessary techniques during each project stage and at each disturbed area, taking into account the project Schedule.

- Take into consideration the provisioned in the Subprogram for Rescue and Relocation of Flora, so as to coordinate the activities to be carried out according to the original purposes at the disturbed areas and subsequent use. With this, we aim to rehabilitate all areas where there was natural vegetation and that the lands recover their purpose or even their productive capacity so as not to affect the interests of the owners who leased their property.

#### SUBPROGRAM FOR RESCUE AND RELOCATION OF FLORA

- **Objective**

- To rescue and protect the vegetable species, mainly those with biological, cultural or economic relevance or under any status of protection as per NOM-059-SEMARNAT-2010, as is the case of elephant's foot (*Beucarnea recurvata*).
- To rehabilitate the disturbed sites by means of **Restoration** strategies, understanding this term as the group of activities aimed at the rehabilitation of a degraded ecosystem, to partially or fully recover the original purpose thereof and maintain the condition fostering their persistence and evolution

- **Activities**

This Subprogram includes the areas that were disturbed during the activities of site preparation and construction and which will not be occupied by elements from the project during the operation of the wind farm, including all sites taken by courtyards for maneuvering and material storage zones, as well as roads and dirt tracks which will no longer be used during inspection and/or maintenance tours. These areas will be defined once we have the final arrangement for the wind farm.

The activities to be included as part of this Subprogram are described below:

- A plant nursery will be set up so as to have a suitable space for temporary storage of plants that will be transplanted and, if any, carry out the reproduction of species if necessary.
- To identify the grass species that may be sowed over the areas to be restored in order to achieve the stabilization of the soil and decrease the laminar and wind erosion that may occur in open spaces.
- To describe and schedule the activities to be developed, highlighting those needed to guarantee the survival of specimens used.
- To reforest with native species from each type of vegetation.
- To take into account during the transplant the biological features, sizes and ages suitable to guarantee their development and survival. This will be determined by the specialist; however, considering that the rootball of the *Beucarnea* is narrow and that the height of these plants does not exceed 4 meters, and that they are plants resistant to environmental changes, it is estimated that the possible sizes to be transplanted are less than 1.70 meters
- To present the list of species to be used indicating the organisms name per species and their conservation status, as per NOM-059-SEMARNAT-2010.

- To prohibit the sale and purchase of the specimens and parts of the species rescued of terrestrial flora, allowing only their scientific collection.
- To indicate in the corresponding cartography the location and dimensions of the sites that will be used to distribute transplanted species, whether at sites needing reforestation and/or any educational center for regional research

- **Methodology**

To carry out the activities above mentioned you must have staff specialized in rescue and relocation of flora, who will perform the following activities:

- Before starting any activity on clearing and weeding, there should be previous tours in order to perform the exploration and identification work for species of flora which may be at some kind of risk. In case of finding individuals of species of flora useful for land restoration or included in NOM-059-SEMARNAT-2010, they should be rescued and relocated at sites with similar environmental conditions than those where they were originally. Technical data sheets of the species must be prepared.
- Species rescued will be stored temporarily at the plant nursery, as well as those species which may be reproduced and used for restoration purposes.
- To determine and implement rescue, transportation, transplant and revegetation techniques at the areas selected for their conservation, focused mainly on slow-growing species or those in the NOM-059.
- To identify species which, even if not presenting the aforementioned characteristics, are representative of the regional flora and, therefore, will also be rescued to be used in the area that is going to be reforested, with the purpose of incorporating the project into the natural landscape.
- To follow the scientific measures and protocols during the development of the studies and the implementation of rescue measures.
- To prepare reports and records documenting the activities carried out and the methods employed.

The following measures should be taken into account in order to carry out the transplant and relocation of individuals:

- a) First, it will be necessary to label the plant to be rescued with a number so as to know which plants were rescued, saved and transplanted. The labels may be made of hard plastic tied to the plant with resistant thread or thin wire.



