(DOE/EIS-0414-S1)

SUPPLEMENTAL TO THE ENERGIA SIERRA JUAREZ U.S. TRANSMISSION LINE PROJECT

FINAL ENVIRONMENTAL IMPACT STATEMENT

September 2018

U.S. Department of Energy
Office of Electricity
Washington, DC 20585

COVER SHEET

Responsible Federal Agency: U.S. Department of Energy (DOE), Office of Electricity (OE)

Title: Supplemental Environmental Impact Statement (SEIS) for the Energia Sierra Juarez (ESJ) *Transmission Line Project Final EIS (DOE/EIS-0414-S1)*

Location: San Diego County, California, Baja California, Mexico

Contacts: For additional information on this Draft SEIS) contact:

Brian Mills, Document Manager
Office of Electricity, OE-20
U.S. Department of Energy
Washington, DC 20585
Telephone: (202) 586-8267
Brian.Mills@hq.doe.gov

Abstract: A DOE Presidential permit (PP) is required before anyone can construct, operate, maintain, and connect an electric transmission line across the U.S. border. In December, 2007, Energia Sierra Juarez U.S. Transmission, LLC (ESJ) applied to DOE for a PP for an electric transmission line that would cross the international border between the U.S. and Mexico, near the town of Jacumba, California. In May 2012, DOE completed and released the *ESJ Transmission Line Project Final EIS (DOE/EIS-0414)* (Final EIS) that analyzed the potential environmental impacts associated with the PP requested by ESJ.

DOE issued PP-334 to ESJ on August 31, 2012. The ESJ U.S. Transmission line, and an associated transmission line and wind farm in Mexico (constructed by an ESJ affiliate) were completed and operational by June 2015.

DOE's issuance of PP-334 was challenged in an action filed in the United States District Court for the Southern District of California ("the Court") in December 2012. [1] In August, 2017, the United States District Court for the Southern District of California cited 'deficiencies' in DOE's FEIS and ordered DOE to prepare this Supplemental Environmental Impact Statement (SEIS) (DOE/EIS-0414-S1) for the *Energia Sierra Juarez U.S. Transmission Line Project EIS*. As a result, this SEIS includes the consideration of distributed power generation (generating power closer to the point of consumption, such as rooftop solar panels) as an alternative to the U.S. ESJ transmission line. This SEIS also includes an evaluation of potential environmental impacts in Mexico from the associated transmission line and wind farm in Mexico by incorporating analyses previously performed by the appropriate regulatory or permitting agencies in Mexico.

DOE is preparing this SEIS in compliance with the Council on Environmental Quality regulations for implementing NEPA (40 CFR Parts 1500-1508) and DOE's NEPA regulations (10 CFR Part 1021).

Copies of the SEIS may be obtained through requests submitted to Brian Mills. The SEIS will also be made available for public review via the project Website (http://www.esjprojecteis.org/).

[1] The Court did not vacate PP-334 pending DOE's completion of the SEIS. The permit currently remains in effect and the ESJ transmission line continues to operate, transmitting electricity generated at the Mexican Wind Farm to the electric grid in California.

LIST OF APPENDICES

SUMMARY

S.1 Background

A Department of Energy (DOE) Presidential permit (PP) is required before anyone can construct, operate, maintain, and connect an electric transmission line across the U.S. border. In December, 2007, Energia Sierra Juarez U.S. Transmission, LLC (ESJ), then a subsidiary of Sempra U.S. Gas and Power (Sempra), applied to DOE for a PP for an electric transmission line (ESJ U.S. Transmission Line) that would connect across the international border between the U.S. and Mexico, near the town of Jacumba, California, to a transmission line in Mexico and ultimately to a wind farm in Mexico.

DOE determined that issuance of a PP for this proposed project would constitute a major federal action that may have a significant impact upon the environment within the meaning of the National Environmental Policy Act of 1969 (NEPA).

In May 2012, DOE completed and released the ESJ Transmission Line Project Final Environmental Impact Statement (EIS) (DOE/EIS-0414) that analyzed the potential environmental impacts associated with the PP requested by ESJ. Based on the EIS and other analyses, DOE issued a Record of Decision on August 17, 2012, and on August 31, 2012, issued PP-334 authorizing the border crossing for the ESJ U.S. Transmission Line.

The ESJ U.S. Transmission Line, the Mexican Transmission Line and the Mexican Wind Farm were completed and operational by June 2015.

In December 2012. several parties brought an action under the Administrative Procedure Act (APA), 5 U.S.C. § 706(2), in the United States District Court, Southern District of California to challenge PP-334. Backcountry Against Dumps v. Moniz (S.D. Cal.)

On August 29, 2017, the United States District Court for the Southern District of California ("Court") remanded the case to DOE for preparation of a Supplemental EIS (SEIS) to address two deficiencies identified in the Court's previous orders:

First, the Court found that DOE must consider distributed power generation (generating power closer to the point of consumption, such as rooftop solar panels) as an alternative to the ESJ Project, rather than dismissing it from detailed consideration as inconsistent with the purpose and need for the Presidential permit.

Second, the Court found that DOE must take a "hard look" at potential impacts in Mexico from the ESJ transmission line in the U.S., the Mexican portion of the transmission line, and the wind farm in Mexico.

The Court found that these deficiencies were not serious, were not likely to have resulted in an erroneous permitting decision, and could be readily addressed in a SEIS by incorporating analyses previously performed by other regulatory agencies in the United States and in Mexico. For these reasons (among others), the Court did not vacate PP-334 pending DOE's completion of this SEIS. The permit remains in effect and the ESJ transmission line continues to operate, transmitting electricity generated at the Mexican Wind Farm to the electric grid in California.

S.2 Purpose and Need

The purpose and need for DOE's preparation of this SEIS of the ESJ Transmission Line Project Final EIS is to respond to the Court's direction to prepare an SEIS addressing the environmental impacts in Mexico of the Mexican Wind Project and the U.S. and Mexican transmission line, as well as including a more detailed explanation of why "Distributed Solar" was dismissed as an Alternative to DOE issuing a PP for a transmission line to cross the US border.

S.3 Distributed Generation Alternative

Concerning the first deficiency identified by the Court, the Court stated that in preparing the supplemental EIS, DOE could rely on the analysis of distributed generation contained in a 2011 EIS prepared by the Bureau of Land Management and the California Public Utilities Commission for three energy projects proposed in San Diego County (BLM/CPUC EIS). The BLM/CPUC EIS considered but rejected distributed power generation as a feasible alternative to those projects. In accordance with the Court's Order on Remedy, DOE has reviewed the BLM/CPUC EIS, herein incorporates by reference its alternative analysis of distributed generation, and relies on that analysis for purposes of rejecting distributed generation as a reasonable alternative to the ESJ U.S. Transmission Line.

Further, DOE has no legal authority to approve an alternative of distributed energy. The siting and installation of distributed generation facilities, or generation facilities of any kind, is beyond the scope of DOE's PP authority. A DOE PP authorizes an applicant to transmit electricity across the border into the United States and connect to the domestic electricity grid. DOE does not approve or regulate associated transmission lines, or decide where they are to be located. Therefore, given the narrow scope of DOE's PP authority, and in reliance on BLM's EIS alternative analysis as discussed above, DOE concludes that distributed power generation is not a reasonable alternative subject to the requirements for detailed analysis under NEPA.

S.4 Impacts in Mexico

S.4.1 ESJ U.S. Transmission Line

The U.S. portion of the project, built on private land owned by ESJ, is a double-circuit 230-kilovolt (kV) transmission line 0.65 mile (1.05 kilometers) in length, and has the capacity to transmit up to 1,250 megawatts (MW) of wind-generated electricity. The impacts in Mexico from the ESJ U.S. Transmission Line are similar in character to the impacts in the United States which are described in the 2012 Final EIS, although the impacts in Mexico are mostly of lower intensity due to the greater distance.

S.4.2 ESJ Wind project in Mexico

The ESJ Wind project is located in Tecate, Baja California, has an installed generation capacity of 155.1 MW and was constructed on some 13,100 acres of leased land near the city of Tecate. The Wind project consists of 47 wind turbines, each with a capacity of 3.3 MW, as well as ancillary transmission lines and facilities.

The Court Order on Remedy, Case #:3:12-cv-03062-L-LB stipulates that: “On remand, DOE will be entitled to attach and incorporate by reference any environmental documents prepared by the Government of Mexico or the United States.”

The reference documents for this SEIS include; Appendix 1- the *Comparative Environmental Analysis for the Energía Sierra Juarez Wind Project Baja California, Mexico* April 2012; Appendix 2-*Energía Sierra Juarez, LLC Wind Project General Department of Environmental Impact and Risk (DGIRA)* (translation) July 2010, and Appendix 3-*Energia Sierra Juarez LLC Wind Project MIA Summary* (translation) September 2009.

SUPPLEMENT TO THE ENERGIA SIERRA JUAREZ U.S. TRANSMISSION LINE PROJECT FINAL ENVIRONMENTAL IMPACT STATEMENT (DOE/EIS-0414-S1)

SECTION 1 INTRODUCTION

1.1 Background

On August 29, 2017, The Department of Energy (DOE) was ordered by Judge M. James Lorenz of the United States District Court for the Southern District of California (the "Court"), to prepare this Supplemental Environmental Impact Statement (DOE/EIS-0414-S1) for the *Energia Sierra Juarez U.S. Transmission Line Project EIS (DOE/EIS-0414).*

1.1.1 Overview of the ESJ U.S. Transmission Line Project Presidential Permit Process

In December 2007, Energia Sierra Juarez U.S. Transmission, LLC (ESJ), then a subsidiary of Sempra U.S. Gas and Power (Sempra), applied to the U.S. Department of Energy (DOE) for a Presidential permit (PP) to construct, operate, and maintain a 0.65-mile transmission line in the United States that would connect across the international border between the U.S. and Mexico, near the town of Jacumba, California, to a transmission line in Mexico and ultimately to a wind farm in Mexico. A DOE PP is required before anyone can construct, operate, maintain, and connect an electric transmission line across the U.S. border.

Executive Order (EO) 8202, issued by President Roosevelt in 1939, prohibited anyone from constructing or operating electric transmission facilities at the U.S. international border without first receiving a permit from the President. In 1953, EO 10485 transferred permitting authority to the Chairman of the Federal Power Commission, where it remained until 1977. In 1977, EO 12038 transferred the authority to the Secretary of Energy.

The DOE PP does not convey a right-of-way, or building permit, or permission to use Federal, State or private lands for construction of or operating electric transmission facilities. Siting of electric transmission facilities is normally a function of the State or a Federal land management agency. The PP is authorization to cross the border with the transmission line, the siting authority for construction of the ESJ transmission line would be a building/construction permit issued by San Diego County.

DOE determined that issuance of a PP for this proposed project would constitute a major federal action that may have a significant impact upon the environment within the meaning of the National Environmental Policy Act of 1969 (NEPA).

DOE prepared the ESJ EIS in compliance with the Council on Environmental Quality regulations for implementing NEPA (40 CFR Parts 1500–1508) and DOE's NEPA regulations (10 CFR Part1021). In May 2012, DOE completed and released the *ESJ Transmission Line Project Final EIS (DOE/EIS-0414)* that analyzed the potential environmental impacts associated with the application for PP filed by ESJ.

On June 08, 2012, the Environmental Protection Agency (EPA) Notice of availability appeared in the Federal Register for the *ESJ Transmission Line Project Final EIS (DOE/EIS-0414).*

On June 27, 2012, DOE received the EPA review of the Final EIS. Although it is extremely rare for DOE or any Department to receive praise on an EIS from EPA, the EPA review letter praises the DOE for incorporating analysis on the ESJ Wind farm in Mexico into the Final EIS.

Based on the FEIS and other analyses, DOE issued a Record of Decision and on August 31, 2012 DOE approved PP-334 permit authorizing the border crossing associated with the ESJ Project.

Subsequently, ESJ constructed a generator tie line (a double-circuit 230,000 volt (230-kV) transmission line) across the U.S.-Mexico border, and this tie line has now been operating since June 2015, supplying enough electricity to California to meet the needs of approximately 65,000 average households.

In December 2012, several parties brought an action under the Administrative Procedure Act (APA), 5 U.S.C. § 706(2), in the United States District Court, Southern District of California to challenge PP-334 styled Backcountry Against Dumps v. Moniz (S.D. Cal.).

The entire ESJ Transmission Line Project EIS (DOE/EIS-0414) from PP Application through the Court challenge, including all comments and ancillary documents, is available on the web at: http://esjprojecteis.org/index.htm.

The plaintiffs argued, among other allegations, that the EIS prepared by DOE did not comply with NEPA. The Court concluded that DOE's NEPA review was sufficient in most respects. It found, notably, that the EIS adequately analyzed all of the potential environmental impacts of the ESJ Project (including the portions of the transmission line and the wind farm located in Mexico) in the United States. However, the Court found that the EIS was deficient in two areas and determined that those two deficiencies would need to be addressed in a supplemental EIS.

First, in a ruling issued on September 29, 2015, the Court found that DOE must consider distributed power generation (generating power closer to the point of consumption, such as rooftop solar panels) as an alternative to the ESJ Project, rather than dismissing it from detailed consideration as inconsistent with the purpose and need for the Presidential permit. (Case 3:12-cv-03062-L-JLB Document 87 Filed 09/29/15).

Second, in a ruling issued on January 30, 2017, the Court found that DOE must take a "hard look" at potential impacts in Mexico from the ESJ transmission line in the U.S., the Mexican portion of the transmission line, and the wind farm in Mexico. (Case 3:12-cv-03062-L-JLB Document 113 Filed 01/30/17).

However, the Court also found that these deficiencies were not serious, were not likely to have resulted in an erroneous permitting decision, and could be readily addressed in a Supplemental EIS (SEIS) by incorporating analyses previously performed by other regulatory agencies in the United States and in Mexico. For these reasons (among others), the Court did not vacate PP-334 pending DOE's completion of this SEIS. The Presidential permit remains in effect and the ESJ transmission line continues to operate, transmitting electricity generated at the Mexican Wind Farm to the electric grid in California.

On August 29, 2017, the Court remanded the case to DOE for preparation of a SEIS that addresses the deficiencies identified in the Court's previous orders. (Case 3:12-cv-03062-L-JLB Document 128 Filed 08/29/17)

1.1.2 Description of the ESJ U.S. Transmission Line

The U.S. portion of the transmission line (ESJ U.S. Transmission Line), built on private land owned by ESJ, is a double-circuit 230-kilovolt (kV) transmission line 0.65 mile (1.05 kilometers) in length, and has the capacity to transmit up to 1,250 megawatts (MW) of wind-generated electricity.

1.1.3 Description of the ESJ Wind project and transmission line in Mexico

The ESJ Wind project and associated transmission line (ESJ Wind project) are located in Tecate, Baja California. The wind project has an installed generation capacity of 155.1 MW and was constructed on some 13,100 acres of leased land near the city of Tecate. The project consists of 47 wind turbines, each with a capacity of 3.3 MW, as well the ancillary transmission line and other facilities.

Figure-1 and Figure 2 are from Appendix 1, the *Comparative Environmental Analysis for the Energía Sierra Juarez Wind Project Baja California, Mexico* **(**April 2012).


Riverside County
San Diego County
Imperial County
California (USA)
Location of ESJ U.S. Gen-Tie Line Project
San Diego
El Centro
Boulevard
Jacumba
Mexicali
Tecate
Tijuana
ESJ Wind Project Phase 1 (Jacume) Lease Area
Baja California (Mexico)
Ensenada
Pacific Ocean
CALIFORNIA
Area shown in this figure
0 10 20 Miles
0 10 20 30 Kilometers
PROJECT REGIONAL MAP
January 2012

Figure-1

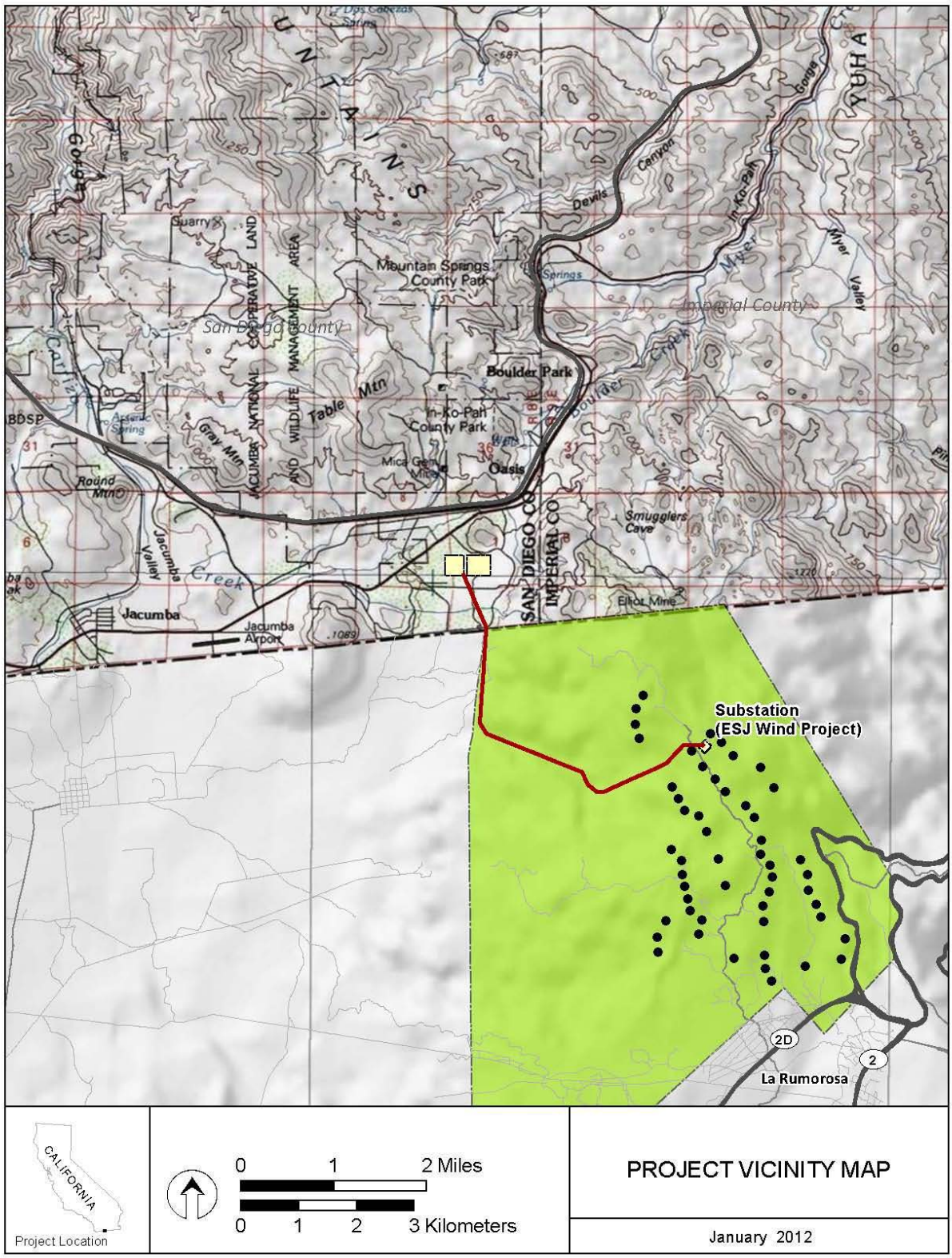

Substation
(ESJ Wind Project)
Mountain Springs
County Park
Boulder Park
In-Ko-Pah
County Park
Oasis
Jacumba
Jacumba
Airport
Elliot Mine
Smugglers
Cave
Mica Gem
Mine
Round
Mtn
Gray Mtn
Table
Mtn
BDSP
San Diego County
Imperial County
SAN DIEGO CO
IMPERIAL CO
2D
2
La Rumorosa
CALIFORNIA
Project Location
0 1 2 Miles
0 1 2 3 Kilometers
PROJECT VICINITY MAP
January 2012

Figure-2

1.2 Purpose and Need

The purpose and need for DOE's preparation of this SEIS is to respond to the Court's direction to prepare an SEIS providing a more detailed explanation of why "Distributed Solar" was dismissed from detailed consideration as an alternative in the EIS and addressing the environmental impacts in Mexico of the Mexican Wind farm and transmission line in both the U.S, and Mexico.