- b) Then, the plant must be removed from the soil. The best way of doing this is to dig a channel around the plant and below it, which must be at least half the width of the stalk's diameter, all around the plant. The next image shows an example:



- c) To protect the roots along with the soil at the base of the plant with wrapping which may be a thick paper bag, newspaper, fabric, bags or any wrapping which allows moving the plant from one place to another (Encepellonado). Never leave the roots uncovered.





- d) Plants rescued should be stored in the plant nursery and then taken to the site selected for transplant. Before being moved, the place for transplant must have been selected and a hole must be dogged to place the plant.



- e) The next step consists on placing the plant in the hole and cover it with dirt. It is very important to water it after the transplant so that there are no air bubbles remaining which may kill the plant and also so that the plant has water after having been subject to such stress.





- f) If feasible, the site where it was transplanted must be indicated on a map writing down the coordinates. These data must be recorded in the Flora Log
- g) All steps for rescue and transplant of flora must be registered through photographic files and each picture must be added the number of plant registered; that is, to identify each plant rescued with the same number of the label. Besides, the rescue log must be filled out in order to leave evidence in writing of the rescue and transplant. This is with the purpose of proving the Federal, state and municipal authorities the activities performed. The log must be filled out at the same time the rescue and transplant activities take place.

The log should contain the following data:

- Date
- Place where the species was found. If possible, write coordinates down
- Species: Write down the name if possible. Otherwise, include a general description of the plant
- Label number: It is suggested to number labels placing the acronym of the project (PETM) before the number, the code of the site where it was found (xx) followed by the consecutive number of the plant. For example:
  - PETM-xx-001
- Place where it was transplanted: Description of the site and if possible include coordinates
- Write down the number of picture of each species found and transplanted so as to easily find the pictures and print them for follow-up of report.
- A log must be prepared for each work day or, if necessary, a log for each activity. If there are two logs for each day, they should be given consecutive folios.
- The log should be signed by the person who carried out the work and the supervisor of the work.

The log has the purpose of keeping control of all activities performed, so in case there is a visit by any authority or supervisor, all the information is available and it is easy to quantify, identify and locate the species transplanted.

The following page shows an example of a log



Fecha: X/X/X

No de Folio: 1

Lugar: Camino a la torre meteorológica No.3

El día de hoy Lunes 5 mayo del 2013 siendo las 14: 00 horas, se hizo el rescate de 100 cactus, 200 plantas de las llamada pata de elefante y 100 árboles en El camino No. X, que va a la Torre meteorológica No. X en el estado de Tamaulipas, municipio de XXX. Todas las plantas rescatadas fueron trasplantadas a X metros alrededor del camino de acceso a la torre meteorológica No. X. A continuación se enlistan las plantas rescatadas y trasplantadas

No consecutivo	Especie	No de etiqueta	Foto No.
1	cactus	3-0001	3-0001
2	pata de elefante	3-0002	3-0002
3	cactus	3-0003	3-0003
4	cactus	3-0004	3-0004
5	cactus	3-0005	3-0005
6	cactus	3-0006	3-0006
7	cactus	3-0007	3-0007
8	cactus	3-0008	3-0008
9	cactus	3-0009	3-0009
...	...	...	...

### 3. CURRENT SCENARIO, WITHOUT THE PROJECT

- THE PETITIONER MUST INCLUDE AN ANALYSIS OF THE CURRENT SCENARIO WITHOUT THE PROJECT, AND THE EXPECTED FUTURE SCENARIOS WITH THE PROJECT WITHOUT PREVENTION AND MITIGATION MEASURES, AND WITH THE PROJECT INCLUDING THE APPLICATION OF SUCH MEASURES.

Table x. Scenario forecast

Environmental component	Current status without the project	Future status without prevention and mitigation measures	Forecast of scenario with the application of prevention and mitigation measures
<b>Physical environment</b>			
Climate	The microclimate has been modified in the areas cleared of vegetation for the development of agricultural and livestock activities.	"SECTION 36.- The Department of Energy, considering the criteria and guidelines of the national energy policy and the opinion of the Federal Electricity Commission, will grant permits for self-supply, cogeneration, independent production, small production or import or export of electric energy, as the case may be, under the conditions stated for each case: This will cause changes in temperature and humidity content at the site and consequently in the local microclimate. This is considered low impact considering that the surface to be cleared encompasses less than 2% of the total surface of the project	With the implementation of the Land Restoration and Conservation Program, as well as the Subprogram for Rescue and Relocation of Flora it is estimated that the areas for temporary occupation which were cleared will return to their original conditions, increasing the vegetable coverage and, thus, increasing humidity in the environment of this specific sites.

**TRES MESAS WIND FARM**

Environmental component	Current status without the project	Future status without prevention and mitigation measures	Forecast of scenario with the application of prevention and mitigation measures
Air quality	<p>At the area where we intend to develop the project there is no data about the air quality; however, there are no relevant fix sources of emission of pollutants so the air quality is deemed good.</p>	<p>During the activities of site preparation and construction, as well as during the stage of abandonment of the site (dismantling and demolition of facilities), the operation of machinery and equipment with internal combustion engines will be necessary, as well as of vehicles for moving dirt and materials for construction.</p> <p>This will cause an increase in the emission of combustion gas (Carbon Monoxide, Hydrocarbons, Nitrogen Oxides) and suspended particles (dust) in the Project area during working days. It is estimated that the emissions will be temporary and specific, so we believe they will not cause relevant impacts on the air quality within the area.</p> <p>The operation of the wind farm will not cause emissions into the atmosphere which may modify the current scenario.</p>	<p>The implementation of the Environmental Supervision Program will allow surveying and regulating the activities of contractors during the different stages of the project, with the purpose of guaranteeing the good conditions of equipment and machinery and hence avoid emissions which may disturb the air quality within the area. In addition, this program will also supervise watering on dirt roads and transportation of materials in trucks with canvas in order to avoid emissions of dust into the atmosphere.</p> <p>It is estimated that with the correct application of these measures the air quality will not be modified and remain in its current condition.</p>

**TRES MESAS WIND FARM**

Environmental component	Current status without the project	Future status without prevention and mitigation measures	Forecast of scenario with the application of prevention and mitigation measures
Noise and vibrations	No important sources of noise were detected, except for those produced by vehicles on the road and the railroad.	During the stage of site preparation noise emissions will be generated because of the operation of machinery and equipment, as well as for the use of explosives when blasting rocks. These emissions will be temporary; however, they will cause the displacement of species to surrounding areas.	<p>The implementation of the Environmental Supervision Program will allow surveying and regulating the activities of contractors during the different stages of the project, with the purpose of guaranteeing the good conditions of equipment and machinery and hence reducing noise emissions the project area.</p> <p>During the operation stage in the wind farm, noise emissions will be generated as a result of the operation of wind turbines; however, these are very low. It is estimated that at 300 meters of distance, the sound of a wind turbine generating electricity is likely to be approximately the same level of noise than water flowing at 50-100 meters of distance or the noise of fallen leaves during soft breeze. The wind turbine is located at a considerable distance from the closest population, which is a small town called San Francisco, at the east border of the project's polygon of impact, but at a distance of approximately 3 km from the closest wind turbine. Due to the aforementioned, the operation of the wind farm is considered to increase noise; nevertheless, we believe that it will not disturb communities nearby.</p>