1.2.1 The Purpose and Need from the Final ESJ EIS

- "The purpose and need for DOE's action is to respond to the ESJ request for a PP. DOE may issue or amend a PP if it determines that the action is in the public interest and after obtaining favorable recommendations from the U.S. Departments of State and Defense. DOE received notices of non-objection from these agencies dated January 12, 2011 (Department of Defense) and January 27, 2011 (Department of State). "

- The PP applicant provided purpose and need included in the Final EIS stated that "The ESJ stated objective for the proposed transmission line is to transport renewable electrical power generated by the ESJ Wind project in Mexico to the U.S."

ESJ also indicated to the DOE that power generated by its proposed ESJ Wind project would potentially be partitioned between the U.S. and Mexico energy markets (although the extent of partitioning, if any, is undetermined) and that "the proposed transmission line is expected to reduce the region's dependence upon conventional fossil fuel fired generation plants, and improve the region's ability to meet future electrical energy requirements. The ESJ projects would also help California utilities meet the renewable portfolio standards specified in California Executive Order S-14-08, which requires that by the end of 2020, 33% of retail electricity sales be generated from renewable energy sources."

SECTION 2 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action and Alternatives

2.1.1 DOE Proposed Action

The proposed action considered by DOE in the Final EIS was the issuance of a Presidential permit for the construction and operation of ESJ U.S. Transmission Line project across the U.S. border.

2.1.2 Applicants Project Overview

As noted in the Final EIS, ESJ proposed to construct and operate the ESJ U.S. Transmission Line, an electric transmission line that would cross the international border between the U.S. and Mexico near the town of Jacumba, California. ESJ would construct either a double-circuit 230-kV transmission line or a single-circuit 500-kV electric transmission line which would connect up to 1,250 megawatt (MW) of electrical power from renewable energy generators to be located in the general vicinity of La Rumorosa, Northern Baja California, Mexico, with the Imperial

Valley-Miguel segment of the SWPL 500-kV transmission line. The applicant stated that there is potential for energy markets in both the U.S. and Mexico to have direct access to energy produced by the ESJ Wind project, but the degree of energy partitioning between the two markets, if any, was unknown at the time of the application.

As noted in Section 1.1.2 and 1.1.3, for the purposes of this draft SEIS, the term "ESJ U.S. Transmission Line project" refers to all ESJ project transmission line activities within the U.S., and the term "ESJ Wind project" refers to all ESJ project activities within Mexico including the transmission line located in Mexico and the Mexican Wind farm (see Figures 1 and 2). The international border delineates the separations between these U.S. and Mexican projects. The ESJ Wind project will be developed in phases. Phase 1 would be constructed on the furthest north land leased by ESJ (an area referred to as the Jacume lease area), north of the town of La Rumorosa, Mexico. The constructed double-circuit 230-kV route has a total length of approximately 1.7 miles (2.7 km), (including both the U.S. and Mexican portions of the line, to the first point of interconnection in Mexico). On the U.S. side, the transmission line was constructed on lattice towers. The interconnection for the transmission line to the U.S. transmission grid system (South West Power Line) would be provided by SDG&E at its ECO Substation switchyard facility.

2.2 Distributed Generation Alternative

Concerning the first deficiency identified by the Court, the Court's Order stated that in preparing the supplemental EIS, DOE could rely on the analysis of distributed generation contained in a 2011 EIS prepared by the Bureau of Land Management and the California Public Utilities Commission for three energy projects proposed in San Diego County (BLM/CPUC EIS). The BLM/CPUC EIS considered but rejected distributed power generation as a feasible alternative to those projects. Specifically, the Court stated in its Order on Remedy:

> In October of 2011, the Bureau of Land Management ("BLM") and the California Public Utilities Commission ("CPUC") jointly prepared an environmental impact statement in connection with a proposed utility-scale wind farm on federal land about 70 miles east of San Diego. The EIS rejected distributed power generation as an alternative because it was infeasible from a technical and commercial perspective that distributed generation could produce a meaningfully comparable level of clean energy as a utility scale wind farm. *Protect our Cmtys. Found. v. Jewell,* 2014 WL 1364453 *6 (S.D. Cal. 2014).
>
> This conclusion that distributed power generation is not a feasible alternative to a utility scale wind farm has withstood scrutiny by both this district and the Ninth Circuit. *Protect our Cmtys. Found. v. Jewell,* 825 F.3d 571, 581 (9th Cir. 2016). On remand, DOE will be entitled to rely on this analysis. *Center for Envtl. Law and Policy v. U.S. Bureau of Reclamation,* 655 F.3d 1000, 1012 (9th Cir. 2011) (finding it proper to rely on a prior review's elimination of a specific alternative where the EIS expressly states such reliance).

Backcountry Against Dumps v. Perry, No. 12-cv-03062, 2017 WL 3712487, at *2-3 (S.D. Cal. Aug. 29, 2017).

In the *Jewell* proceeding referenced by the Court, the district court noted that "[a]s explained in Section C of the EIS, BLM determined that the distributed power generation alternative did not merit in-depth study because it fails to fulfill several Project objectives and is infeasible from a regulatory, technical, and commercial perspective." *Protect our Cmtys.*, 2014 WL 1364453, at *6. The court went on to state:

> The Court agrees … that BLM provided more than sufficient discussion and analysis of the distributed generation alternative to satisfy NEPA. Although BLM must consider project alternatives that would avoid or minimize damage to the environment, the agency is not required to provide a comprehensive examination of alternatives that are infeasible or inadequate to meet stated objectives.

Id. at *7. On appeal, the Ninth Circuit affirmed, stating that "the BLM did not act unreasonably in dismissing the distributed-generation alternative." *Protect our Cmtys.*, 825 F.3d at 581.

The proposed projects analyzed in the BLM/CPUC EIS are located in San Diego County, California, and consist of proposed wind farms, the same ESJ U.S. Transmission Line that could import renewable energy from Mexico, and the ECO Substation project that would provide an interconnection hub for renewable generation along an existing transmission line. BLM's purpose and need as described in the BLM/CPUC EIS was to respond to a request for a right-of-way over public land, in accordance with BLM's statutory mandate to manage public lands for multiple use. *Final Environmental Impact Statement, SDG&E East County Substation Project, Tule Wind LLC, Tule Wind Project, and Energia Sierra Juarez U.S. Transmission LLC, Energia Sierra Juarez Gen-Tie Project* at A-5 to A-6 (October 2011) (*available at* http://www.cpuc.ca.gov/environment/info/dudek/ecosub/eco_final_eir-eis.htm). Additional project objectives described in the BLM/CPUC EIS were to increase renewable energy production, in accordance with state and federal goals, and to improve the reliability of power delivery.

In accordance with the Court's Order on Remedy, DOE has reviewed the BLM/CPUC EIS, herein incorporates by reference its alternative analysis of distributed generation, and relies on that analysis for purposes of rejecting distributed generation as a reasonable alternative for purposes of this SEIS. *See* 40 CFR 1052.21 ("Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action."). The BLM/CPUC EIS considered the distributed power generation, including rooftop solar panels but rejected it as a reasonable alternative. The BLM/CPUP EIS dismissed this alternative from further analysis because it "fails to meet several of the basic project objectives and would not meet feasibility criteria." BLM/CPUC EIS at C-55. Specifically, the BLM/CPUC EIS found that distributed energy was infeasible from a regulatory perspective because most distributed generation, including rooftop solar, was ineligible to contribute toward California state renewable energy requirements. *Id.* at C-56. Further, it found that distributed solar photovoltaic generation was infeasible from a technical perspective, because it is less efficient than the energy projects and would be insufficiently reliable to meet project needs. *Id.* at C-56 to C-57. Other distributed generation technologies were also deemed technically infeasible because they were "as yet unproven" and had "limited potential for growth." *Id.* at C-57. Finally, BLM noted that while it is required by law to evaluate utility-scale renewable energy development on public lands, utility-scale

generation cannot be achieved by distributed energy systems in a short time frame, and in any case, BLM "has no authority or influence over the installation of distributed generation systems." *Id.* at C-56. For these reasons, the BLM/CPUC EIS determined that distributed generation did not "meet basic project objectives and feasibility screening criteria" and should be excluded from further analysis. *Id.* at C-20.

In reliance on the BLM/CPUC EIS analysis, DOE concludes that distributed power generation is not a feasible alternative to the ESJ Project. Like BLM/CPUC, DOE finds that distributed generation is infeasible from a regulatory perspective. Further, DOE finds distributed generation to be an infeasible alternative from a technical and commercial perspective. The proposed ESJ project would produce up to 1,250 MW of electricity from the proposed wind farm in Mexico, and the PP allows up to 400WM to be transmitted over the ESJ U.S. Transmission Line; it would take an excessive number of solar rooftop installations to match that level of energy output.

> Given recent averages for rooftop solar installations and recognizing that approximately 2,000 residential rooftop solar installations would generate approximately 1 MW, the sheer number of new installations required to meet basic project objectives render this alternative highly speculative and therefore infeasible from a technical and commercial perspective.

BLM/CPUC EIS at C-57. In addition, a traditional single-source generation facility like the one proposed by ESJ benefits from economies of scale, improves efficiency by avoiding line losses associated with highly disparate small-scale generation, and allows grid managers to focus on integrating a single source's power fluctuations into the grid instead of coping with the reliability issues presented by many small and varied generation sources. Therefore, DOE finds distributed generation to be a technically and commercially infeasible alternative to the ESJ project.

Finally, DOE has no legal authority to approve an alternative of distributed energy. The siting and installation of distributed generation facilities, or generation facilities of any kind, is beyond the scope of DOE's PP authority. Executive Order 10,485, as amended by Executive Order 12,038, authorizes DOE to issue PPs upon a finding that issuance would be consistent with the public interest, after obtaining the favorable recommendations of the Secretaries of State and Defense. A DOE PP authorizes an applicant to transmit electricity across the border into the United States and connect to the domestic electricity grid. DOE does not approve or regulate associated transmission lines, or decide where they are to be located. Just as BLM noted it "has no authority or influence over the installation of distributed generation systems," DOE would have no authority to select distributed generation as an alternative to the ESJ project. Therefore, given the narrow scope of DOE's PP authority, and in reliance on BLM's EIS alternative analysis as discussed above, DOE concludes that distributed power generation is not a reasonable alternative subject to the requirements for detailed analysis under NEPA.

2.3 ESJ Wind Project in Mexico

The ESJ Wind Project in Mexico is succinctly summarized in Appendix 1, the *Comparative Environmental Analysis for the Energía Sierra Juarez Wind Project Baja California, Mexico* (April, 2012).

The ESJ Wind project in Mexico would be constructed in phases, with approximately 52 wind turbines constructed in Phase 1. Power output from Phase 1 would be 130 MW assuming nominally 2.5 MW per turbine, and potentially up to 156 MW if the output reaches 3 MW per turbine. Phase 1 is located on the furthest north land leased by ESJ (an area referred to as the Jacume lease area), north of the town of La Rumorosa, Mexico. Figure -1 depicts the general location of the project in eastern San Diego County and Baja California. Figure -2 provides a more detailed map of Phase 1 of the ESJ Wind project and project locations.

General wind turbine information is as follows: A typical turbine design that may be used for this project is similar to Siemens Power Generation's SWT-2.3-101 Wind Turbine (this is a 2.3 MW machine). The maximum rotational speed of turbine rotor blades averages between 6 and 16 revolutions per minute for a 2.5 MW turbine. The total height of the combined tower structure and rotor blades would likely be up to 431 feet (130.5 m), depending on the tower height and the turbine rotor blade diameters. The rotor diameter for the Siemens SWT-2.3-101 is approximately 333 feet (101 m). The total distance from blade tip at the six o'clock position to the ground surface would be at least 97 feet (29.5 m).

Approximately 30 percent of the wind turbine units are lighted (as dictated by Mexican regulatory requirements). It is anticipated that lighting would generally follow U.S. FAA guidelines or equivalent Mexican guidelines. Other infrastructure to support the wind turbines include access roads, electrical substations, and transmission lines from the substations to the U.S.-Mexico border, where the lines link to the ESJ U.S. Transmission Line, as shown in Figure -2.

Subsequent expansion of the ESJ Wind project in Mexico, if executed, is presently planned to consist of additional phases of wind turbines, up to a maximum build-out of 1,250 MW. The timing and location for installation of subsequent phases have not been determined.

The Mexican government has been involved in the evaluations of the environmental impacts associated with the wind project in Mexico. Further, the ESJ Wind project was constructed in accordance with all applicable Mexican laws, standards, rules, and regulations.

The agencies in Mexico with jurisdiction over the ESJ Wind project activities within Mexico include the Comisión Federal de Electricidad (CFE) (The Federal Electricity Commission), Comisión Reguladora de Energía (CRE) (Energy Regulatory Commission), Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT)(Environmental Protection Agency), and Instituto Nacional de Ecología (INE) (National Institute of Ecology and Climate Change).

SECTION 3 AFFECTED ENVIRONMENT, IMPACT ANALYSIS, AND MITIGATION

3.1 Affected Environment of the ESJ Wind Project in Mexico

The first phase of the proposed ESJ Wind Project was developed near the town of La Rumorosa in the municipality of Tecate, Baja California, Mexico. The site is located between the following extreme coordinates: 32° 29' 51.436"N, 116° 07' 12.119"W and 32° 37' 15.617"N, 116° 04' 18.66"W. The project can be accessed from the Tecate-Mexicali section of Federal Highway #2,

about one mile (two kilometers) from La Rumorosa. The project site covers approximately 486 acres (197 hectares), 215 acres (87 hectares) of which would be temporarily disturbed, and 272 acres (110 hectares) of which would be permanently disturbed. The project site contains several existing microwave towers, electrical distribution lines to service the microwave towers, temporary meteorological towers, and dirt access roads. The surrounding area is sparsely populated with small settlements and isolated houses.

The elevation of the project site ranges from approximately 3,200 feet (1,000 meters) to approximately 4,550 feet (1,387 meters). The terrain is steep and rocky, with granitic formations in the vicinity of La Rumorosa. There are few trees within the project footprint; rather, the project site is vegetated mainly with chaparral and other shrub species. The hot, dry climate is subject to drought.

3.1.1 Mexican Permits and Approvals

The ESJ Wind Project facilities triggered environmental reviews and project approvals by a number of agencies, principally an environmental review and permit by Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT). SEMARNAT is roughly equivalent to the federal Environmental Protection Agency (EPA) in the United States. A *Manifestación de Impacto Ambiental* (MIA; Environmental Impact Manifest) was prepared for the ESJ Wind Project. The MIA is roughly equivalent to an Environmental Impact Statement in the U.S. Based on its review of the MIA, SEMARNAT issued an Environmental Impact Authorization (EIA) for the ESJ Wind Project which specifies the terms and conditions of the authorization, including measures required to mitigate potential environmental impacts. The source documents for this SEIS include Appendix 2- ESJ Wind Project EIA, July 15, 2010 (translation) July 2010, and Appendix 3-Energia Sierra Juarez LLC Wind Project MIA Summary (translation) September 2009.

In addition, the *Comparative Environmental Analysis for the Energía Sierra Juarez Wind Project Baja California, Mexico* **(**April 2012) (included as Appendix 1), was prepared in 2012 in support of a request by ESJ to the California Energy Commission (CEC) for certification that the ESJ Wind Project is an eligible renewable energy resource that may be used to meet the California Renewables Portfolio Standard. The CEC so certified the ESJ Wind Project. www.energy.ca.gov/portfolio/documents/List_RPS_CERT.xls (line 540). The Comparative Analysis supported the required finding by the CEC that the wind project in Mexico would be constructed and operated "in a manner that is as protective of the environment as a similar facility would be if it were located in California." RPS Eligibility Guidebook (Eighth Ed. 2015) at 36 (available at http://www.energy.ca.gov/2015publications/CEC-300-2015-001/CEC-300-2015-001-ED8-CMF.pdf).

The MIA required comprehensive analysis and study of potential environmental and socioeconomic issues associated with the project, as well as an analysis demonstrating compliance with Mexican laws. The MIA process also included an extensive public involvement component, including notices published in the newspaper and mailed to interested parties, a public hearing, and opportunity to comment. SEMARNAT issued its permit for the ESJ Wind Project in 2010. A modification to that authorization was granted on March 15, 2011.

SEMARNAT's review of the ESJ Wind Project included evaluation of the following resources: Agricultural and Soil; Air Quality; Biological Resources; Cultural Resources; Geological Hazards; Land Use; Noise; Paleontological Resources; Public Health and Safety; Socioeconomics; Traffic and Transportation; Transmission System Safety and Nuisance; Visual Resources; Waste Management / Hazardous Materials Handling; Water Resources; Worker Safety; and Wildfire/Fire Safety.

During the MIA review, SEMARNAT evaluated potential impacts resulting from construction, operation, and abandonment of the facility. Prevention and mitigation measures were provided as appropriate and included requirements such as reforestation/replanting of certain impacted species and bird and bat monitoring.

Enforcement of all MIA conditions falls under the jurisdiction of the *Procuraduria Federal de Proteccion al Ambiente* (PROFEPA; Federal Environmental Attorney), an independent branch of SEMARNAT. Most reports of compliance with environmental regulation and permit terms and conditions must be presented both to SEMARNAT and PROFEPA. PROFEPA is entitled to perform verification visits to ensure compliance with all applicable environmental regulations, as well as the terms and conditions of the environmental permits. If a project is noncompliant, PROFEPA may issue warnings or fines, depending on the severity of the noncompliance, and may terminate a project if there are continued violations of the regulation.

In addition to the MIA, a *Cambio de Uso de Suelo en Terrenos Forestales* permit (Change of Forestry Land Use permit) must be issued by the Baja California office of SEMARNAT, which is the local SEMARNAT office for the ESJ Wind Project. This federal permit authorizes the change of the environmental designation of the land from forested lands (which includes any natural undeveloped lands, not just forested lands) to other designations such as industrial and urban. lands. This permit includes similar mitigations to those included in the MIA to reduce impacts during construction.

A CRE permit must be obtained for export of power to the US. CRE reviews the project for conformance with Mexican legal requirements as they pertain to the generation, transmission, export, and import of electrical energy, and authorizes the construction and operation of electric generating and transmission facilities.

In addition to the federal permits described above, the municipality of Tecate must issue a zoning and land use permit and a construction permit. The zoning and land use permit provides confirmation that the project is consistent with applicable state and local plans and requirements.

3.2 ESJ Wind Project in Mexico Environmental Impacts and Mitigation

The analysis submitted by ESJ to the Mexican government and the evaluation performed by the Mexican government in permitting the ESJ Wind Project, as reflected in Appendices 2 and 3, is incorporated by reference. The key findings and mitigation requirements from these documents are summarized below.

The EIA identified the main impacts of the various stages of the project by environmental component, activity, impact and mitigation required of ESJ.

Environmental component: Soils: Clearing and stripping of areas for the construction of the infrastructure required for the project (wind turbines, electricity transmission lines, electrical substations and provisional works). Construction and rehabilitation of roads, use of cargo and transport vehicles and heavy machinery.

Impacts: Could result in floods, soil erosion and soil contamination.

Mitigation: ESJ must carry out actions intended to retain and/or rehabilitate the soils and prevent and control erosion in the areas affected by the construction activities of the project
-Soil conservation practices. -

Environmental component: Fauna: Clearing and stripping of areas for the construction of the infrastructure required for the project (wind turbines, electricity transmission lines, electrical substations and provisional works). Operation of the wind turbines (operation and maintenance stage).

Impacts: Alteration and/or loss of habitat due to vegetation clearing, with consequent displacement of the organisms in space. Impact of the species of fauna listed or not in a legal regulation. Possible collision of birds (resident or migratory) and bats.

Mitigation: ESJ must carry out compensation actions for the loss of forest cover on an area equivalent to 3 times the forest area affected by the development of the project, in order to recover habitats for the wild fauna. Actions of protection and/or conservation of the fauna species that may be affected (including actions of rescue and relocation of wild fauna specimens), with special attention to the species listed in NOM-059-SEMARNAT-2001, as well as those that represent an important ecological role. ESJ must conduct a local and regional study of the birds and bats present in ESJ-Jacume, ESJ-La Rumorosa, ESJ-Sierra Juárez and ESJ Cordillera Molina, before the operation of the infrastructure covering a period of at least one year, considering the seasonality and behavior of the various species that may be present in the zone of the project, in order to identify the flight heights if the various species identified in the zone, and thus prevent the effect that the operation of the wind turbines may have on the populations of birds and bats, in addition to identifying whether there are zones of nesting, feeding and rest, inter alia and, if there are, establish the additional mitigation measures prior to the operation of the project.

Environmental component: Flora: Clearing and stripping of areas for the construction of the infrastructure required for the project (wind turbines, electricity transmission lines, electrical substations and provisional works).

Impacts: Loss of vegetal cover due to permanent clearing activities, especially in the areas intended for permanent infrastructure. Possible impact of species with status.

Mitigation: - ESJ must carry out compensation actions for the loss of forest cover on an area equivalent to 3 times the forest area affected by the development of the project, in order to compensate the environmental services lost with the clearing of the forest area required by the

project. To mitigate the effect of the activities of the project, a specific program will be carried out for the protection and conservation of wild flora. Furthermore, a program will be carried out for the handling of wild flora, which must include the species listed in NOM-059-SEMARNAT-2001, as well as those with ecological importance and likely to be handled or rescued. In this sense, for the performance of said programs, the petitioner must obtain specialized consulting, preferably from institutions of higher education or research of the region, so as to propose in detail the rescue actions applicable to each group, especially addressed to the species in protection status pursuant to NOM-059-SEMARNAT-2001, potentially found in the sites intended for the construction of the project and which should be relocated; it must include in the reports indicated by said semi-state institution the technical and scientific information that shows that the conservation or preservation actions of said species are successful.

3.3 ESJ U.S. Transmission Line Environmental Impacts in Mexico and Mitigation

The Court's first Order on Summary Judgment found that the 2012 Final EIS adequately analyzed all impacts in the U.S. from the ESJ U.S. Transmission Line. (Case 3:12-cv-03062-L-JLB Document 87 Filed 09/29/15). After further consideration of the Final EIS, DOE finds that the analysis of these impacts in the U.S. presented therein adequately discloses these same impacts as they may be felt (if at all) in the more distant environment in Mexico, and incorporates such discussion into this SEIS. In addition, the mitigation for any such impacts in the U.S. would likewise mitigate any such impacts to the extent they would be felt on the environment in Mexico. Therefore, no further analysis is required in this SEIS to analyze the impacts of the ESJ U.S. Transmission Line in Mexico.

SECTION 4 REFERENCES

The United States District Court for the Southern District of California, (Judge M. James Lorenz) Order on Remedy, Case # :3:12-cv-03062-L-LB (Doc. 128 filed 08/29/17) stipulates that: "On remand, DOE will be entitled to attach and incorporate by reference any environmental documents prepared by the Government of Mexico or the United States. *See Swiminomish Tribal Cmty. v. Fed. Energy Comm'n*, 627 F.2d 499, 511–12 (D.C. Cir. 1980) (holding it appropriate to incorporate in an EIS an environmental report prepared in part by the Canadian government that discussed environmental impacts a project would have upon the environment in Canada). Furthermore, given MMENR's [Mexican Ministry of Environmental Natural Resources] reasoned conclusion that the Project's impacts upon the Mexican environment are acceptable, and given that Plaintiffs have not articulated any valid reason to suspect problems with the methodology of the Mexican Government's environmental review process, it seems unlikely that DOE's remand consideration of these environmental impacts should trigger a different result."

Accordingly, the following analyses are incorporated by reference into this SEIS and adopted by DOE, in addition to the FEIS (DOE/EIS-0414) and the *Final Environmental Impact Statement, SDG&E East County Substation Project, Tule Wind LLC, Tule Wind Project, and Energia Sierra Juarez U.S. Transmission LLC, Energia Sierra Juarez Gen-Tie Project* at A-5 to A-6 (October 2011) (*available at* http://www.cpuc.ca.gov/environment/info/dudek/ecosub/eco_final_eir-eis.htm).

Appendix-1 *Energía Sierra Juarez, LLC Comparative Environmental Analysis for the Energía Sierra Juarez Wind Project Baja California, Mexico* (April 2012)

Appendix-2 *Energía Sierra Juarez, LLC Wind Project Environmental Impact Authorization (EIA)* (translation) July 15, 2010)

Appendix-3 *Energia Sierra Juarez LLC Wind Project MIA Summary* (translation) (September 2009)

SECTION 5 LIST OF PREPARERS

Brian Mills NEPA Compliance Officer, Document Manager, DOE, Office of Electricity (OE)

Christopher Lawrence, Management and Program Analyst, DOE, OE

Joyce Kim, Management and Program Analyst, DOE, OE

Julie Ann Smith, PhD, Management and Program Analyst, DOE, OE

(DOE/EIS-0414-S1)

Appendix-1

Energía Sierra Juarez, LLC Comparative Environmental Analysis for the Energía Sierra Juarez Wind Project Baja California, Mexico (April 2012)

Comparative Environmental Analysis for the Energía Sierra Juarez Wind Project Baja California, Mexico

April 2012

Submitted by: Energía Sierra Juarez, LLC

Prepared by:

Environmental Management and Planning Solutions, Inc.
26 O'Farrell Street, 7th Floor
San Francisco, CA 94108

TABLE OF CONTENTS

Chapter Page

FIGURES

Page

TABLES

Page

ACRONYMS AND ABBREVIATIONS

	Full Phrase
ARB	Air Resources Board
APCD	Air Pollution Control District
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CO_2	carbon dioxide
Commission	California Energy Commission
CRE	Comisión Reguladora de Energía
dBA	A-weighted decibel
DOE	Department of Energy
ECO	East County
EPA	US Environmental Protection Agency
ESA	Endangered Species Act
ESJ Wind	Energía Sierra Juarez Wind Project
FAA	Federal Aviation Administration
FERC	Federal Energy Regulatory Commission
IMSS	*Instituto Mexicano del Seguro Social* (Mexican Institute of Social Security)
INIH	National Institute of Anthropology and History
ISSSTECALI	*Instituto de Seguridad y Servicios Sociales para Trabajadores del Gobierno y Municipios del Estado de Baja California* (Institute of Social Services for Government and Municipalities of the State of Baja California Employees)
ISSSTE	*Instituto de Seguridad y Servicios Sociales para Trabajadores del Estado* (Institute of Security and Social Services for State Employees)

ACRONYMS AND ABBREVIATIONS *(continued)*

	Full Phrase
kV	kilovolt
Ldn	Day-night noise level
Leq	equivalent noise level
LGEEPA	*Ley General del Equilibrio Ecológico y la Protección al Ambiente* (Ecological Equilibrium and Environmental Protection General Law)
LGPGIR	*Ley General para la Prevención y Gestión Integral de los Residuos* (General Law for Prevention and Integral Procedures of Residuals)
LORS	laws, ordinances, regulations, and standards
MBTA	Migratory Bird Treaty Act
MIA	*Manifiesto de Impacto Ambiental*
MW	megawatt
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NREL	National Renewable Energy Laboratory
NSR	New Source Review
OSHA	Occupational Safety and Health Administration
PM_{10}	Particulate matter less than 10 microns
PSD	Prevention of Significant Deterioration
PUC	Public Utilities Commission
RA	risk assessment
ROW	right-of-way
rpm	revolutions per minute
SEMARNAT	*Secretaría de Medio Ambiente y Recursos Naturales*
SDG&E	San Diego Gas and Electric

ACRONYMS AND ABBREVIATIONS *(continued)*

	Full Phrase
SWPPP	Storm Water Pollution Prevention Plan
TSP	tubular steel pole
US	United States

This page intentionally left blank.

CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION

Energía Sierra Juarez, a subsidiary of Sempra Generation, is proposing to construct and operate the Energía Sierra Juarez Wind (ESJ Wind) Project. The ESJ Wind Project responds to environmental public policy initiatives and increasing demands for renewable energy projects that reduce greenhouse gas emissions. The ESJ Wind Project will contribute to meeting the requirement that California electric utilities include 33 percent renewable sources in their portfolio of electricity resources. In its first phase, the project would generate approximately 156 megawatts (MW) of power from wind turbines to be installed in Ejido Jacumé near the Baja California town of La Rumorosa, about 70 miles east of San Diego. **Figure 1**, Project Regional Map, shows the location of the proposed project. Chapter 2 of this report provides more detailed information on the proposed ESJ Wind Project.

This report provides information and analysis to address recently effective requirements of state law related to certification by the California Energy Commission (CEC or the Commission) that the ESJ Wind Project is an eligible renewable energy generator. Certification by the CEC is required for electricity purchased from the facility to count towards the California Renewable Portfolio Standard. Requirements concerning certification by the CEC are set forth at Public Resource Code section 25741(a). Chapter 3 describes the


Riverside County
San Diego County
Imperial County
California (USA)
Location of ESJ U.S. Gen-Tie Line Project
San Diego
El Centro
Boulevard
Jacumba
Mexicali
Tecate
Tijuana
ESJ Wind Project Phase 1 (Jacume) Lease Area
Baja California (Mexico)
Ensenada
Pacific Ocean
CALIFORNIA
Area shown in this figure
0 10 20 Miles
0 10 20 30 Kilometers
PROJECT REGIONAL MAP

pre-certification actions taken for the ESJ Wind Project and additional requirements that must be undertaken as a result of California Senate Bill 1X 2, signed into law on April 12, 2011.

Sempra Generation is committed to developing and operating the facility in a manner that is as protective of the environment as a similar facility located in California. As such, this report assesses the data, studies, and procedures being conducted in Mexico compared to what would be required if the project was being constructed in California.

1.2 REGULATORY CONSIDERATIONS

The ESJ Wind Project has project infrastructure that will be located on both sides of the US-Mexico border. A 0.6-mile generation-tie line will be located in the US, while the balance of the facility, including all wind turbines, will be located in Mexico. As a bi-national project, the ESJ Wind Project is subject to environmental, zoning, and other regulatory reviews in both the US and Mexico. Mexican laws and regulations are described in Section 1.2.1, while the Mexican review, permit, and approval processes undertaken for the ESJ Wind Project are described in Section 1.2.2. US permits and approvals for the generation-tie line are provided in Section 1.2.3.

1.2.1 Mexican Regulations

Federal Regulatory Requirements

Mexico's federal environmental code, *Ley General del Equilibrio Ecológico y la Protección al Ambiente*, was ratified in 1988. This code, dedicated to preserving and protecting the environment, dictates guidelines for the use of natural resources. In addition, it sets out pollution prevention and control methods for the national territory. Both Mexican and international companies and facilities are subject to Mexican environmental law. The ESJ Wind Project requires a permit from the *Secretaría de Medio Ambiente y Recursos Naturales* (SEMARNAT), the federal environmental agency responsible for review and approval of the project. SEMARNAT is analogous to the US Environmental Protection Agency in Mexico. This is one of the principal permits required for the project.

The *Comisión Reguladora de Energía* (CRE; Energy Regulatory Commission) grants permits for the construction and operation of private electricity generation facilities. The ESJ Wind Project requires an Independent Power Producer permit for the export of power to the US. CRE is analogous to the Federal Energy Regulatory Commission in Mexico.

The *Instituto Nacional de Antropología e Historia* (INAH, National Institute of Anthropology and History) is the federal bureau that guarantees the research, preservation, protection, and promotion of the prehistoric, archaeological, anthropological, historical, and paleontological heritage of Mexico. A construction project that is located near known archeological areas must receive clearance from INAH prior to construction. The archeological salvage is done by INAH personnel, rather than by consultants retained by the applicant, usually through an agreement signed with the developer of the project, who pays for all associated costs. The ESJ Wind Project requires clearance from INAH prior to construction.

The *Ley General de Desarrollo Forestal Sustentable* (General Law for Sustainable Forestry Development [GLSFD]) was passed on February 25, 2003, with implementing regulations effective in 2005. The objective of the law is to regulate the management, protection, restoration, conservation, and farming of natural ecosystems as well to distribute jurisdiction between the Federal, State and Local Government. Under the law, ESJ must obtain authorization to change the use of soil in forest lands, which is granted based on a Technical Study (*Estudio Tecnico Justificativo*) and the opinion of the State Forestry Council (*Consejo Forestal Estatal*). In order to complete the process, a payment must to be made to the Mexican Forestry Fund (*Fondo Nacional Forestal*) to compensate for the vegetation that will be removed. Although the law uses the term "forest", the requirements apply to removal of any non-disturbed vegetation (biomass).

State Regulatory Requirements

The Government of Baja California signed the *Ley de Protección al Ambiente* (Environmental Protection Law) on November 30, 2001 to complement the federal environmental code.

The *Programa de Ordenamiento Ecológico del Estado de Baja California* (POEBC; Ecological Program of the State of Baja California) is the technical/legal instrument to apply the environmental policy to achieve sustainable development in Baja California. It divides the territory into 10 different *Undiades de Gestion Ambiental* (UGAs), or Environmental Management Units, with general and specific rules for production activities, waste administration, water, environmental education and conservation, and restoration of natural resources.

The *Plan Estatal de Desarrollo Urbano de Baja California of 2004* (PEDUBC; State Plan for Urban Development of Baja California) sets the development strategies and land use compatibility for each of the urban regions and population centers in Baja California (see Local Regulatory Requirements, below).

Local Regulatory Requirements

The *Programa de Desarrollo Urbano del Centro de Población del Poblado de La Rumorosa del municipio de Tecate* (PDUCPLR; Urban Development Program for La Rumorosa) describes the socioeconomic, urban, natural and political aspects of La Rumorosa; the primary and secondary zoning; the various uses and restrictions; the limits for the population center; and the areas reserved for future development and ecologic preservation.

The *Programa de Desarrollo Urbano de Centro de Población de Tecate* (PDUCPT; Urban Development Program for Tecate) governs the land use in the city of Tecate, including the provision of land reserves for future uses and the compatibility and characteristics of the environment in the urban area. The plan includes a section for current conditions and challenges, and a section for land use strategies.

The ESJ Wind Project requires a land use zoning permit from the municipality of Tecate. The zoning permit process includes review of the project for consistency with state and local plans and regulations described above.

1.2.2 Mexican Permits and Approvals

The ESJ Wind Project facilities triggered environmental reviews and project approvals by a number of agencies, principally an environmental review and permit by SEMARNAT, a change in forestry land use permit by SEMARNAT, a CRE (Comisión Reguladora de Energía) permit for export of power to the US, and a land use zoning permit by the municipality of Tecate. These reviews and permits are discussed in detail below. Additional permits and approvals required for the project are summarized in **Table 1**, Mexican Permits and Approvals, at the end of this section.

SEMARNAT is the federal agency responsible for environmental review and approval of the ESJ Wind Project. SEMARNAT is roughly equivalent to the federal Environmental Protection Agency (EPA) in the United States. A *Manifestación de Impacto Ambiental* (MIA; Environmental Impact Manifest) was prepared for the ESJ Wind Project. The MIA is roughly equivalent to an Environmental Impact Statement in the US. The MIA required comprehensive analysis and study of potential environmental and socioeconomic issues associated with the project, as well as an analysis demonstrating compliance with Mexican laws. The MIA process also included an extensive public involvement component, including notices published in the newspaper and mailed to interested parties, a public hearing, and opportunity to comment. SEMARNAT issued its permit for the ESJ Wind Project in 2010. A modification to that authorization was granted on March 15, 2011.

SEMARNAT's review of the ESJ Wind Project included evaluation of the following resources:

- Agricultural and Soil;
- Air Quality;
- Biological Resources;

- Cultural Resources;
- Geological Hazards;
- Land Use;
- Noise;
- Paleontological Resources;
- Public Health and Safety;
- Socioeconomics;
- Traffic and Transportation;
- Transmission System Safety and Nuisance;
- Visual Resources;
- Waste Management / Hazardous Materials Handling;
- Water Resources;
- Worker Safety; and
- Wildfire/Fire Safety.

During the MIA review, SEMARNAT evaluated potential impacts resulting from construction, operation, and abandonment of the facility. Prevention and mitigation measures were provided as appropriate and included requirements such as reforestation/replanting of certain impacted species and bird and bat monitoring. The MIA also required preparation of a number of plans that will be reviewed and approved by SEMARNAT. Chapter 4 of this report describes the plans that are being prepared, as well as the mitigations that were contained in the MIA.

Enforcement of all MIA conditions falls under the jurisdiction of the *Procuraduria Federal de Proteccion al Ambiente* (PROFEPA; Federal Environmental Attorney), an independent branch of SEMARNAT. Most reports of compliance with environmental regulation and permit terms and conditions must be presented both to SEMARNAT and PROFEPA. PROFEPA is entitled to perform verification visits to ensure compliance with all applicable environmental

regulations, as well as the terms and conditions of the environmental permits. If a project is noncompliant, PROFEPA may issue warnings or fines, depending on the severity of the noncompliance, and may terminate a project if there are continued violations of the regulation.

In addition to the MIA, a *Cambio de Uso de Suelo en Terrenos Forestales* permit (Change of Forestry Land Use permit) must be issued by the Baja California office of SEMARNAT, which is the local SEMARNAT office for the ESJ Wind Project. This federal permit authorizes the change of the environmental designation of the land from forested lands (which includes any natural undeveloped lands, not just forested lands) to other designations such as industrial and urban. lands. This permit includes similar mitigations to those included in the MIA to reduce impacts during construction.

A CRE permit must be obtained for export of power to the US. CRE reviews the project for conformance with Mexican legal requirements as they pertain to the generation, transmission, export, and import of electrical energy, and authorizes the construction and operation of electric generating and transmission facilities.

In addition to the federal permits described above, the municipality of Tecate must issue a zoning and land use permit and a construction permit. The zoning and land use permit provides confirmation that the project is consistent with applicable state and local plans and requirements.

1.2.3 US Permits and Approvals

The portion of the ESJ Wind Project in the US triggered federal, state, and local environmental reviews and project approvals. **Table 2**, US Permits and Approvals, describes the permits and approvals that will need to be obtained for the poles and transmission line on the US side of the border.