**TRES MESAS WIND FARM**

Environmental component	Current status without the project	Future status without prevention and mitigation measures	Forecast of scenario with the application of prevention and mitigation measures
Surface hydrology	<p>At the plateau where the project will be located there is no permanent water body, so the overflow patterns which may be affected would only be temporary overflow during heavy rain. Rivers and streams at the SA do not show signs of pollution; nevertheless, the Guayalejo River is likely to present slight pollution issues because of the agriculture based on irrigation developed at its riverbanks.</p>	<p>During the stage of site preparation, mainly during the clearing, rehabilitation and road extension activities, as well as activities of construction of provisional works, there might be alterations in the patters of intermittent overflow, cuasing modifications in the specific hydrological pattern. In the construction stage, mainly in activities related to blasting activities and all the civil work (infrastructure construction, opening of ditches for wiring, excavations and leveling, etc), the appearance of alterations in intermittent overflow patterns is possible.</p> <p>During the different stages of the project there will be volumes of dirt and vegetable waste, as well as all type of domestic and industrial waste which, if not stored or disposed of in areas prepared for that purpose, may be swept to the channels of the closest streams causing modifications in the water quality.</p>	<p>The implementation of the Environmental Supervision Program will allow surveying and regulating other storm drainage works necessary to avoid water accumulation and erosion of the land. In addition, we will ensure that the material generated by the activities of clearing, grubbing and excavations be temporarily stored at the sites appointed for that, avoiding berms modifying the overflow patterns of the land and also avoiding storing material at zones where there can be a risk of sweeping of matter, due to wind or overflow, to the small valleys located at the border of the plateaus.</p> <p>With the latter, we will avoid modifications both in natural overflow patterns in the site and possible pollution of channels nearby due to sweeping of materials from the plateaus.</p>

**TRES MESAS WIND FARM**

Environmental component	Current status without the project	Future status without prevention and mitigation measures	Forecast of scenario with the application of prevention and mitigation measures
Underground hydrology	<p>The three aquifers encompassing the SA do not present over-exploitation and/or pollution issues according to data published by the CONAGUA.</p>	<p>The wind farm will use water from tankers coming from concessionaires authorized by the National Water Commission for the use of water resources.</p> <p>Another alternative considered which is subject to validation from the CONAGUA is obtaining volumes through definite partial transmission of any other authorized concessionaire available. So as not to change the conditions of the aquifer.</p> <p>The volumes of water to be used are not significant, and it is estimated that the aquifer of the SA is not going to be over exploited.</p> <p>The loss of vegetation due to clearing, as well as compression of lands is considered to cause a decrease in the capacity of recharging the aquifers.</p> <p>As for pollution of the water tables, if waste is not managed properly, there might be spills over the natural soil causing pollution of the soil and in extreme cases infiltrations into the phreatic zone.</p>	<p>With the appropriate implementation of the Land Restoration and Conservation Program, as well as the Subprogram for Rescue and Relocation of Flora it is estimated that the areas for temporary occupation cleared will return to their original conditions, increasing the vegetable coverage and, thus, allowing the recharging capacity of aquifers to be recovered.</p> <p>The Program for Comprehensive Management of Waste, as well as the Spill Control Procedure will allow avoiding spills which may cause soil pollution and in extreme cases infiltration into the phreatic zone.</p>