Table 1
Mexican Permits and Approvals

Agency	Project Being Permitted	Permit	Jurisdiction	Review
Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT) (EPA equivalent)	All Mexico-based facilities	*Manifestación de Impacto Ambiental* (MIA; Environmental Impact Manifest)	Authorizes the construction of facilities that may have an environmental impact	SEMARNAT conducts a comprehensive analysis of potential environmental and socioeconomic impacts associated with a project during construction, operation, and decommissioning of the facility (see Section 1.2.2, above, for a full listing of resources analyzed). Environmental mitigation must be provided as appropriate
SEMARNAT (Baja California local office)	Mexico-based Phase I facilities	*Estudio Técnico Justificativo para el Cambio de Uso de Suelo en Terrenos Forestales* (Change of Forestry Land Use)	Authorizes the change of use from forestry lands to other uses (i.e., industry, urban, etc.)	
Instituto Nacional de Antropología e Historia (INAH) (State Historic Preservation Office equivalent)	Mexico-based Phase I facilities	Clearance to construct the project	Preserves, protects, and promotes the prehistoric, archaeological, anthropological, historical, and paleontological heritage of Mexico	Because the project area contains known archeological sites, INAH must issue a clearance for the project prior to construction
Secretaría de Comunicaciones y Transportes (SCT) (Federal Aviation Administration/Department of Transportation/ Federal Communication Commission equivalent)	Mexico-based Phase I facilities	Approval of lighting and markings on structures over 60 meters Microwave Beam Path Clearance demonstrating that proposed structures would not interfere with existing microwave beam paths Federal Highway Access Permit for actions in federal right-of-way from the highway to the project site		

Table 1
Mexican Permits and Approvals

Agency	Project Being Permitted	Permit	Jurisdiction	Review
Comisión Reguladora de Energía (CRE) (Federal Energy Regulatory Commission [FERC]/Public Utilities Commission [PUC] equivalent)	Mexico-based electric generation and transmission facilities	Independent Energy Producer for Export Authorization	Authorizes the construction and operation of electric generating and transmission facilities as well as the import and export of energy to and from Mexico	CRE reviews the project for conformance with Mexican legal requirements as they pertain to the generation, transmission, export, and import of electrical energy. CRE must obtain an advisory opinion from the Comisión Federal de Electricidad (CFE; Federal Electricity Commission)
State of Baja California	Project-related road actions for Phase 1	MIA	Authorizes road development in the state	
Municipality of Tecate	Facilities located in Municipality of Tecate	Zoning & Land Use Permit and Construction Permit	Provides confirmation of compatibility of project with land use regulations allowed on the property. Issues construction permit	The Municipality will determine if the project is consistent with municipal and state zoning requirements

Table 2
US Permits and Approvals

Agency	Project Being Permitted	Permit	Jurisdiction	Review
Department of Energy (DOE)	ESJ Wind generator-tie line	Presidential Permit (National Environmental Policy Act [NEPA] review required)	Authorizes the construction and operation of electric transmission lines crossing the international border. Also regulates the import and export of electricity to and from the US.	DOE must review the environmental impacts of the project pursuant to NEPA. DOE will evaluate the direct environmental impacts of the generator-tie line as well as direct impacts accruing in the US associated with those portions of the project that are in Mexico (e.g., visual impacts from the wind turbines). DOE will also evaluate the impacts on the US electrical system of the importation and exportation of electrical energy to and from the project. The Draft EIS for the generator tie line was issued by the DOE in August 2010.
International Boundary and Water Commission/ Comision Internacional De Limites y Aguas		International Border Crossing Permit		
Federal Energy Regulatory Commission (FERC)		Approval of Large Generator Interconnection Agreement (LGIA)		
California Independent System Operator (CAISO)		Large Generator Interconnection Agreement	Authorizes connection of a project's electricity output to the CAISO grid	

Table 2
US Permits and Approvals

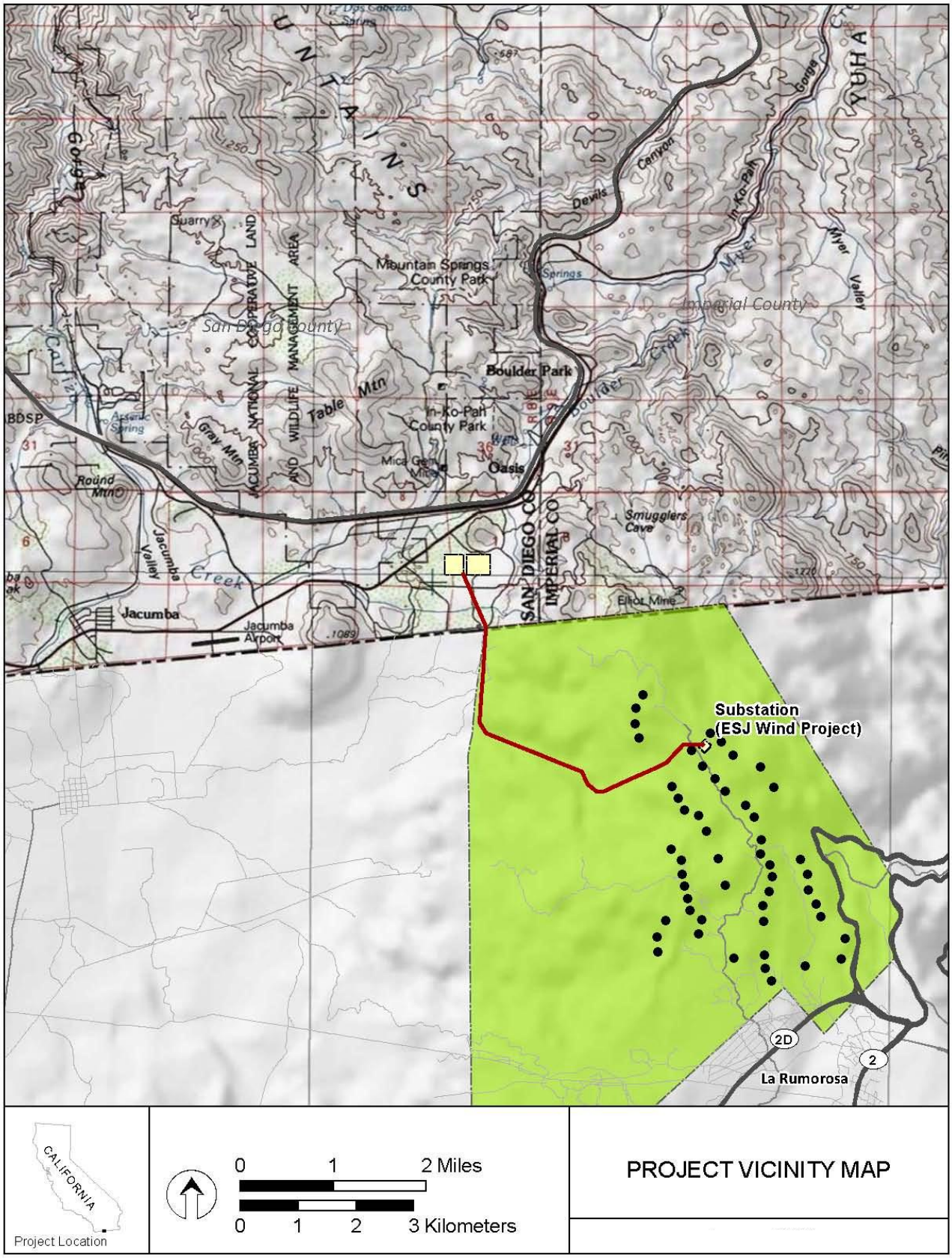
Agency	Project Being Permitted	Permit	Jurisdiction	Review
County of San Diego	ESJ Wind generator-tie line	Major Use Permit (California Environmental Quality Act [CEQA] review required)	Authorizes a project-specific change in the use allowed on the property	The County will review the generator-tie line to determine if the project is consistent with land use plan and zoning requirements. The County is expected to rely on the CEQA document (EIR) that has been prepared by the CPUC as part of its evaluation of the East County (ECO) Substation. The Final EIR was issued in October 2011. The Final EIR covers the US portion of the ESJ Wind Project and potential impacts in the US at the same level of detail as for the ECO Substation.

CHAPTER 2
PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The first phase of the proposed ESJ Wind Project would be developed near the town of La Rumorosa in the municipality of Tecate, Baja California, Mexico (see Figure 1 and **Figure 2**, Project Vicinity Map). The site is located between the following extreme coordinates: 32° 29' 51.436"N, 116° 07' 12.119"W and 32° 37' 15.617"N, 116° 04' 18.66"W. The project would be accessed from the Tecate-Mexicali section of Federal Highway #2, about one mile (two kilometers) from La Rumorosa. The project site covers approximately 486 acres (197 hectares), 215 acres (87 hectares) of which would be temporarily disturbed, and 272 acres (110 hectares) of which would be permanently disturbed. The project site contains several existing microwave towers, electrical distribution lines to service the microwave towers, temporary meteorological towers, and dirt access roads. The surrounding area is sparsely populated with small settlements and isolated houses.

The elevation of the project site ranges from approximately 3,200 feet (1,000 meters) to approximately 4,550 feet (1,387 meters). The terrain is steep and rocky, with granitic formations in the vicinity of La Rumorosa. There are few trees within the project footprint; rather, the project site is vegetated mainly with chaparral and other shrub species. The hot, dry climate is subject to drought.


Substation
(ESJ Wind Project)
Jacumba
Jacumba Airport
Boulder Park
In-Ko-Pah County Park
Mountain Springs County Park
Oasis
Smugglers Cave
Elliot Mine
La Rumorosa
2D
2
San Diego County
Imperial County
SAN DIEGO CO
IMPERIAL CO
CALIFORNIA
Project Location
0 1 2 Miles
0 1 2 3 Kilometers
PROJECT VICINITY MAP

The National Renewable Energy Laboratory (NREL) has developed a wind power density scale to classify the wind power of an area; this scale ranges from Wind Class 1 (Poor) to Wind Class 7 (Superb). A report published by NREL in 2004 identifies the La Rumorosa region's wind resource areas as ranging between Wind Classes 3 (Fair) and 7 (Superb) for wind power density. The proposed ESJ Wind Project would be located within designated Wind Classes 4, 5, 6, and 7. The La Rumorosa region has the second highest potential for wind energy in Mexico.

2.2 PROJECT DESCRIPTION

2.2.1 Project Features

Wind Turbine Generators

Phase I of the ESJ Wind Project would consist of up to 52 wind turbines, approximately 2.0 MW to 3.0 MW each, for a total capacity of 104 MW to 156 MW. Each wind turbine would be mounted on tubular steel towers. The hub height of the wind turbines would be approximately 80 to 85 meters high. Depending on the wind turbine selected, rotor diameter would be up to approximately 110 to 120 meters. This would result in a total wind turbine height of approximately 145 meters (481 feet). The electrical output from Phase I of the project will be sold to San Diego Gas & Electric pursuant to a power purchase agreement signed in April 2011 and approved by the California Public Utilities Commission on March 22, 2012.

Access roads

New access roads would be constructed and existing ones improved to provide access to all wind turbine locations, collector substation, and operations and maintenance building, as well as along the collector system and the generation-tie line.

Electrical Infrastructure

The electrical infrastructure for the site would consist of the intermediate voltage transformers located at each tower, an electrical collection system conveying the power from each wind turbine transformer to the collection

substation, and a generator-tie line conveying the power from the ESJ generating facility to the East County Substation (ECO Substation) in eastern San Diego County, as follows:

- Wind turbine transformer - Each wind turbine generator would be connected to an intermediate voltage transformer to step up the voltage to 34.5 kV.
- Overhead electricity collection system – The power generated by each of the individual turbines would be conveyed by electrical lines to the collection substation.
- Collection substation – The collection substation would collect all of the power generated by the facility and transform the incoming 34.5 kV power to 230 kV.
- Generator-tie line to the ECO Substation – Once the power has been transformed to 230 kV, it would be conveyed to the ECO Substation.
- ECO Substation – The ECO Substation is proposed and would be constructed, owned, and operated by San Diego Gas & Electric (SDG&E) and would be located east of Jacumba, California. The ECO Substation would loop into the Southwest Powerlink.
- Project operations and maintenance building – A project operations and maintenance building would be constructed on site.
- Three permanent meteorological data towers – Three permanent meteorological data towers would be installed on site. These towers would provide meteorological data that would be used for performance testing of the turbines, as well as during normal operations of the facility.
- Seven temporary meteorological data towers – There are currently seven meteorological data towers on site. These towers would be removed when the project is commissioned and are therefore temporary.

2.2.2 Construction

Construction of the ESJ Wind energy facility would require a number of stages; these are described below. Construction will take approximately 18 months to complete.

Clearing & grubbing, compaction, grading

Those areas where construction is to occur would be cleared and grubbed. This includes the clearing and removal of a minimal number of trees where infrastructure is to be located and the cutting and removal of brush, shrubs, debris, and vegetation so that it is approximately flush with the ground surface. Grubbing work includes the removal and disposal of oversized stumps and roots. All excavations made by clearing and grubbing activities would be backfilled with compacted earth or aggregate available on-site. Topsoil removed during clearing and grubbing would be stripped and stockpiled for re-spreading on-site.

Excavation, grading and compaction

Excavation involves the removal of earth to allow for the construction of roads and foundations. Mechanical excavation is the preferred method of excavation; however, blasting would be required to complete the work. Excavated materials that meet the specified requirements would be used for fills, embankments, and backfills. Appropriately sized rock material from excavations would be used as road aggregate. Remaining excess excavated materials would be scattered on the site, and would not be hauled off-site. Oversized material would be hauled to the crushing and screening operation on site for processing. Clean and uncontaminated fill material would be brought in from nearby sources.

Compaction of earthwork is critical for stability and to minimize eccentric loading upon or against any foundation or structure. Fill and backfill would be placed in lifts no greater than 15 centimeters loose thickness and compacted. Roads would be compacted to achieve the minimum compaction as stipulated by the turbine manufacturers.

Site grading for project roads, foundations, and pads would be designed to provide drainage to minimize impact on water quality due to runoff, to maintain slope stability, and to minimize disruptions to natural drainage patterns. Grading of site roads would meet or exceed minimum requirements for turning radius, roadway size, road grade, and design load specified by the turbine manufacturer.

Installation of temporary construction facilities

Temporary construction facilities would consist of temporary trailers (to serve as offices), sanitation facilities, parking, material and equipment storage, fuel storage, and other items needed through the construction period.

Electrical power from the CFE grid would serve the trailers. Chemical toilets would be installed for use during construction at the construction offices. Additionally, chemical toilets would be installed in certain locations of the construction site for construction workers to use. A commercial chemical toilet company would service the chemical toilets.

Upon completion of construction, these temporary facilities would be removed.

Building of a temporary concrete mixing plant, rock crushing, and screening facility

Since there are no nearby concrete plants, a temporary on-site concrete mixing plant to serve the site would need to be installed. Once construction of the facility is completed, this cement mixing plant would be dismantled.

Oversized rocks removed during excavation and grading would be taken to the rock crushing and screening area. Oversized rocks would be crushed and screened for use as fill or as road aggregate base on the site. Once construction of the project is completed, this rock crushing and screening operation would be dismantled.

Construction of roads

Road construction would consist of improvements of existing roads and construction of new roads. Required improvements to existing roads would

generally consist of widening the road, reducing the road's vertical grade, or recontouring of corners with insufficient radius.

The sequence for the construction of all roads generally would be as follows:

- Centerline would be staked.
- Temporary stabilization features such as silt fences, straw bales, and other controls at the limits of construction would be installed to protect neighboring vegetation from water run-off and to prevent equipment from operating outside of the area actually needed for construction.
- Clear and grub as needed.
- Separate and stockpile top soil for later use.
- Grade road to slope and design specifications.
- Compact sub-grade.
- For the access roads to the wind turbine pads, substation, and operations and maintenance building, install crushed aggregate all-weather road surface; for the access roads to the overhead collection poles, transmission line towers, and permanent meteorological data towers, the roads would be left in their native dirt surface.
- Install final stabilization/revegetation on the disturbed areas.
- Remove temporary stabilization measures once final stabilization measures are established.

Once the construction of road segments is complete, reclamation would be performed around the areas disturbed by the construction. Any exposed areas that are not covered by road materials would be revegetated using a seed mixture appropriate for the site.

Turbine Foundations

The wind turbine foundations would be designed and constructed in accordance with the provisions of the more stringent of the latest International Building Code or Mexican building requirements. Each wind turbine generator would be supported by a steel reinforced concrete foundation. The size and type of foundation required to support the turbine generator would be determined based on site-specific geotechnical conditions, wind patterns at the site, site access, material availability, and the size and type of turbine selected.

Regardless of foundation type, a pad area 65 by 65 meters would be cleared and grubbed. Blasting would be necessary to complete the turbine excavations. Excavation of the foundations would result in excess material, which would be used elsewhere on site.

Assembly of turbine tower sections, nacelles, and turbine blades

Wind turbine towers consist of 3 or 4 tapered tower sections (depending on manufacturer), one on top of the other. The total tower height is approximately 80 meters. The tower is made of rolled plate mild steel. The towers would be class I, rated to withstand winds of up to 120 mph and the winter conditions expected at the site. The external surface of the tower is smooth, providing no bird perches. Access to the interior of the tower would be via a door at the base.

Component installation such as tower sections, nacelle, and rotor blades would require the use of a heavy lift, lattice boom, crawler crane, and a medium lift helper crane. Depending on the construction schedule, either one or two heavy lift cranes would be used to assemble the turbine structures.

Assembly and installation of electrical poles and towers

The electricity generated by each individual wind turbine must be collected, transformed, and conveyed to the collection substation. The electrical energy from each wind turbine generator is conveyed through the electrical wires inside the turbine tower to the electrical transformer and switchgear located at the base of the tower. From the transformer exit, a buried cable conveys the

electricity to a riser, where the wire is elevated onto the overhead collection system poles.

Once the wind turbine power is delivered to the collection substation and the voltage is increased to 230 kV, the power would be conveyed to SDG&E's ECO Substation via a generator-tie line consisting of double circuit conductors on lattice towers. Lattice towers would be approximately 45 meters in height, with a maximum base of 9 by 9 meters. A poured concrete foundation would be required at each corner of the lattice tower.

Construction of electrical substation

The collection substation would receive the power from all of the turbines in one central place. The collection substation would be composed of the following elements:

- Control building
- 3 – circuit breakers
- Metering unit
- 34.5/230 kV 187 MVA step-up transformer
- Pad-mounted auxiliary transformer
- Switchgear
- SCADA system

Building the maintenance and operations building

An operations and maintenance building would be constructed at the temporary lay down site area. The building would contain tools, equipment, and spares to maintain and repair the on-site equipment. The building would also house the operations office and facilities for the project, where plant operators would oversee and control the operations of the wind farm.

2.2.3 Operations and Maintenance

Upon completion, approximately 6 to 8 full-time on-site employees would operate the project. Maintenance activities would include monitoring operations, securing the site, changing fluids on the turbines, replacing worn parts, and repairing broken equipment. Wastes resulting from wind facility maintenance typically include small amounts of gear oil and lubricating oils from yaw motors or transmission and glycol-based coolants. In general, and with the exception of major overhauls and repairs, maintenance and operations is a low-intensity activity.

2.2.4 Decommissioning/Abandonment

Wind turbines generally have a useful life of 20 years, though the estimated useful life of the project could be greater with replacement of equipment. Decommissioning/abandonment would include dismantling and removing wind turbine components, electrical equipment, and all project buildings and structures, and recycling or disposing of the materials at an approved disposal site. The concrete foundations of the wind turbines would be demolished to below natural grade and the exposed concrete surface would be covered with soil. Roads would be delineated for public or private use, and areas would be restored using native plant species.

CHAPTER 3
METHODOLOGY

The CEC Renewable Energy Portfolio Standard Guidebook, Fifth Edition ("the Guidebook"), issued in draft by the CEC in October 2011, provides for certification of renewable energy facilities after they are on line and delivering electricity. Certification requires that the project uses an eligible renewable technology such as wind. Certification of projects that are located outside of California or outside of the United States requires certain environmental analyses in addition to information concerning the generation technology.

The Guidebook also provides for precertification of projects prior to their going on line. The application for precertification and the Commission's certificate may cover required environmental analyses and allow these matters to be reviewed by the Commission prior to the construction and operation of the project. Including this analysis at the precertification stage provides the project investor and financing institutions some assurance prior to substantial investments that the final certification can be issued by the Commission once the project is on line.

The CEC issued precertification certificate number 60519D for the ESJ Wind Project (then named Rumorosa Wind Energy Project) on October 4, 2006 to a prior developer of the project. The certificate was then reissued on May 18, 2009 after the project ownership was acquired by Sempra Generation and the name changed to Energia Sierra Juarez Wind Energy Project, Phase I. As noted in the project description, the ESJ Wind Project will have its first point of

interconnection at the proposed new SDG&E ECO Substation, which will be located just north of the California-Mexico border. Because of this interconnection point, ESJ was classified as an "in-state" project under the applicable code provisions at the time of its precertification. The certificate issued on May 18, 2009 stated that "This facility is considered eligible as an in-state facility for the purpose of the California RPS program."

Senate Bill 1X 2 was passed by the California Legislature and signed by the Governor on April 12, 2011. The law became effective on December 10, 2011. Pursuant to certain Senate Bill 1X 2 revisions (see Public Resource Code Section 25741), ESJ is classified in a similar way as a project that is directly connected to a California Balancing Authority. For "out-of-state" projects (previous law) or those that do not first interconnect to a California Balancing Authority (Senate Bill 1X 2), the CEC is required to determine that the project will not violate an environmental standard in California. Since ESJ Wind is not an out-of-state project and does not have its first point of interconnection outside of a California Balancing Authority, it was not previously, and still is not, subject to this required finding.

However, Senate Bill 1X 2 did change another aspect of the eligibility determination with regard to environmental matters. For projects that are located outside of the US (even if their first point of interconnection is within the state), an additional, somewhat different, environmental review must be made. An additional criterion for certification of eligibility by the CEC is that the project will be constructed and operated in a manner that is as protective of the environment as a similar facility would be if it were located within the state. This criterion did not previously apply to the ESJ Wind Project under the previous law because it was an "in-state" project. Under the new law, this criterion is applied even if the project is in-state, or under the formulation in the new law, even if it first interconnects to a California Balancing Authority. Since this requirement did not apply at the time of the pre-certification of the ESJ Wind Project in 2009, it was not covered in that application. This report is intended to provide sufficient information to the CEC to make the required finding for the ESJ Wind Project under the amended provision of the statute in support of

a revised pre-certification.[1], This provision does not require the laws of Mexico to be the same or even similar to those of California, the United States, or a local jurisdiction in California. Thus, the statute does not require a comparison of Mexican and US LORS. It merely requires that the project be "developed and operated" in a manner that is as protective of the environment as a similar project located in California. Though the analysis must be undertaken by the Commission, the focus of such analysis is not how the project would be evaluated were it subject to the Commission's siting regulation and customary process.[2] The focus must therefore be on results, not method or a comparison of Mexican and US LORS. This approach is likely required in any event to avoid interference with interstate and foreign commerce or Mexican sovereignty.[3] Given these considerations, for each of the environmental topics typically reviewed in an analysis under CEQA or a CEC siting proceeding, the ESJ Wind Project will use the following methodology to provide information sufficient for the Commission to make the newly required finding. Chapter 4 of this report includes the following analyses:

[1] The Commission's notice of pre-certification dated May 18, 2009 states that "To maintain the certification status of this project, you must comply with all applicable requirements for certified or pre-certified facilities contained in the Renewables Portfolio Standard Eligibility Guidebook, 3rd Edition)". The project still complies with all such requirements and thus may still not be required to complete the out-of-country analysis. However, ESJ has chosen to prepare this analysis concerning environmental protection but does not waive any right it may have to qualify electricity delivered under the prior certification as eligible renewable electricity.

[2] This is not required under the requirements of SB X1 2. In any event, the CEC does not have siting jurisdiction over wind energy projects such as ESJ Wind Project.

[3] The statutory mandate to qualify electricity produced by a renewable technology based upon equivalency of project regulation in another jurisdiction may raise concerns with the US Constitution's Commerce Clause requirements. Requirements applied by the Air Resources Board under its AB32 Low Carbon Fuel Standard were held to be unlawful by a US District Court in *Rocky Mountain Farmers Union et al. v. Goldstene et al.*, decided on December 29, 2011, in part because of concerns about extraterritorial regulation. Therefore, ESJ does not waive any claims concerning the constitutionality of the requirements imposed under SB 1X 2 to qualify imported electricity by submitting this application.

1. Environmental Concerns

   Chapter 4 identifies the issues of concern that are typically analyzed pursuant to the CEQA Guidelines within each topical area.

2. Potential Areas of Impact

   Chapter 4 identifies aspects of the project that could cause environmental impacts in this topical area.

3. ESJ Analytical Requirements and Mitigations

   Chapter 4 discusses analyses and mitigations that are covered in the permitting processes applicable in Mexico.

4. Analysis

   Chapter 4 describes federal, state, and local Law Ordinances Regulations and Standards that would apply to a similar project if located in California. The local LORS will be those for Imperial County, the county directly north of the proposed wind generation facility. Chapter 4 then evaluates whether the ESJ Wind Project is being developed and would operate in a manner that is as protective of the environment as a similar facility located in California.

CHAPTER 4
ANALYSIS

4.1 INTRODUCTION

The analysis of whether the ESJ Wind Project will be developed and operated in a manner which is as protective of the environment as a similar project located in California is provided in this chapter. The resources evaluated include agriculture and soils, air quality, biological resources, cultural resources, geological hazards, land use and recreation, noise, public health and safety, socioeconomics, traffic and transportation, visual resources, waste management/hazardous materials handling, water resources, worker safety, and fire safety. These resource areas would be included in a CEQA analysis for a similar project in California, and were also included in the MIA report performed for the project in Mexico.

As described in Chapter 3, Methodology, each resource area analysis contains four sections: Environmental Concerns, Potential Areas of Impact, ESJ Analytical Requirements and Mitigations, and Description of LORS. A description of the information contained in these sections and the sources of that information is provided below.

Environmental Concerns. This section describes potential issues of environmental concern for the resource being analyzed, providing the framework against which to evaluate potential impacts. Development of these issues of concern included review of the CEQA checklist and applicability of such issues to the ESJ Wind Project and the project area.

Potential Areas of Impact. This section describes the existing conditions of the project area to provide context for the impact analysis. Existing conditions information was developed from the MIA, as well as from publically available Web sites and from discussions with project staff with knowledge of the project area to supplement information contained in the MIA.

Following the discussion of existing conditions is a discussion of the types of impacts that could result from development of the ESJ Wind Project, including identification of potential impacts prior to mitigation and any residual impacts that would remain after mitigation is implemented. The primary sources of information on potential impacts were professional judgment on the types of impacts typically associated with wind energy development and the MIA for impacts specific to the ESJ Wind Project.

The MIA, which is included as an attachment to this report, identified potential impacts associated with each activity that would occur during construction, operation, and decommissioning of the ESJ Wind Project, and assigned a numerical value to each impact by considering a number of weighted factors such as intensity, spatial extent (localized or widespread), temporal extent (short or long term), persistence (temporary or permanent), type of impact (direct, indirect, or cumulative), reversibility, recoverability, and other factors. The numeric value determined the level of impact as negligible, moderate, severe, or critical and also whether the impact was beneficial or adverse. Mitigations were required for all adverse impacts identified as moderate, severe, or critical, and the MIA then determined whether application of the mitigations would reduce identified impacts to less than moderate levels.

ESJ Analytical Requirements and Mitigations. This section of the analysis identifies the mitigations that will be undertaken to prevent, minimize, or compensate for impacts on the resource identified as moderate, severe, or critical in the MIA. These mitigations are required to be implemented as terms and conditions of the environmental permit for the ESJ Wind Project. In addition, plans required in the MIA are identified where that plan will contain mitigation, monitoring, compensation, or measures similar to best management practices to prevent, reduce, or compensate for an impact on that resource.

These plans, and their general content, are summarized in **Table 3**, Required Plans. These plans must be submitted to and approved by SEMARNAT at the project development phase identified in the table.

Table 3
Required Plans

AVIAN AND BAT MONITORING PLAN	
Submittal Deadline	Before the start of site preparation and construction
Objectives	Carry out field studies to monitor bird and bat species and their abundance, density, and flight patterns. Consideration will be given to the type of fauna present in the area during site preparation, construction, operation, and maintenance. Four primary zones will be determined: 1) nucleus, 2) nesting, 3) reproduction, and 4) migration to take any measures necessary to avoid them and protect birds and bats. Special attention will be given to those species protected under NOM-059-SEMARNAT-2001. • Monitoring will be carried out for a period of no less than a year and it will be completed before the start of site preparation.[4] A follow-up monitoring plan will be carried out for a period of no less than a year after operations begin. Monitoring will be conducted within the following areas of occupation: 1) site preparation and construction; and 2) operation and maintenance During the Operation and Maintenance stage with emphasis on the operation and maintenance area: • Carry out field studies to monitor species of birds and bats, their abundance, and flight patterns • Understand at what level wind turbines, meteorological towers, and transmission lines affect birds and bats within the area of operation and maintenance, including studies on collisions and mortalities caused by the latter • Results on collisions of birds and bats obtained from the follow-up monitoring plan that would be carried out after operations begin will be used to determine any measures implemented. These measures will be managed accordingly to diminish and or avoid any effect on the organisms • All personnel will be briefed on the sensitivity and care of the fauna, especially those protected under NOM-059-SEMARNAT-2001

[4] Pre-construction bird and bat monitoring has been completed and is described in Section 4.3.

Table 3
Required Plans

STUDY, RESCUE, AND PROTECTION OF FAUNA PLAN STUDY	
Submittal Deadline	Before the start of site preparation and construction
Objectives	Studies- Carry out field studies to determine the type of fauna (during nesting and reproduction) that would be present within the areas during site preparation and construction and during operation and maintenance. These studies will help minimize and/or avoid any impacts to any organisms. Emphasis will be given to those species protected under the NOM-059-SEMARNAT-2001. [5] Rescue of Fauna- Identify and develop methods to rescue those organisms that would be present within site preparation and construction areas and operation and maintenance areas. Emphasis will be given to those species protected under NOM-059-SEMARNAT-2011. Methods may include encouraging abandonment of the area for quick-moving species and relocating slower-moving species. Protection- 1) Identify any measures that could be used to protect fauna. These measures may include educating all personnel so they can identify any prevalent species, especially those protected under NOM-059-SEMARNAT-2001, and alert the corresponding authorities who can properly handle the organism. 2) Identify areas that animals may be using for protection and when at all possible protect these areas with flagging or security.
RESCUE AND PROTECTION OF FLORA AND REHABILITATION PLAN	
Submittal Deadline	Before the start of site preparation and construction
Objectives	Studies - Carry out field studies to determine the type of flora that would be present within the areas during site preparation and construction and during operation and maintenance. These studies will help minimize and/or avoid any impacts. Emphasis will be given to those species protected under NOM-059-SEMARNAT-2001. Protection - Identify any measures of protection that could be used to protect the flora during the stages of site preparation and construction, especially those protected under NOM-059-SEMARNAT-2001. These measures may include: • Educating all personnel so that they understand measures to protect flora, especially flora protected under NOM-059-SEMARNAT-2001 • Educating all personnel so that they may be able to identify any prevalent species, especially those protected under NOM-059-SEMARNAT-2001, so that they may alert the corresponding authorities that can properly handle the plant

[5] Pre-construction fauna studies have been completed.

Table 3
Required Plans

	Rehabilitation - The site preparation and construction area will be restored upon completion of t activities. This restoration will include the transplant of rescued species within the site preparation and construction area as well as monitoring said restoration for the duration of one year. This will allow the evaluation the effectiveness of the program and enable any adjustments to be made for future phases of the project.
CONSTRUCTION, OPERATION AND MANAGEMENT SUPPORT PLAN	
Submittal Deadline	Before the start of site preparation and construction
Objectives	Generate guidelines to minimize and avoid impacts during site preparation and construction that were not considered significant, such as: atmospheric contamination, waste water, labor regulations, security, and health. Educate all personnel on the sensitivity and care of the flora and fauna, especially those species under protection of NOM-059-SEMARNAT-2001. Special attention will be given to 1) bodies of water, and 2) sites of archeological importance. Prior to site preparation and construction: • The site preparation and construction areas and the operation and maintenance areas will not obstruct any natural creeks or flood-prone areas. The activities will not create artificial bodies of water or new flood-prone areas • The project will ensure that any sites of archeological importance will be protected. Any undiscovered resources discovered during construction will result in work stoppage of that area and notification of the discovery to INAH
WASTE (RESIDUAL) MANAGEMENT PLAN	
Submittal Deadline	Before the start of site preparation and construction
Objectives	The general characteristics of the Waste Management Plan consist of: • Methods to control, manage, temporarily store, and transport all waste generated by the project and to protect and dispose of them under the official Mexican laws, in appropriate and authorizes disposal sites • Minimize generation of waste • Separation of waste to facilitate their use • Establish protocols for periodic collection of waste The general characteristics of the Waste Management Plan and its subprograms are: • Authorized providers and frequency of collections will be identified

Table 3
Required Plans

	• The frequency at which forms need to be filled out according to applicable law in Baja California will be established • Temporary storage of waste and maintenance of these areas will be established Waste Management Plan- Domestic solids and liquids • Store/protect domestic solid and liquid waste properly until they are collected • Avoid attracting fauna to the waste Waste Management Plan- Hazards • Manage and control hazardous waste (i.e., oils) according to the current laws regarding hazardous waste • Evaluate types of hazardous waste to minimize their production, especially those that are not recyclable • Exercise caution to avoid risk of spills and/or fire • Identify areas for proper temporary storage • The Annual Regulation Code will be filled out in compliance with current laws Waste Management Plan- Special Management • In accordance with current laws, manage and control waste that requires special management during the construction, dismantling, and demolition stage.
FIRE HAZARD PLAN	
Submittal Deadline	Before the start of site preparation and construction
Objectives	The plan will be in compliance with the General Law of the Development of Sustainable Forests.[6] The plan would include preventive actions to avoid and contain fires within ESJ Wind Project area and surrounding areas that may affect the facilities, identify any actions that may affect the facilities in case of a fire, and identify the source of any fires.
EROSION AND SEDIMENTATION CONTROL PLAN	
Submittal Deadline	Before the start of site preparation and construction
Objectives	Develop a plan that defines and identifies measures to control erosion and sedimentation on areas affected by the project. The Erosion and Sedimentation Control Plan will address the identification of the measures of control, ground stabilization, and run-off control.

[6] Described in Section 1.2.1, above.

Table 3
Required Plans

COMPENSATION OF AREAS DURING THE OPERATION AND MAINTENANCE PLAN	
Submittal Deadline	Before the start of operation and maintenance
	This plan may include the consultation with proprietors and ejidatarios within the project areas, as well as other relevant parties. The Compensation Plan presented to SEMARNAT aims at reforesting an area three times the one affected by the installed infrastructure. The general goals of the plan are: 1) to ensure that species identified as protected are removed before site preparation and construction and reintroduced once these works are finished; 2) to ensure that reforestation is done with native species; and 3) to ensure the creation of adequate environmental conditions so that all functional groups that provide stability to the ecosystem are duly represented. The specific goals are: 1) design and describe reforestation strategies for an area at least three times the size of the one affected; 2) identify the native species more prone to use for reforestation actions; and 3) establish adequate techniques for species propagation or identify a greenhouse where the species will be obtained. Endemic protected species such as the California Juniper, singleleaf pinyon and parry pinyon would be saved. Species for reforestation should be: 1) native; 2) preferably of proven success in reforestation in the region; 3) plague and disease resistant; 4) present no limits to the availability of seeds; and 5) have viability to be reproduced in a greenhouse.
RECLAMATION (DECOMMISSIONING/ABANDONMENT) PLAN	
Submittal Deadline	180 days prior to start of reclamation within each area to be reclaimed.
Objectives	Develop a plan that will minimize and avoid impacts during the reclamation stage. This plan may include the following steps: • Disconnect from the electric grid • Dismantle all wind turbines and remove components • Evaluate possible recycling of materials and/or the disposal site • Demolish concrete foundations of wind turbines to 50 cm below ground level and cover with dirt. Demolish concrete buildings and reclaim these areas with native plant species • In the case of the concrete foundations, the covered ground will be sifted to prevent the creation of impermeable areas

Description of LORS. The final section for each resource area identifies the federal, state, and local LORs that would apply to a similar facility's development and operation in California. The local LORS selected for analysis are those of Imperial County, the county directly north of the proposed ESJ Wind Project. The LORS analysis discusses whether the ESJ Wind Project is being developed and would be operated in a manner that is as protective of the environment as a similar facility located in California.

4.2 AGRICULTURE AND SOILS

4.2.1 Environmental Concerns

Environmental concerns for soil resources relate to whether the project would result in substantial soil erosion or the loss of topsoil and whether there are known contaminated soils in the project area.

Environmental concerns for agriculture resources relate to whether the project would result in conversion of unique farmland to a non-agricultural use.

4.2.2 Potential Areas of Impact

Existing conditions for soil and agriculture resources in the proposed project area are described in Chapter IV.2.1.3 of the MIA report. The project area terrain is classified as 1) steep hills, 2) steep hills with plains, and 3) steep hills with dips and plains. The proposed project area is composed primarily of two soil types, Lithosols and Regosols. These soil types are characterized as being thick with medium grain and having poor organic matter and nutrients. According to the geographic atlas published by SEMARNAT (2006) using data from 2002, the project area has been determined to be "without apparent degradation" (its natural characteristics have not been altered). The soils in the proposed project area are susceptible to erosion due to a lack of sufficient uniform vegetation cover. The arid, windy environment creates favorable conditions for soil erosion.

There is no evidence of soil contamination on the proposed project site. There are no farmlands on the ESJ Wind project site. Limited farming may occur on small settlements in the vicinity of the project site.

Soil erosion is a common impact associated with construction, particularly on areas of steeper terrain and containing certain soil types. Chapter V of the MIA report identified 20 potential adverse impacts, of which 7 would be considered moderate and 2 would be considered severe. The analysis identified moderate impacts on terrain from blasting; mechanical excavation; and cutting, filling, compaction, and leveling. The analysis identified moderate impacts on erosion from clearing and cutting away vegetation; rehabilitation, enlargement, and construction of roads; mechanical excavation; and cutting, filling, compaction, and leveling. The analysis identified severe impacts on soil type from mechanical excavation and from cutting, filling, compaction, and leveling.

After applying mitigation to the adverse impacts that would be moderate or severe, four impacts would continue to be moderate and two would be reduced from severe to moderate. Four would become less than moderate. The analysis identified moderate residual impacts on soil type from mechanical excavation and from cutting, filling, compaction, and leveling. The analysis identified moderate residual impacts on terrain from blasting; mechanical excavation; and cutting, filling, compaction, and leveling.

4.2.3 ESJ Analytical Requirements and Mitigations

The following plans, described in Table 3, will include measures that avoid or minimize impacts on soil resources:

- Erosion and Sediment Control Plan
- Construction, Operation, and Maintenance Support Plan
- Waste Management Plan

Mitigation measures will include the following:

- Careful planning will be given to areas that need to be stripped of vegetation to minimize ground disturbance.
- Access road placement will minimize acreage affected.
- Revegetation of disturbed ground will be undertaken as soon as possible.

- The ground will be stabilized with natural coconut and/or agave fibers; netting and rocks; rubber (tires); or other materials to control erosion.
- Existing roads will be used and restored, where possible, to reduce impacts caused by creating new roads.
- The project will use locally sourced aggregate (gravel) on access roads that go through populated areas to minimize dust.
- Water will be used to control dust.
- Activities associated with explosives will be limited to designated zones.
- Retention barriers will be used.
- Geological studies will be undertaken to avoid excavation in areas where placing wind turbines may not be feasible.
- Unused soil and rocks obtained from excavation sites will be used in those areas that contain the same soil type.
- To prevent erosion around the excavation site, retention barriers such as netting, sand bags, tarps, agave or coconut fibers, or local natural fibers will be used.
- Project facilities will be sited to follow the natural terrain where possible, reducing unnecessary impacts.
- Soil not used to backfill excavation sites will be used in surrounding areas that contain the same soil type.
- Waste materials such as concrete that require special management will be placed in designated confined sites.
- Retention barriers will be used in areas that require clear cutting if clear cutting cannot be avoided.

4.2.4 Description of LORS

Federal

Farmland Protection Policy Act of 1981

Pursuant to the Farmland Protection Policy Act of 1981, the Secretary of Agriculture is directed to establish and carry out a program to "minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland."

There are no farmlands on the project site; therefore, the proposed project would not result in the conversion of farmland to nonagricultural uses.

State

California Land Conservation Act of 1965

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Local governments receive an annual subvention of foregone property tax revenues from the state via the Open Space Subvention Act of 1971.

There are no farmlands on the project site; therefore, there are no farmlands to be affected by the proposed project.

California Environmental Quality Act

CEQA sets statewide policies that provide the framework by which California public agencies assess environmental impacts and consequences of projects. Under CEQA, a lead agency determines whether a project would cause a significant environmental impact on the environment. The lead agency may propose mitigation measures to reduce significant impacts.

The ESJ Wind Project underwent a similar analysis to assess the environmental impacts associated with the ESJ Wind Project. The MIA assessed the potential for impacts on environmental resources including agriculture and soils, determined that impacts would occur, and provided mitigation measures to prevent or minimize the level of these impacts. Because the project underwent a review such as that required by CEQA, the ESJ Wind Project would be as protective of the environment as a similar project built in California.

Local

Imperial County General Plan

The Conservation and Open Space Element of the General Plan (Imperial County 1993) directs the County to evaluate the compatibility of proposed development projects with the preservation of soil and agricultural soil resources. The plan sets forth the following goal and objectives for the conservation and preservation of agricultural resources:

- Goal 4: The County will actively conserve and maintain contiguous farmlands and prime soil areas to maintain economic vitality and the unique lifestyle of the Imperial Valley.
    - Objective 4.1 Encourage sound agricultural practices.
    - Objective 4.2 Control and prevent soil erosion when possible.
    - Objective 4.3 Support the efforts of the Imperial Valley Drainage Advisory Committee by encouraging the conformance to their criteria for the reclamation of salt-affected land.

The Agricultural Element (Imperial County 1996) also contains goals and objectives related to preserving designated prime and important farmland (Goal 1), avoiding checkerboarding of agricultural and non-agricultural lands (Goal 2), avoiding conflicting uses in farming areas (Goal 3), assuring the current and future availability of irrigation water (Goal 4), and improving irrigation runoff (Goal 5), among others. In addition, the Land Use Element (Imperial County 2008) directs the preservation of commercial agriculture as a prime economic force (Goal 1).

Because the ESJ Wind Project has incorporated measures into the project to prevent or minimize soil erosion associated with construction and operation of the facility, the project would be constructed and operated in a manner as protective of soil resources as a similar facility located within California.