**TRES MESAS WIND FARM**

<b>Environmental component</b>	<b>Current status without the project</b>	<b>Future status without prevention and mitigation measures</b>	<b>Forecast of scenario with the application of prevention and mitigation measures</b>
Geomorphology	<p>The Project is located on three plateaus reaching altitudes of approximately 400 m ASL and 200 meters above the plain surrounding them. The plateaus are flat and surrounded by moderate canyons and valleys.</p>	<p>In general, the specific areas where wind turbines will be located are flat zones above the plateaus, which geomorphology will not be disturbed by the project.</p> <p>During rehabilitation and extension of access roads, it will be necessary to perform some cuts and leveling on the valleys surrounding the plateaus, where geological formations will be altered permanently but in a very exact manner.</p>	<p>The impact generation will be of very low magnitude and necessary to consider that the design of the road network to be rehabilitated and/or extended will consider the alteration of geological formations at the site is going to be minimized and the material removed during rehabilitation and extension of roads will be used for filling and leveling, trying always to preserve to the extent possible the original topographic conditions of the site.</p>
Soil	<p>In the Environmental System areas featuring erosion were detected in a very precise way and sometimes landfalls during rain season, especially due to construction of roads in areas with steep slopes.</p> <p>In particular, plateaus show from low to moderate degrees of erosion in specific areas lacking vegetation.</p> <p>The project area does not evidence soil pollution.</p>	<p>The clearing of the surface destined to permanent and temporary works will cause a modification in the land structure due to removal of the vegetable coverage and surface layers, leaving the soil exposed to erosive processes due to wind and rain, thus increasing the sites with low to moderate erosion degree.</p> <p>During the activities to be developed in all project stages there will be risks of soil pollution. This risk is caused by storage of fuel, as well as by the use of machinery and equipment, possible oil and fluids leaks during the stage of maintenance, and possible dripping of hydrocarbons to the land coming from machinery and equipment in bad conditions. In addition, the wrong management of solid and liquid waste could generate soil pollution, when storing them at sites without the appropriate controls</p>	<p>A Land Restoration and Conservation Program and a Program for Comprehensive Management of Flora and Fauna will be implemented, which contemplate activities such as restoration of temporary occupation areas with the purpose of reconstituting the land again and allowing growth of natural vegetation and reforestation, thus avoiding the land from continue being exposed to erosive processes.</p> <p>With the correct implementation of the Program for Comprehensive Management of Waste, as well as the Spill Control Procedure, we intend to prevent soil and water pollution at the area disturbed by the project.</p> <p>The site will remain free from soil pollutants.</p>
<b>Biotic environment</b>			

**TRES MESAS WIND FARM**

Environmental component	Current status without the project	Future status without prevention and mitigation measures	Forecast of scenario with the application of prevention and mitigation measures
Vegetation	<p>At the SA predominant vegetation is that of submontane scrub presenting good coverage and degree of conservation.</p> <p>In some specific areas within the SA, especially on the plains, we can observe areas cleared for development of agricultural and livestock activities.</p>	<p>Clearing and grubbing activities involve permanent removal of vegetation in 508.51Ha and temporary removal in 398.72 Ha, if we consider the scenario of maximum occupation (433 wind turbines maximum). Approximately 68.93% of the polygon where the project will be located is covered by submontane scrub, 7.81% by deciduous lowland forest (selva baja caducifolia), 4.51% by tropical mezquital and 3.35% by low thorny deciduous forest (selva baja espinosa caducifolia).</p> <p>It is worth mentioning that the loss of vegetation and modification of land use is limited exclusively to zones occupied by wind turbines, access roads and support infrastructure. In accordance with the EIS, it is estimated that the project will cover only 3.01% of the polygon, of which 1.69% are permanent works and 1.32% are temporary works.</p>	<p>With the implementation of the Land Restoration and Conservation Program, as well as the Subprogram for Rescue and Relocation of Flora it is estimated that the areas for temporary occupation which were cleared will return to their original conditions, increasing the vegetable coverage.</p>

TRES MESAS WIND FARM

Environmental component	Current status without the project	Future status without prevention and mitigation measures	Forecast of scenario with the application of prevention and mitigation measures
Vegetation	<p>The species <i>Beucarnea recurvata</i> (elephant's foot), listed in NOM-059-SEMARNAT-2010, was detected in the area. This species was observed on the hillsides of the plateaus, mainly in the deciduous lowland forest and low thorny deciduous forest and very scarcely in the submontane scrub. This was particularly observed in the northeast and southeast part of the polygon.</p>	<p>The clearing and grubbing activities involve the removal of some vegetable species which may be listed in NOM-059-SEMARNAT-2010, such as the elephant's foot (<i>Beucarnea recurvata</i>).</p>	<p>The implementation of the Subprogram for Rescue and Relocation of Flora, aims to rescue and relocate vegetable species, mains species found in some protection status as per NOM-059-SEMARNAT-2010, such as the elephant's foot (<i>Beucarnea recurvata</i>).</p>