4.3 AIR QUALITY

4.3.1 Environmental Concerns

Environmental concerns for air quality relate to whether the project would result in the following:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a considerable net increase of any criteria pollutant for which the project area is in nonattainment for a federal or state standard;
- Expose sensitive receptors to substantial concentrations or criteria or toxic pollutants; or
- Create objectionable odors affecting a substantial number of people.

4.3.2 Potential Areas of Impact

Existing air quality conditions within the proposed project area are described in Chapter IV.2.1.1.8 in the MIA report. As described in this report, the California-Mexico Border Program monitors air quality near the California-Mexico border, including the air basins of Tijuana and Mexicali. Because of low population and emission sources on both sides of the border, there are no air monitoring stations near the proposed project area. There are six air monitoring stations in the metropolitan area of Tijuana, the nearest of which is approximately 50 miles west of the proposed project site, and four monitoring stations in the metropolitan area of Mexicali, the nearest of which is approximately 30 miles east of the proposed project site. There is also one monitoring station in

Tecate, approximately 30 miles west of the proposed project site. Data from the stations in Tijuana, Tecate, and Mexicali indicate that the primary air quality issues are ozone and particulates less than 10 microns (PM_{10}). There are no inhabited uses on the project site, and the surrounding area is lightly settled. The closest residences to the project construction area would be approximately 4 kilometers (2.5 miles) away.

Air quality impacts would occur almost entirely during construction of the proposed wind facility. The proposed project would result in temporary emissions of criteria air pollutants, greenhouse gas emissions, and small amounts of hazardous air pollutants from operation of construction equipment, tractor-trailers bringing in and moving equipment, and construction personnel vehicles. Site grading associated with access roads and clearing of wind turbine sites and blasting would generate localized fugitive dust emissions. Construction-related emissions would be temporary and short term. Operation of the proposed project would have a much lower level of impact and would generally consist of personnel vehicles moving about the site, as well as the occasional road maintenance activity. Dismantling and demolition of the facility at the end of its life would have similar impacts as those that would occur during construction.

Chapter V of the MIA report identified 22 adverse impacts. None of the impacts were identified as severe or critical. Two of the impacts were considered moderate, including impacts on air quality from blasting and impacts on air quality from dismantling and demolition. After applying mitigation to the two moderate adverse impacts, both would become less than moderate. The MIA report also identified a beneficial impact of reducing emissions of greenhouse gases through implementation of the proposed renewable energy project.

4.3.3 ESJ Analytical Requirements and Mitigations

The following plans, described in Table 3, will include measures that avoid or minimize air quality impacts:

- Construction, Operation, and Maintenance Support Plan
- Erosion and Sediment Control Plan

- Reclamation Plan

Mitigation measures will include the following:

- All vehicles, equipment, and machinery will be maintained following NOM-041-SEMARNAT-06 (maximum allowable emissions of pollutant gases from vehicles that use gasoline as fuel) and NOM-045-SEMARNAT-1996 (maximum allowable smoke opacity from vehicles that use diesel fuel).

- During explosive activities, all necessary protective gear will be worn to protect workers from particulates; notification of blasting will be given to those living in the surrounding areas; and containment barriers will be used.

- Any type of equipment that generates emissions into the atmosphere will be subject to preventive and corrective measures.
- Roads will be watered or sprayed with a dust palliative to reduce fugitive dust emissions.
- Speed limits will be established to reduce the creation of dust.

4.3.4 Description of LORS

Federal

Federal Clean Air Act

The Federal Clean Air Act requires any new major stationary sources of air pollution and any major modifications to major stationary sources to obtain an air pollution permit before commencing construction. This process is known as New Source Review (NSR). Its requirements differ depending on the attainment status of the area where the major facility is to be located. Prevention of Significant Deterioration (PSD) requirements apply in areas that are in attainment of the national ambient air quality standards. The nonattainment area NSR requirements apply to areas that have not been able to demonstrate compliance with national ambient air quality standards. The entire program, including both PSD and Nonattainment NSR permit reviews, is referred to as the federal NSR program.

Title V of the federal Clean Air Act requires states to implement and administer an operating permit program to ensure that large sources operate in compliance with the requirements included in the Code of Federal Regulations 40, part 70. A Title V permit contains all of the requirements specified in different air quality regulations which affect an individual project.

The proposed project would not qualify as a major stationary source of air pollution and would therefore not be subject to NSR or PSD reviews, or Title V requirements.

State

California State Health and Safety Code

The California State Health and Safety Code, Section 41700, requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, response, health, or safety of any such person or the public, or which causes, or have a natural tendency to cause, injury or damage to business or property."

The state's Air Resources Board (ARB) is responsible for the state-level ambient air quality standards, which are, in general, more stringent than the national ambient air quality standards.

As identified in the MIA report, the proposed project would have moderate impacts during construction blasting and during abandonment activities. Given the two-mile distance from the nearest residence and the mitigation measures described under ESJ Analytical Requirements and Mitigations, above, these impacts would be mitigated to less than moderate levels.

The proposed project would have no direct air emissions associated with operation of wind turbines. Minor air emissions would be associated with solvent/lubricant use, travel on unpaved roads, and maintenance vehicle and equipment use. Temporary construction-related emissions would be minimized as required by the MIA. As a result, the project would be developed and

operated in a manner as protective of air quality as a similar facility located in California.

Global Warming Solutions Act and Emission Performance Standards

In 2006, Assembly Bill 32 (Global Warming Solutions Act) and Senate Bill 1368 (Emission Performance Standards) were passed, helping to establish standards to reduce greenhouse gases within California. Under the Global Warming Solutions Act, limits for greenhouse gas emissions were set that must be achieved by 2020. The ARB was given direction to identify early steps to reduce greenhouse gases within the state and to develop a scoping plan that sets out how best to achieve the 2020 targets. This Scoping Plan was approved in 2008, and early actions to reduce greenhouse gas emissions took effect in 2010. The Scoping Plan calls for increased utilization of renewable sources of electricity generation. Senate Bill 1368 was passed into law in 2006, and this law limits long-term investment in baseload generation by California's utilities to facilities that meet an emissions performance standard established by the California Energy Commission and the California Public Utilities Commission. Among the elements of the regulations, the CEC has established a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 pounds carbon dioxide (CO_2) per megawatt-hour.

The proposed project would have no direct emissions of CO_2 associated with operation of wind turbines and minimal CO_2 emissions associated with maintenance activities. The project would contribute non-emitting renewable electricity to reduce overall system emissions of greenhouse gases; therefore, the proposed project would contribute to the goals and meet the emission performance standards of Assembly Bill 32 and Senate Bill 1368 to the same extent as a wind facility sited in California.

Local

Imperial County Air Pollution Control District Rules and Regulations

The Imperial County Air Pollution Control District (APCD) has primary responsibility for regulating stationary sources of air pollution situated within its jurisdictional boundaries. It is also responsible for managing and permitting

existing, new, and modified sources of air emissions within the County. Rule 207, New and Modified Stationary Source Review, establishes the stationary source requirements that must be met to obtain a Permit to Operate, including the requirement to comply with best available control technology, and provide emission offsets for emission increases above 137 pounds per day for reactive organic gases, nitrogen oxide, sulfur oxide, PM_{10}, and carbon monoxide.

The ESJ Wind Project would not qualify as a major stationary source of air pollution and would therefore not be subject to NSR review.

Imperial County Air Pollution Control District CEQA Guidelines for Air Quality

CEQA sets statewide policies that provide the framework by which California public agencies assess environmental impacts and consequences of projects. Where available, air quality significance criteria established by land use agencies are sometimes used to make a CEQA determination of significance for air quality impacts. The Imperial County APCD, the applicable air district selected for the LORS analysis, describes thresholds of significance for project operations in its CEQA Air Quality Handbook, last updated in November 2007 (Imperial County APCD 2007, Table 1, page 9). Depending upon the CEQA determination of significance, project proponents may be required to implement standard mitigation measures or discretionary mitigation measures to reduce the level of emissions associated with a proposed project.

Similar to CEQA, Mexican law required an assessment of impacts, including air quality impacts, associated with the ESJ Wind Project. The MIA assessed the potential for impacts on air quality, determined that adverse impacts would occur, determined the significance of the impacts, and identified mitigation measures to reduce the impacts to an acceptable level. These mitigation measures are included as terms and conditions of the environmental permit. Given the identification of air quality impacts and the requirement for mitigation in the MIA report, the ESJ Wind Project would be consistent with the goals of CEQA to protect air quality in the project region. The project would therefore be constructed and operated in a manner as protective of air quality as a similar project built in California.

4.4 BIOLOGICAL RESOURCES

4.4.1 Environmental Concerns

Vegetation

Environmental concerns for vegetation relate to whether the project would remove, destroy, disturb, or injure native vegetation, including wetland vegetation.

Wildlife

Environmental concerns for wildlife relate to whether the project would cause harm, harassment, disturbance, injury, or mortality to wildlife species, including migratory birds, bats, or aquatic species. In addition, impacts would occur if the project would impede wildlife migration routes, remove, disturb, or degrade wildlife nursery sites, or conflict with any Habitat Conservation Plan or other wildlife protection plans.

Special Status Species

Environmental concerns for special status species relate to whether the project would cause take, harm, harassment, disturbance, injury, or mortality to special status species, including rare plants, golden eagle, and California condor.

4.4.2 Potential Areas of Impact

Vegetation

Existing conditions for vegetation within the proposed project area are described in Chapter IV.2.2.1 of the MIA report. Vegetation can be characterized as chaparral, with coastal sage scrub oak (*Quercus dumosa*), chamise (*Adenostoma fasciculatum*), red shank (*A. sparsifolium*), Jeffrey pine (*Pinus jeffreyi*), and desert ceanothus (*Ceanothus greggii* var. *perplexans*) as common species. During surveys of the ESJ Phase I project area, biologists observed 28 species of vegetation. The proposed project would remove native vegetation, although there are no sensitive vegetation communities on the project site, including wetlands. As such, impacts on vegetation and wetland resources are expected to be minimal and will be excluded from further consideration.

Chapter V of the MIA report identified 33 adverse impacts, of which 1 would be considered severe; severe impacts would occur on flora populations from clearing and cutting away vegetation. After applying mitigation, impacts on flora populations would become moderate.

Wildlife

Existing conditions for wildlife within the proposed project area are described in Chapter IV.2.2.2 of the MIA report. Species present within the proposed project area are considered to have general distribution throughout the region. A low proportion of endemic birds was observed during field surveys, with one quasi-endemic species, the California gnatcatcher (*Polioptila californica*), observed. Within the proposed ESJ Phase I project area, there are 238 species of birds and 21 species of bats reported. There are 47 species of mammals and 60 species of amphibians and reptiles reported for the area.

The proposed project would remove habitat for a number of wildlife species, including nesting habitat for some bird species and foraging habitat for birds and bats. There is no potential bat habitat (e.g., caves, mines) or habitat for aquatic species within the project site. Noise during project construction could disturb wildlife and cause them to avoid the area during construction. Species would likely recolonize the site during project operation. Wildlife, particularly smaller or slow moving species, could be injured or killed by collisions with vehicles or heavy equipment used on-site during construction. Birds and bats could be injured or killed by collisions with turbines or transmission lines during project operation.

There are no known nursery sites within the proposed project area. In addition, there are no known avian migration corridors or riparian corridors associated with the project site or surrounding vicinity. There are no applicable Habitat Conservation Plans or other regional, local, or federal protection plans. As such, impacts on these resources are not expected and will be excluded from further consideration.

Chapter V of the MIA identified 42 adverse impacts, 11 of which would be considered moderate:

- The analysis identified moderate impacts on fauna diversity from turbine operation and operation of electrical installations.
- The analysis identified moderate impacts on fauna populations from clearing and cutting away of vegetation, mechanical excavation, turbine operation, and operation of electrical installations.
- The analysis identified moderate impacts on fauna distribution from clearing and cutting away vegetation, mechanical excavation, turbine operation, operation of electrical installations, and dismantling and demolition.

After applying mitigation to the 11 moderate adverse impacts, all 11 would become less than moderate.

Special Status Species

Existing conditions for special status species within the proposed project area are described in Chapter IV.2.2.2.1.3 of the MIA report. Within the proposed ESJ Phase I project area, 71 fauna species and 5 flora species were observed that fall under some protection status under NOM-0590-SEMARNAT-2001 (Mexican protected species list) and several international organizations (Convention on International Trade in Endangered Species [CITES], International Union for Conservation of Nature [IUCN], CPFF, and BENPA). NOM-0590-SEMARNAT-2001 assigns protected species to one of the following four risk status categories: 1) In danger of extinction; 2) threatened; 3) special protection; and 4) probably extinct in the wild. No nesting habitat for golden eagles is found on the project site, and one condor has been observed within the project site in six years. The closest condor nest is approximately 40 miles southeast of the project site, while the nearest eagle nest is approximately 25 miles west of the project site.

The types and nature of impacts would be similar to those described for wildlife. The proposed project would remove potential nesting, foraging, and cover habitat for protected species observed on-site, including foraging habitat for golden eagle and potentially for California condor.

Chapter V of the MIA report identified 18 adverse impacts on special status species, 4 of which would be considered moderate:

- The analysis identified moderate impacts on listed fauna from mechanical excavation, turbine operation, and operation of electrical installations.
- The analysis identified moderate impacts on listed flora from clearing and cutting away vegetation.

After applying mitigation to the 4 moderate adverse impacts, all 4 would become less than moderate.

4.4.3 ESJ Analytical Requirements and Mitigations

Pre-Project Surveys

One year of biological surveys has been conducted, with 300 days on the project site. Biological surveys characterized vegetation, investigated the presence of wetlands and aquatic species, recorded all observed wildlife, and surveyed and monitored for avian and bat species (Lieberman et al. 2011a; Lieberman et al. 2011b; *Instituto de Ecologia*, A.C. No Date). Protocols for these surveys were based upon the California Energy Commission and US Fish and Wildlife guidelines.

Three years of surveys and monitoring on golden eagles have been conducted at the project site by the San Diego Zoo Institute for Conservation Research. This research is ongoing (Lieberman et al. 2011a; Lieberman et al. 2011b).

Six years of surveys and monitoring on California condors have been conducted at the project site by the San Diego Zoo Institute for Conservation Research. This research is ongoing (Lieberman et al. 2011a; Lieberman et al. 2011b).

Mitigation

Wildlife

The following plans, described in Table 3, will include measures that avoid or minimize impacts on wildlife:

- Avian and Bat Species Monitoring Plan
- Study, Rescue, and Protection of Flora and Rehabilitation Plan
- Study, Rescue, and Protection of Fauna Plan
- Construction, Operation, and Maintenance Support Plan
- Reclamation Plan
- Fire Hazard Plan

Mitigation measures will include the following:

- Areas of exclusion will be established and adhered to.
- Areas of excavation will be verified to ensure that they do not occur within an area used for reproduction.
- Ground disturbance will only take place in areas designated for site preparation and construction and in areas designated for operation and maintenance.
- Speed limits will be obeyed to prevent dust emissions and to avoid injury to wildlife.
- To avoid attraction of birds, bats, and/or any species that may migrate at night, lighting will be restricted to that required under International Civil Aviation guidelines. This will limit interruption of the night landscape.
- A pre-construction study (updated fauna survey) was conducted to identify and confirm presence of terrestrial fauna in specific areas of the project site.
- A post-construction monitoring program will take place within the portion of the Phase I project area where the wind turbines will be located.
- All personnel involved in construction activities will be briefed and trained to handle and care for the flora and fauna, especially those

protected under NOM-059-SEMARNAT-2001 (Mexican protected species list).

- Access roads will be sprayed with water to control dust.
- Measures will be taken to ensure that no animals are present within the turbines and electrical equipment during dismantling and demolition activities.
- Areas of fauna movement will be identified and access to these areas will be limited.
- Project activities will be limited during any faunal gatherings. Security personnel will be patrolling the site 24 hours per day, 7 days per week, and they will report and record any findings related to fauna during their assignments.

The mitigation measures described for wildlife above would help to mitigate for impacts on avian and bat species. Chapter VI of the MIA report proposed the following additional mitigations specific to bird and bat species:

- Avian Power Line Interaction Committee guidelines (1994, 2006) will be followed.
- A post-construction avian and bat monitoring program will take place within the project area where the wind turbines will be located. Preventive measures included in the Avian and Bat Species Monitoring Plan as well as the Study, Rescue, and Protection of Fauna Plan will also be used for mitigation.
- Results from the Avian and Bat Monitoring Plan will be evaluated within different aspects of the ESJ Wind Project. These results will serve as a basis for further measures and/or modifications of any mitigation applied to future phases of the ESJ Wind Project.
- Once the results from the Bird and Bat Monitoring Plan have been evaluated:
  - Species of birds and bats that are vulnerable to being hit by the wind turbines, especially migratory perchers and any other

species protected under NOM-059-SEMARNAT-2001, will be identified.

- Specific seasons or times of day for such occurrences will be identified.
- Results from the Avian and Bat Monitoring Plan will allow modifications or continuation of any precautionary measures taken to prevent avian collisions with the wind turbines and/or meteorological towers. Special care will be given to disposal of wastes that would attract birds or bats.

- Following the Avian and Bat Monitoring Plan:
  - Conduct follow-up monitoring for no less than one year after operations begin.
  - Determine if bird and bat species, particularly those protected under NOM-059-SEMARNAT-2001, are being affected by the transmission lines.
  - Determine if there is a pattern with the timing of such occurrences (e.g., time of year, time of day).
  - Evaluate all the information gathered from the Avian and Bat Monitoring Plan to identify if there are patterns in any specific areas (e.g., electrocution or collisions in the case of transmission lines) and to further evaluate any measures that can be taken to reduce this impact.

The plans described above under Wildlife would also reduce impacts on avian and bat species.

Special Status Species

To mitigate impacts on threatened, endangered, and sensitive species, Chapter VI of the MIA report proposed the following mitigations:

- Conduct a pre-construction plant survey.

- All personnel involved in construction activities will be briefed and trained to handle and care for the flora and fauna, especially those protected under NOM-059-SEMANAT-2001.
- In case any personnel involved in construction activities comes across a species protected by NOM-059-SEMANAT-2001, they will notify personnel qualified and authorized to properly handle the individual.
- Identify any plant species present under the protection of NOM-059-SEMARNAT-2001 before any ground-breaking activities begin.
- Permanent land impacts will be compensated at a 3-to-1 mitigation ratio.
- For special status avian and bat species, including golden eagle and California condor, additional mitigation would be implemented, as described above under Avian and Bats.
- Coordination with the San Diego Zoo regarding golden eagles and California condors will continue, and condor movements will continue to be monitored.

The plans described above under Wildlife would also reduce impacts on special status species.

4.4.4 Description of LORS

Federal

Federal Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.), as amended, provides for the conservation of federally listed plant and animal species and their habitats. The ESA directs federal agencies to conserve listed species and imposes an affirmative duty on these agencies to ensure that their actions are not likely to jeopardize the existence of a listed species or destroy their habitat. The proposed project was determined to have moderate impacts on special status species, which would become less than moderate with implementation of mitigation measures. Mitigation measures would be similar to those required by

the ESA, such as compensating for permanent impacts at a 3-to-1 ratio and implementing a pre- and post-construction monitoring program. (The 3-to-1 compensation ratio is in addition to a compensation payment required under the Change of Forestry Land Use Permit.) Survey requirements applied to the ESJ Wind Project would be consistent with the US Fish and Wildlife Service Wind Energy Survey guidelines. As such, the proposed project would be developed and operated in a manner that is as protective of special status species as a similar facility located within California.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC 703) makes it unlawful to pursue, hunt, take, capture, kill, or possess any migratory bird or part, nest, or egg of such bird listed in wildlife protection treaties among the US, Great Britain (on behalf of Canada), Mexico, Japan, and the former Union of Soviet Socialist Republics. The current list of the 1,007 species covered by the MBTA, most recently revised in 2010, can be found in Title 50, CFR Section 10.13.

The ESJ Wind Project will be built and operated in accordance with U.S. Fish and Wildlife Wind Energy Guidelines and Avian Power Line Interaction Committee Guidelines and to otherwise mitigate the effects on migratory birds. As a result, this project would be as protective of migratory birds as a project built in California.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668) applies primarily to taking, hunting, and trading activities that involve bald or golden eagles. The act prohibits the "taking" of any individuals of these two species, as well as any part, nest, or egg. The term "take" as used in the act includes "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb."

The ESJ Wind Project will be built and operated so as to mitigate the effects on golden eagles, including continued monitoring of golden eagles in the region of the ESJ Wind Project. Pre-construction monitoring shows that no golden eagles nest on the Phase I site, and there is little use of the site by golden eagles. As a

result, this project would be constructed and operated in a manner that is as protective of the environment as a similar project located within California.

Executive Order 13112 – Invasive Species

Signed in 1999, Executive Order 13112 directs federal agencies to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. To do this, the executive order established the National Invasive Species Council; currently there are 13 departments and agencies on the council.

The ESJ Project will implement a Study, Rescue, and Protection of Flora and Rehabilitation Plan, which will include measures to reduce the likelihood for invasive species introduction and would require revegetation of disturbed areas with native species. As such, the ESJ Wind Project would seek to prevent the introduction of invasive species to the same extent as a project built within California.

Federal Noxious Weed Act of 1974, as amended

The Federal Noxious Weed Act of 1974 provides for the control and management of nonindigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or public health. The act prohibits importing or moving any noxious weeds identified by the regulation and allows for inspection and quarantine to prevent the spread of noxious weeds.

The ESJ Wind Project will implement a Study, Rescue, and Protection of Flora and Rehabilitation Plan, which will include measures to reduce the likelihood for invasive species and noxious weed introduction and will require revegetation of disturbed areas with native species. As such, the ESJ Wind Project would seek to prevent the introduction of invasive species and noxious weeds to the same extent as a project built within California.

State

California Environmental Quality Act

CEQA sets statewide policies that provide the framework by which California public agencies assess environmental impacts and consequences of projects.

The ESJ Wind Project would not result in unmitigated impacts on biological resources for construction or operations. The project will comply with the California Energy Commission's California Guidelines for Reducing Impacts on Birds and Bats from Wind Energy Development (2007), including monitoring requirements during pre- and post-construction. Given the absence of any unmitigated impacts on biological resources, the project is as consistent with the goals of CEQA as a similar project built in California.

California Endangered Species Act

The California Endangered Species Act (CESA), which is administered by the California Department of Fish and Game, is similar to the federal ESA. CESA prohibits the take of CESA-listed species unless specifically provided for under another state law. CESA does allow for incidental take associated with otherwise lawful development projects.

As discussed above, the ESJ Wind Project was determined to have moderate impacts on special status species, which would become less than moderate with implementation of mitigation measures. Mitigation measures would be similar to those required by the CESA, such as compensating for permanent habitat impacts at a 3-to-1 ratio. As the ESJ Wind Project would provide protection for species listed in NOM-059-SEMARNAT-2001 (the Mexican protected species list), the project would be as protective of special status species as a project developed within California.

California Fish and Game Code, Section 3511, 4700, and 5050

These sections prohibit the taking and possession of birds, mammals, fish, and reptiles listed as fully protected. The administering agency is the California Department of Fish and Game.

As discussed above, the ESJ Wind Project would provide protection for species listed in NOM-059-SEMARNAT-2001 (the Mexican protected species list) and would therefore be as protective of special status species as a project developed within California.

California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.)

Fish and Game Code Section 1900 et seq. designates state rare, threatened, and endangered plants and provides for their preservation, protection and enhancement. The ESJ Wind Project will not violate this code as it relates to rare, threatened, and endangered plants. No such plant species occurs within the proposed project area. The ESJ Wind Project was determined to have moderate impacts on special status species, which would become less than moderate with implementation of mitigation measures.

As discussed above, with the implementation of mitigation measures, the ESJ Wind Project would not adversely or moderately impact any special status species listed in NOM-059-SEMARNAT-2001 (the Mexican protected species list) and would therefore be as protective of designated species as a project developed within California.

California Code of Regulations, Title 14, Sections 670.2 and 670.5

California Code of Regulations Title 14, Sections 670.5 references the current database listings of plants and animals of California designated as threatened or endangered.

With the implementation of mitigation measures, the ESJ Wind Project would not adversely or moderately impact any special status species listed in NOM-059-SEMARNAT-2001(the Mexican protected species list). As a result, the project would be as protective of plants and animals designated as threatened or endangered in Mexico as a project developed within California would be of California-listed species.

Local

Imperial County General Plan

The Conservation and Open Space Element of the General Plan (Imperial County 1993) directs the County to evaluate the compatibility of proposed development projects with the preservation of biological resources and open space. The plan sets forth the following goal and objectives for the conservation and preservation of biological resources:

- Goal 2: The County will preserve the integrity, function, productivity, and long-term viability of environmentally sensitive habitats, and plant and animal species.
  - Objective 2.1 Conserve wetlands, fresh water marshes, and riparian vegetation.
  - Objective 2.2 Protect significant fish, wildlife, plant species, and their habitats.
  - Objective 2.3 Protect unique, rare, and endangered plants and animals and their habitats.
  - Objective 2.4 Use the environmental impact report process to identify, conserve and enhance unique vegetation and wildlife resources.
  - Objective 2.5 Give wildlife conservation a high priority in County park acquisition and development programs.
  - Objective 2.6 Attempt to identify, reduce, and eliminate all forms of pollution which adversely impact vegetation and wildlife.
  - Objective 2.7 Discourage the use of wild native animals as pets.
  - Objective 2.8 Adopt noise standards which protect sensitive noise receptors from adverse impacts.

The ESJ Wind Project will implement protective measures during construction and will employ mitigation and monitoring measures after construction to avoid impacts on threatened and endangered species. The MIA report was prepared

to identify and analyze impacts on biological resources. As such, the proposed project would be as protective of flora and fauna as if the project were built within California.

4.5 CULTURAL RESOURCES

4.5.1 Environmental Concerns

Environmental concerns for cultural resources relate to whether the project would cause physical destruction or damage to all or part of an historical or archaeological resource or buried human remains.

4.5.2 Potential Areas of Impact

Cultural Resources within the Area of Potential Effect

Existing conditions for cultural resources within the proposed project area are described in Chapters IV.2.3.9.2 and II.3.2.7 of the MIA report. Within the leased area, but excluded from the project site, approximately one kilometer (0.62 mile) north of the Vallecitos Bridge is the "El Vallecitos" archaeological zone recorded by the National Institute of Anthropology and History (INAH). The site was recorded and studied as part of the comprehensive project "Recordation of Archaeological Sites in Baja California" begun in 1987 under INAH's direction. In 1988, the first rehabilitation and excavation work was carried out under the supervision of archaeologist Jorge Serrano, and the first efforts were also made to bring the site to the attention of the general public (Serrano 1997 as cited in Guía-Ramírez 2005). The site was reinvestigated during the 2001 and 2002 field seasons, resulting in copious amounts of new site data (Guía-Ramírez 2005; Oviedo García 2005). El Vallecitos is considered to be the most representative petroglyph site of the region, with more than 18 cave murals, of which 6 are available for public viewing. Apart from the cave murals, El Vallecito also provides material evidence that tells the story of the Kumeyaay, a tribe of semi-nomadic hunter/gatherers in northwest Baja California, using the location as an important temporary settlement. During the 2001 and 2002 field seasons, archaeologists conducted surface surveys and excavations, and analyzed the collected materials. The data presented new information on the way of life and customs of the Kumeyaay, including identifying areas of major occupation,

species of animals and raw materials utilized at the site, and identification of areas where the inhabitants practiced cremation. Chronometric dating has placed the site at the end of the late prehistoric period, which began around 1,500 years ago and ended with the arrival of Europeans (Oviedo García 2005).

ESJ has been working closely with INAH on archeological issues. In addition to excluding the El Vallecitos archaeological zone from the project site, the nearest project infrastructure would be sited approximately 2 kilometers away from the zone. On November 29, 2008, project consultants held a meeting with the INAH at its Ensenada offices and conducted a site visit with the INAH archaeologists, during which an agreement for additional cultural surveys and research of the area was discussed.[7] INAH conducted further field investigations and issued clearance notification for a majority of the project site. INAH has not cleared some areas, and an agreement has been executed for INAH to continue to study these additional areas. These final studies are anticipated to be completed in 2012. After completion of these studies, it is anticipated that the all of the areas where project infrastructure is expected to be constructed will receive clearance from INAH.

Chapter V of the MIA report identified the types of impacts and intensity of impacts related to site preparation, site construction, operation and maintenance, and site abandonment (Table V.3.1.3-1, page V-17). The analysis identified negligible impacts on cultural resources from site clearing and vegetation removal, and from turbine operations. The analysis identified moderate impacts on cultural resources from blasting, mechanical excavation, cut/fill, compaction and grading, and dismantling/demolition of the site. After applying mitigation to the moderate adverse impacts, all would be reduced to less than moderate.

[7] The INAH investigates and conserves the national archaeological, anthropological, historical, and paleontological heritage of Mexico. A construction project that is located near a known archeological area must get clearance from the INAH. INAH performs all cultural surveys necessary to obtain the clearance. The archeological salvage is done by INAH personnel, usually through an agreement signed with the developer of the project, who pays for all associated costs.

4.5.3 ESJ Analytical Requirements and Mitigations

Pre-Construction Surveys

As noted above, ESJ is required to receive clearance from INAH prior to the start of construction. Details of pre-project site surveys in support of this clearance were discussed above.

Mitigation

The following plans, described in Table 3, will include measures that avoid or minimize impacts on cultural resources:

- Construction, Operation, and Maintenance Support Plan
- Reclamation Plan

Mitigation measures will include the following:

- Activities will be coordinated in collaboration with the INAH.
- In any case where archeological remains or cultural artifacts are found, INAH will be notified immediately. The on-site contractor will designate personnel responsible for cultural issues during construction.
- Measures will be taken to protect archaeological sites within the project area that may be affected by decommission/abandonment. This will occur in collaboration with INAH.

4.5.4 Description of LORS

Federal

National Environmental Policy Act

The National Environmental Policy Act (42 United States Code 4321) states that it is the federal government's continuing responsibility to use all practicable means to preserve important historic, cultural, and natural aspects of our national heritage. It instructs federal agencies to prepare environmental impact statements for each major federal action having an effect on the environment.

The MIA report conducted an extensive impact analysis on cultural resources, similar in scope and effort to a NEPA analysis, including ongoing collaboration with INAH. The MIA report also identified mitigation measures to reduce impacts on cultural resources. As a result, the ESJ Wind Project was analyzed in substantially the same way in the MIA as it would have been under NEPA if the project was built within California.

National Historic Preservation Act

The National Historic Preservation Act is the primary federal legislation dealing with cultural resources and establishes the Advisory Council on Historic Preservation, State Historic Preservation Officers, Tribal Preservation Officers, and a preservation grants-in-aid program. Section 106 directs all federal agencies to take into account the effects of their undertakings (actions and authorizations) on properties included in or eligible for the National Register of Historic Places, and Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties.

The ESJ Wind Project will be built and operated so as to avoid and mitigate the effects on cultural resources, including consulting with the state agency in charge of cultural resources, the INAH. INAH maintains a register of archeological sites.[8] As a result, this project would be consistent with all applicable cultural resources statutes and be as protective of cultural resources as a similar project constructed within California.

State

California Environmental Quality Act

CEQA sets statewide policies that provide the framework by which California public agencies assess environmental impacts and consequences of projects. Under CEQA, a lead agency determines whether a project would cause a significant environmental impact on the environment. The lead agency may propose mitigation measures to reduce significant impacts. Specific requirements for cultural resources are whether the action would cause a substantial adverse change in the significance of a historical or archaeological

[8] http://www.inah.gob.mx/index.php/zonas-arqueologicas/zonas-arqueologicas/groupe/156

resource or disturb any human remains, including those interred outside of formal cemeteries.

Public Resources Code

Several Public Resources Codes relate to cultural resources, including Section 5020.1 (defines Historical Resource and Substantial Adverse Change), Section 5024.1 (establishes the California Register of Historic Places and criteria for determining significance), Section 5097.5 (misdemeanor offence for unauthorized removal or destruction of archaeological resources on public land), Section 5097.98 (notification procedures for discovery of Native American artifacts or remains), Section 5097.99 (prohibits obtaining or possessing Native American artifacts or human remains), Section 5097.991 (Native American artifacts or remains shall be repatriated), and Section 5097.98 (if remains are determined to be of Native American origin, the coroner is required to notify the Native American Heritage Commission for recommendations on treatment and disposal to most likely descendant).

Administrative Code, Title 14, Section 4307

Under this code, no person shall remove, injure, deface, or destroy any object of archaeological or historical interest or value.

California Code of Regulations Section 1427

Under this section, California's archaeological resources are recognized as being endangered by urban development and population growth and by natural forces. The legislature further finds and declares that these resources need to be preserved in order to illuminate and increase public knowledge concerning the historic and prehistoric past of California. Every person, not the owner thereof, who willfully injures, disfigures, defaces, or destroys any object or thing of archaeological or historical interest or value, whether situated on private lands or within any public park or place, is guilty of a misdemeanor. It is a misdemeanor to alter any archaeological evidence found in any cave, or to remove any materials from a cave.

As reported in the MIA, the ESJ Wind Project would not result in substantial adverse impacts (including destruction or damage) on historical or

archaeological resources or buried human remains during construction, operation, or decommissioning. Given the absence of any substantially adverse impacts on historical or archaeological resources or disturbance of any human remains, and a plan developed in concert with the designated responsible agency, INAH, the project will be developed and operated in a manner that is as protective of the cultural environment as a similar facility constructed and operated in California.

Local

Imperial County General Plan

The Land Use Element (Imperial County 2008) and Conservation and Open Space Element (Imperial County 1993) of the General Plan direct the County to evaluate the compatibility of proposed development projects with the preservation of environmental resources and open space. The plan sets forth goals and objectives of preservation and conservation of cultural resources including the following:

- Land Use Element, Goal 9: Identify and preserve significant cultural resources.
  - Objective 9.1, Preserve as open space those lands containing historic and prehistoric sites.
- Conservation and Open Space Element, Goal 3: Important prehistoric and historic resources shall be preserved to advance scientific knowledge and maintain the traditional historic element of the Imperial Valley landscape.
  - Objective 3.1 Protect and preserve sites of archaeological, ecological, historical, and scientific value, and/or cultural significance.

In addition, the Conservation and Open Space Element contains a cultural resources conservation policy "to identify and document significant historic and prehistoric resources, and provide for the preservation of representative and

worthy examples; and recognize the value of historic and prehistoric resources, and assess current and proposed land uses for impacts upon these resources."

Given the absence of any substantially adverse impacts on historical or archaeological resources, requirements for a plan developed in concert with the designated responsible agency, INAH, and the pre-construction surveys conducted by INAH, the project will be developed and operated in a manner that is as protective of the cultural environment as a similar facility in California.

4.6 GEOLOGICAL HAZARDS

4.6.1 Environmental Concerns

Environmental concerns for geological hazards relate to whether the project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- Rupture of a known earthquake fault;
- Strong seismic ground shaking;
- Seismic-related ground failure, including liquefaction; or
- Landslides.

Impacts would also occur if the project would result in substantial soil erosion or the loss of topsoil or if the project were located on expansive soil, creating substantial risks to life or property. In addition, impacts would occur if the project were located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

4.6.2 Potential Areas of Impact

Existing conditions for geological hazards within the proposed project area are described in Chapter IV.2.1.2 of the MIA report. The project site is located in an area considered highly susceptible to tectonic movements. However, risk from earthquake damage on the project site is low, as the site is well removed from residences and commercial development. The area has a low likelihood for

flooding and a moderate susceptibility to landslides. There is no evidence of volcanic activity in the region.

Blasting associated with project activities could cause landslides, and stripping and clearing of vegetation would expose soils, making them more susceptible to erosion and landslides. Buildings and infrastructure will be designed and constructed to minimize the likelihood for impacts from earthquakes, landslide, or other hazards and will comply with the *Ley Estatal de Edificaciones del Estado de Baja California* (Baja California State Law for Construction), including the guidelines for seismic design.

Chapter V of the MIA report identified 4 adverse impacts, 2 of which would be considered moderate. Moderate geological hazards impacts would occur from clearing vegetation and blasting. No impacts would be considered severe or critical. After applying mitigation measures, impacts would be less than moderate.

4.6.3 ESJ Analytical Requirements and Mitigations

The following plans, described in Table 3, will include measures that avoid or minimize geologic-related impacts:

- Erosion and Sediment Control Plan

Mitigation measures will include the following:

- Activities associated with explosives will be limited to designated zones.
- Geotechnical studies will be undertaken to avoid excavation in areas where placing wind turbines may not be feasible.
- Measures will be taken to oversee the engineering procedures to avoid any landslides.
- To prevent erosion around the excavation sites, retention barriers such as netting, sand bags, tarps, agave or coconut fibers, or local natural fibers will be used.

- Project facilities will be sited to follow the natural terrain where possible, reducing unnecessary impacts.

In addition to the mitigation measures described above, the project will comply with the *Ley Estatal de Edificaciones del Estado de Baja Californi*a (Baja California State Law for Construction), including the guidelines for seismic design. As described in **Table 1**, engineering plans must be submitted to the municipality of Tecate for approval prior to the granting of any construction permits.

4.6.4 Description of LORS

Federal

There are no federal LORS for geological hazards.

State

California Building Code

The California Building Code 2001 edition is based upon the Uniform Building Code, 2000 edition, published by the International Conference of Building Officials. The California Building Code is a series of standards that establish the minimum requirements to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, stability, access to persons with disabilities, sanitation, adequate lighting and ventilation and energy conservation, and safety to life and property from fire and other hazards attributed to the built environment.

The MIA report identified a susceptibility to both landslides and earthquakes, but project design features, including earthquake protection, and mitigation measures, such as erosion control and revegetation activities, would reduce the likelihood of impacts. In addition, the ESJ Wind Project will comply with local building requirements codified in *Ley Estatal de Edificaciones del Estado de Baja Californi*a (Baja California State Law for Construction), including the guidelines related to seismic design. As a result, this project would be constructed and operated in a manner that is as protective of the environment for geologic resources as a similar project built in California.

CEQA Guidelines, Appendix G: Issue VI: Geology and Soils

This section of the CEQA guidelines requires analysis of whether a project will expose people or structures to risk of an earthquake, strong seismic ground shaking, seismic-related ground failure, landslides, lateral spreading, liquefaction or collapse.

The MIA report evaluated geological hazards on the project site, identifying a susceptibility to both landslides and earthquakes. Geotechnical investigations; project design features such as earthquake protection; and mitigation measures such as erosion control and revegetation activities would reduce the likelihood of impacts. As discussed above, project structures would be located in areas well removed from residences and commercial development. Because the MIA analyzed the potential for geological hazards and the impact the project could have on people and structures, the proposed project would be constructed and operated in a manner as protective against geological hazards as a similar project constructed in California.

Local

Imperial County General Plan

The Seismic and Public Safety Element of the General Plan (Imperial County undated) identifies goals and policies to minimize the risks associated with natural and human-made hazards, and specifies land use planning procedures that should be implemented to avoid hazardous situations. This element sets forth the following goal and objectives relating to geological hazards:

- Goal 1: Include public health and safety considerations in land use planning.
    - Objective 1.1 Ensure that data on geological hazards is incorporated into the land use review process, and future development process.
    - Objective 1.4 Require, where possessing the authority, that avoidable seismic risks be avoided; and that measures, commensurate with risks, be taken to reduce injury, loss of life, destruction of property, and disruption of service.

- Objective 1.5 Encourage other governmental agencies and the private sector to pursue an objective similar to Objective 1.4.
- Objective 1.6 Ensure environmental hazards are considered when siting critical facilities.
- Objective 1.7 Require developers to provide information related to geologic and seismic hazards when siting a proposed project.
- Objective 1.9 Encourage the reclamation of lands where mining, irrigation, landfills, solid waste, hazardous materials/waste storage or disposal, and natural soil erosion has occurred, so as to pose no danger to public health and safety.

The ESJ Wind Project has incorporated geological hazards as a consideration in project planning, since there is the possibility for landslides or seismic activity. Geotechnical investigations, project design features such as earthquake protection, preparation of an erosion and sediment control plan, and mitigation measures such as erosion control and revegetation would reduce the likelihood of impacts caused by geological hazards. As such, the proposed project would be developed and operated in a manner that considers geological hazards to a similar extent as a similar facility constructed in California.