TRES MESAS WIND FARM

Environmental component	Current status without the project	Future status without prevention and mitigation measures	Forecast of scenario with the application of prevention and mitigation measures
Fauna	<p>101 species of fauna were detected in total, under a conservation status as per the NOM-059-SEMARNAT-2010, of which 9 are endangered species, 29 are threatened and 63 under special protection. The group with the highest number of species is birds, followed by reptiles, terrestrial mammals, amphibians and bats (chiroptera).</p> <p>The presence of four felines under conservation status was noted: jaguar, jaguarundi, ocelot and oncilla, besides noticing trails of puma and lynx, although these two last species are not under protection.</p>	<p>With the removal of vegetation during clearing of the land, the habitat of fauna species living in the area will be modified, mainly terrestrial fauna. Among the species affected we can find the felines (jaguar, ocelot, linx and oncilla). These felines are territorial animals and generally solitary. Upon the modification of their habitat they will have to move to the surrounding area and take up new territories.</p> <p>During the operation of the wind farm there will be a risk of mortality of birds and bats due to collision with turbines, thus affecting their dynamic population.</p>	<p>For species under protection, a rescue program will be implemented considering intimidation techniques and habitat modification, as well as capture and management techniques, focused on avoiding damage and/or stress to wild fauna during construction stage. This will help decrease the number of wild fauna individuals within the area of impact of the project. In addition, the project aims at preserving ecosystemic units in their current status, which will work as shelters and biological corridors to enable the fauna to migrate and find places to live in.</p> <p>It is estimated that after the construction of the wind farm is concluded, the fauna will have the possibility of returning to the site.</p> <p>On collision of birds and bats. This will be avoided through the correct implementation of mitigation measures consisting in</p> <ul style="list-style-type: none"> <li>• installing anti-perching and flight diverter devices</li> <li>• To prevent the presence of carrion and maintain the surrounding of wind turbines bases clean (with no high vegetation) so as to prevent it from becoming shelter for preys of predatory birds.</li> <li>• To foreseen the possibility of momentary stoppage, when birds migration is massive.</li> </ul> <p>We will continue with the birds and bats monitoring plan to measure the intensity of the migratory phenomenon and analyze its possible interaction with wind turbines installed. This program will help determine additional measures so as to avoid collision both from birds and bats.</p>
Socio-economic environment			

**TRES MESAS WIND FARM**

Environmental component	Current status without the project	Future status without prevention and mitigation measures	Forecast of scenario with the application of prevention and mitigation measures
Landscape	<p>The area has mostly on its surface natural vegetation and hence it has a high landscape quality.</p> <p>The plateaus may be observed from several points.</p>	<p>The most notorious visual impact during the site preparation stage is the presence of machinery and equipment and during the operation stage is the presence of wind turbines.</p> <p>In order to use the wind maximum potential, wind turbines will be located at the highest areas of the plateaus, and will be visible from considerable distances.</p>	<p>The most notorious visual impact will be the presence of wind turbines. In order to use the wind maximum potential, wind turbines will be located at the highest areas of the plateaus, and will be visible from considerable distances. There is no mitigation measure for this purpose.</p>
Demography	<p>Even if the growth rate in the two municipalities is positive, there has been no significant increase.</p>	<p>The project shall create jobs mainly during the construction stage. It is estimated that non-qualified staff will be hired from nearby towns. However, we will also hire qualified staff with experience in construction of wind farms, which may cause an increase in the growth rate of the two municipalities, but it is estimated to have an insignificant value.</p>	
Marginalization	<p>The municipalities of Llera de Canales and Casas show medium marginalization rates. The main deficiencies, among others, are low salaries, low educational levels, deficiency in water and drain services.</p>	<p>With the construction and operation of the wind farm an economic benefit will be generated for all owners of the lands and of the ejidos, thus boosting local and regional development.</p> <p>In addition, the rehabilitation of roads within the project polygon will give owners better and easier access to their lands and thus better development of their activities.</p>	