4.7 LAND USE AND RECREATION

4.7.1 Environmental Concerns

Environmental concerns for land use and recreation relate to whether the project would conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would also occur if the project would divide an established community or conflict with any applicable habitat conservation plan or natural community conservation plan. In addition, impacts would occur if the project would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated or if the project included recreational facilities or required the construction or expansion of

recreational facilities which might have an adverse physical effect on the environment.

4.7.2 Potential Areas of Impact

Existing conditions for land use and recreation within the proposed project area are described in Chapter V.3.1.1 of the MIA report. The project site does not contain any established recreational sites or facilities. Current developed use of the site is limited to several existing microwave towers, electrical distribution lines to service the microwave towers, temporary meteorological towers, and dirt access roads.

Section 1.2.1 describes state and local land use plans applicable to the proposed ESJ Wind Project. As discussed in that section, the ESJ Wind Project requires a land use zoning permit from the municipality of Tecate. The zoning permit process includes review of the project for consistency with state and local plans and regulations. As such, the proposed project would not conflict with any applicable land use plan, policy, or program. It would not divide an existing community, and there are no applicable habitat conservation plans or natural community conservation plans. The project would also not include construction of recreation facilities. The project would, however, result in some level of clearing and would alter the land use from undeveloped to developed in the vicinity of project structures.

Chapter V of the MIA report identified 26 adverse impacts, 2 of which would be considered moderate and 1 of which would be considered severe. Moderate impacts would occur to recreation from vegetation clearing and from turbine operations, and severe impacts would occur to land use from vegetation clearing. Mitigation measures would be implemented but would not substantially change the two moderate impacts or the one severe impact, in that a change in land use would occur regardless of mitigation measures to minimize alteration of the landscape. As described above, the zoning permit process would ensure that the proposed project would not conflict with any established state or local land use plan, policy, or program.

4.7.3 ESJ Analytical Requirements and Mitigations

The following plans, described in Table 3, will include measures that minimize land use and recreation impacts:

- Study, Rescue, and Protection of Flora and Rehabilitation Plan
- Construction, Operation, and Maintenance Support Plan

To mitigate impacts on land use and recreation, Chapter VI of the MIA proposed the following mitigations:

- Compensate for permanent impacts as required by the Change in Forestry Land Use Permit.
- Provide information about construction and operation of the ESJ Wind Project to all parties who may be affected by or who are involved with the proposed project.

4.7.4 Description of LORS

Federal

There are no federal LORS for land use and recreation.

State

California Coastal Act of 1976 (Pub. Resources Code §30000 et seq.)

The California Coastal Act establishes a comprehensive scheme to govern land use planning along the entire California coast. The Coastal Act sets forth general policies (§30200 et seq.) which govern the California Coastal Commission's review of permit applications and local plans.

The ESJ Wind Project is not within the coastal zone. As such, this law would not apply.

Local

Imperial County General Plan, Land Use Element

The Imperial County General Plan consists of nine elements that serve as the primary policy statement by the Board of Supervisors for implementing development policies and land uses in Imperial County.

The primary purpose of the Land Use Element (Imperial County 2008) is to identify the goals, policies, and standards of the General Plan that will guide the physical growth of Imperial County. The Land Use Element describes existing land uses within the county and the facilities and services that provide the public infrastructure to support these uses. Also stated are goals and objectives for future growth, expansion of public facilities, environmental resource protection, and policies and programs to guide such future growth. In particular, the goals and objectives are intended to serve as long-term principles and policy statements representing ideals that have been determined by the citizens as being desirable and deserving of community time and resources to achieve. These goals and objectives, therefore, are important guidelines for land use decision making.

Applicable land use goals and objectives set forth in the Imperial County General Plan, Land Use Element, are as follows:

- Goal 3: Achieve balanced economic and residential growth while preserving the unique natural, scenic, and agricultural resources of Imperial County.
  - Objective 3.2 Preserve agriculture and natural resources while promoting diverse economic growth through sound land use planning.
  - Objective 3.8 Utilize non-agricultural land as a resource to diversify employment opportunities and facilitate regional economic growth. Uses must be consistent with each site's resource constraints, the natural environment, and the County Conservation and Open Space Element.

- Goal 4: Preserve and enhance distinctive historic desert towns and newer communities.
  - Objective 4.3 Maintain and require compatible land uses within the existing communities.
  - Objective 4.4 Limit the establishment of non-residential uses in predominantly residential neighborhoods and require effective buffers when appropriate non-residential uses are proposed.
- Goal 6: Promote orderly industrial development with suitable and adequately distributed industrial land.
- Goal 8: Coordinate local land use planning activities among all local jurisdictions and state and federal agencies.
  - Objective 8.8 Ensure that the siting of future facilities for the transmission of electricity, gas, and telecommunications is compatible with the environment and County regulation.
  - Objective 8.9 Require necessary public utility rights-of-way when appropriate.

Imperial County General Plan, Conservation and Open Space Element

The Conservation and Open Space Element (Imperial County 1993) identifies goals and policies to ensure the managed use of environmental resources. The goals and policies are also designed to prevent limiting the range of resources available to future generations.

The purpose of the Conservation and Open Space Element is to:

- Promote the protection, maintenance, and use of the county's natural resources with particular emphasis on scarce resources and resources that require special control and management;
- Prevent the wasteful exploitation, destruction, and neglect of the State's natural resources;
- Recognize that natural resources must be maintained for their ecological value as well as for the direct benefit to the public; and

- Protect open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety.

Applicable land use goals and objectives are as follows:

- Goal 6: The County shall seek to achieve maximum conservation practices and maximum development of renewable alternative sources of energy.
  - Objective 6.6: Encourage compatibility with National and State energy goals and city and community general plans.

The ESJ Wind Project is subject to a similar set of guiding land use policies as set forth in local plans described in Section 1.2.1 of this report. As described in that section, the project requires coordination with local, state, and federal agencies, including a land use and zoning permit from the municipality of Tecate that reviews the consistency of the project with state and local plans and policies. As a result, the ESJ Wind Project would comply with applicable Mexican land use plans to the same extent that a project constructed in California would comply with applicable state and local plans and policies.

4.8 NOISE

4.8.1 Environmental Concerns

Environmental concerns for noise relate to whether the project would result in any of the following:

- Expose people to noise in excess of local noise standards or guidelines or generate noise in excess of local noise standards or guidelines;
- Expose people to excessive ground borne vibration or ground borne noise levels or generate excessive ground borne vibration or ground borne noise levels;
- Cause a permanent substantial increase in ambient noise levels;

- Cause a substantial temporary or periodic increase in ambient noise levels; or
- For a project near a private or public airstrip, expose people residing or working in the project area to excessive noise levels.

4.8.2 Potential Areas of Impact

Existing noise conditions are described in Chapter V.3.1.1 of the MIA report. Noise within the project site is dominated by naturally occurring sounds such as wind and wildlife; winds can cause occasional high noise levels due to the contour of the landscape. Anthropogenic noise sources include traffic from Highway 2 and aircraft overflights. Sensitive receptors include scattered residences and small settlements outside the project lease area; the closest of these would be approximately 4 kilometers (2.5 miles) from the nearest construction activity.

The proposed project would have direct noise impacts associated with construction and operation of the proposed ESJ Wind Project. Impacts would be greatest from blasting activities during construction, which will occur over 6 to 8 months; construction equipment use associated with site clearing, access road construction, and turbine erection would also produce temporary and localized noise impacts. Long-term impacts would be associated with wind turbine and electrical substation operation, as well as from on-site maintenance activities and vehicle traffic to the site. Activities associated with abandonment would produce temporary, localized noise impacts that are similar to those produced during construction. NOM-081-SEMARNAT-1994 establishes maximum allowable sound levels for fixed sources, as follows:

Time	Maximum Allowable Sound Level
6:00 AM TO 10:00 PM	68 dB(A)
10:00 PM TO 6:00 AM	65 dB(A)

Chapter V of the MIA identified 27 adverse noise impacts, 2 of which would be moderate and 2 of which would be severe. Moderate impacts would occur from operation of electrical installations and from dismantling and demolition of

equipment. Severe impacts would occur from blasting and from wind turbine operation. After applying mitigation, all of the impacts would be reduced to less than moderate levels except blasting, which would remain severe.

4.8.3 ESJ Analytical Requirements and Mitigations

The following plans, described in Table 3, will include measures that minimize noise impacts:

- Construction, Operation and Maintenance Support Plan
- Waste Management Plan
- Reclamation Plan

Mitigation measures will include the following:

- Blasting. To mitigate blasting-related noise:
  - Plan ahead for all explosive activities to occur in designated areas.
  - Communicate in advance with those affected by blasting.
- Turbine Operation. Ensure wind turbine operations comply with NOM-081-SEMARNAT-1994.
- Electrical Facility Operation. To prevent or reduce impacts associated with electrical facilities such as substations, implement the following measures:
  - Ensure electrical facilities comply with NOM-081-SEMARNAT-1994.
  - Locate substations as far as possible from populated areas (there nearest residence would be approximately 3 miles [5 kilometers] from the nearest substation).
  - For electrical facilities that exceed the standards outlined in NOM-081-SEMARNAT-1994, take measures to meet the standards.

- Dismantling and Demolition. To prevent or reduce impacts associated with dismantling and demolition, implement the following measures:
  - Plan ahead for all demolition activities to occur in designated areas.
  - Communicate in advance with those affected by demolition.
  - Carry out dismantling of equipment and machinery (turbines, towers, transmission lines) and demolition during the day.

4.8.4 Description of LORS

Federal

Occupational Safety and Health Act

Under the Occupational Safety and Health Act of 1970 (29 USC § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 Code of Federal Regulations § 1910.95) that establish maximum noise levels to which workers at a facility may be exposed. These OSHA noise regulations are designed to protect workers against the effects of noise exposure, and list permissible noise level exposure as a function of the amount of time during which the worker is exposed. OSHA regulations also dictate hearing conservation program requirements and workplace noise monitoring requirements.

Chapter III of the MIA contains a full listing of Mexican laws and regulations applicable to construction, operation, and decommissioning of the ESJ Wind Project, including regulations on workplace noise. The ESJ Wind Project would comply with all established Mexican workplace regulations, as well as US OSHA law where applicable. Therefore, the proposed project would offer an equivalent level of worker protection as a similar project that was constructed and operated in California.

US Environmental Protection Agency Noise Guidelines

While there are no federally enforceable laws governing community noise levels, EPA issued guidance for acceptable noise levels guidance levels for the protection of public health and welfare in residential land use areas. The guidance levels specified an outdoor Ldn of 55 dBA and an indoor Ldn of 45 dBA.

As discussed above, NOM-081-SEMARNAT-1994 establishes maximum allowable sound levels for fixed sources of noise, and the project is committed to meeting these standards. Construction activities, which are not fixed sources, would produce noise levels in excess of these guidelines and could affect sensitive land uses if such receptors are located in proximity to the noise source. The nearest sensitive receptors are approximately 4 kilometers (2.5 miles) from proposed construction locations and would not be affected by most construction activities but could be affected by blasting depending upon the location where blasting occurred. Construction-related activities would be temporary, and mitigation would be implemented during blasting to reduce the level of impact. Operation of the proposed project would meet NOM-081-SEMARNAT-1994 limits; given the distance of proposed turbines and electrical equipment to the nearest sensitive receptors, and application of the SEMARNAT requirements, the proposed project would be constructed and operated in a manner as protective of the environment as a similar project located in California.

State

California Occupational Safety and Health Act

As a result of the passage of Cal-OSHA, the California Occupational Safety and Health Administration (Cal-OSHA) has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., title 8, § 5095 et seq.) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards described above.

Cal-OSHA sets the same permissible noise levels as the US OSHA law. The ESJ Wind Project would comply with all established Mexican workplace regulations,

as well as US OSHA law as applicable. Therefore, the proposed project would offer an equivalent level of worker protection as a project that was built in California.

California Environmental Quality Act

CEQA requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible.

The MIA report identified moderate and severe impacts and provided mitigation measures to reduce noise impacts to the extent feasible.

Local

Imperial County General Plan Noise Element

California Government Code Section 65302(f) requires that a noise element be prepared as part of the local General Plan. This element is to "address existing and foreseeable noise problems." The Noise Element of the Imperial County General Plan provides a program for incorporating noise issues into the land use and planning process, with a goal of minimizing adverse noise impacts on sensitive noise receptors. The Noise Element establishes goals, objectives, and procedures to protect the public from noise intrusion. The Noise Element sets construction noise standards as follows:

- Construction noise from a single piece of equipment or a combination of equipment shall not exceed 75 dB Leq, when averaged over an eight-hour period and measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor, of days or weeks.
- In cases of extended length construction times, the above standard may be tightened so as not to exceed 75 dB Leq when averaged over a one-hour period.
- Construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays.

The Noise Element also sets land use compatibility guidelines, sets noise limits at property boundary lines, and sets limits on increases over existing ambient noise levels without consideration of feasible noise reduction measures.

The MIA identified severe noise impacts related to blasting and mitigation measures to reduce the impact. Given the distance of construction to the nearest sensitive receptors, noise impacts related to other construction activities were considered in the MIA to be less than moderate. As described above, Mexican noise standards have been set for fixed sources of noise, and these standards will be met by the ESJ Wind Project. For these reasons, the proposed project will be constructed and operated in a manner as protective of noise impacts as a similar project located in California.

4.9 PUBLIC HEALTH AND SAFETY

4.9.1 Environmental Concerns

Public health and safety concerns relate to increased risk of injury associated with the use of heavy equipment, increased traffic, hazardous materials, blasting, and other risks associated with working near high-voltage lines during construction and maintenance. In addition, impacts would occur from mechanical hazards, including tower collapse, or breaking of a rotor blade, also called blade throw, and electrical hazards during operation. Other concerns include shadow flicker, aviation safety interference, electromagnetic interference, exposure to electromagnetic fields, natural weather occurrences, and intentional acts of destruction.

4.9.2 Potential Areas of Impact

Existing conditions for public health and safety within the proposed project site are described in Chapter IV.2.3.7 of the MIA report. The ESJ Wind Project and generation tie line are located in a sparsely settled area. Within the proposed project area medical clinics provide basic medical services. The doctors that service these clinics are part-time and only available several times a week.

Residents within the proposed project area rely on medical attention through IMSS (*Instituto Mexicano del Seguro Social* [Mexican Institute of Social Security]),

ISSSTECALI (*Instituto de Seguridad y Servicios Sociales para Trabajadores del Gobierno y Municipios del Estado de Bajacalifornia* [Institute of Social Services for Government and Municipalities of the State of Baja California Employees]), ISSSTE (*Instituto de Seguridad y Servicios Sociales para Trabajadores del Estado* [Institute of Security and Social Services for State Employees]), PEMEX-SEDENA, *and Seguro Popular* (Social Health Care). IMSS covers more than half of the population.

The three most common health problems in the project area are stomach-related infections, respiratory-related infections, and pharyngitis, tonsillitis, and laryngitis.

There is no evidence of ground contamination within the proposed project site.

Project phases that would impact public health and safety include site preparation, construction, operations and maintenance, and site abandonment. No adverse impacts on public health and safety were identified in the MIA report. The project proponent does not anticipate the discharge of any hazardous substances during construction or during facility operations. Mitigation measures described below would prevent or minimize impacts associated with spills or accidental discharge of substances. Handling, storage, and disposal of hazardous materials would follow Mexican regulations pertaining to hazardous materials, as indicated in Chapter III of the MIA.

4.9.3 ESJ Analytical Requirements and Mitigations

The following plans, described in Table 3, will include measures that minimize impacts on public health and safety:

- Construction, Operation and Maintenance Support Plan
- Waste Management Plan
- Fire Protection Plan
- Reclamation Plan

The MIA report did not propose any specific mitigation measures for potential impacts on public health and safety because no adverse impacts were identified. However, the following mitigations required to minimize impacts for other resources may also address some aspects of public health and safety:

- Measures will be taken to oversee the engineering procedures to avoid any landslides.
- No chemical substances or burns will be used for any activities involving ground breaking.
- Provide information about construction and operation of the ESJ Wind Project to all parties who may be affected by or who are involved with the proposed project.
- Plan all activities associated with explosives in designated zones.
- Apply retention barriers.
- Notifications of blasting will be given to those living in the surrounding areas to avoid any inconveniences.
- Temporarily prohibit access to any person not associated with construction activities.
- Transportation of oil used for turbines and gas used for operation vehicles will be handled within accepted standards.
- Precautions will be taken to avoid spills.
- Combustibles will be stored in separate areas that will be designated for storage of oil and gas following accepted standards.
- Repair and maintenance equipment will be stored in a designated area. Any waste will be stored in special containers and will be disposed of under the accepted standards within Mexico. These will be periodically collected by a licensed private company.
- The storage area will comply with specifications within applicable standards, including those found in Regulations from LGEEPA (*Ley General del Equilibrio Ecológico y la Protección al Ambiente* [Ecological

Equilibrium and Environmental Protection General Law]) under dangerous residuals, Chapter III and Regulations from LGPGIR (*Ley General para la Prevención y Gestión Integral de los Residuos* [General Law for Prevention and Integral Procedures of Residuals]) Chapter IV.

4.9.4 Description of LORS

Federal

Code of Federal Regulations

United States Code, Title 42, Chapter 85, Section 7408 requires jurisdictions to establish air quality standards and guidelines, including identifying potential adverse effects on public health.

There would be no significant air emissions, toxic air contaminants, or other discharges released during construction or operation of the ESJ Wind Project. The project would therefore be as protective of human health as a project built within California. Air quality issues are discussed further in Section 4.3 of this report.

State

California Health and Safety Code, Section 39650

California Health and Safety Code section 39650 et seq. mandates the California Environmental Protection Agency to establish safe exposure limits for toxic, non-criteria air pollutants and identify the best available methods for their control. These laws also require that the new source review rules for each air district include regulations establishing procedures to control the emission of these pollutants.

There would be no significant air emissions, toxic air contaminants, or other discharges released during construction or operation of the ESJ Wind Project. The project would therefore be as protective of human health as a project subject to California Health and Safety Code that was built within California. Air quality issues are discussed further in Section 4.3 of this report.

Local

Imperial County General Plan

The Seismic and Public Safety Element (Imperial County undated) of the Imperial County General Plan includes the following goal and objectives related to public health and safety.

- Goal 1: Include public health and safety considerations in land use planning.
  - Objective 1.1 Ensure that data on geological hazards is incorporated into the land use review process, and future development process.
  - Objective 1.4 Require, where possessing the authority, that avoidable seismic risks be avoided; and that measures, commensurate with risks, be taken to reduce injury, loss of life, destruction of property, and disruption of service.
  - Objective 1.6 Ensure environmental hazards are considered when siting critical facilities.
  - Objective 1.7 Require developers to provide information related to geologic and seismic hazards when siting a proposed project.
  - Objective 1.9 Encourage the reclamation of lands where mining, irrigation, landfills, solid waste, hazardous materials/waste storage or disposal, and natural soil erosion has occurred, so as to pose no danger to public health and safety.

The ESJ project would implement protective measures during construction, operation, and abandonment and would employ mitigation measures for geologic and seismic concerns. Siting and design of the proposed project would address potential environmental hazards related to public health and safety. Please see Section 4.6 for additional discussion of seismic hazards, including Mexican building guidelines related to seismic design and the absence of human receptors near project infrastructure.

The Seismic and Public Safety Element also addresses emergency preparedness through the following goal and objectives:

- Goal 2: Minimize potential hazards to public health, safety, and welfare and prevent the loss of life and damage to health and property resulting from both natural and human-related phenomena.
  - Objective 2.1 Ensure the adequacy of existing emergency preparedness and evacuation plans to deal with identified hazards and potential emergencies.
  - Objective 2.2 Reduce risk and damage due to seismic hazards by appropriate regulation.
  - Objective 2.4 Support and assist in informing the public and other agencies of the hazards and risks of earthquakes and of techniques to employ to reduce those hazards.
  - Objective 2.5 Minimize injury, loss of life, and damage to property by implementing all state codes where applicable.
  - Objective 2.6 Maintain, utilize, and provide geologic and seismic information as furnished by the State Geologist as required.
  - Objective 2.8 Prevent and reduce death, injuries, property damage, and economic and social dislocation resulting from natural hazards, including flooding, land subsidence, earthquakes, other geologic phenomena, levee or dam failure, urban and wildland fires, and building collapse by appropriate planning and emergency measures.
  - Objective 2.9 Reduce vehicle accidents through appropriate standards.

The ESJ project would implement protective measures during construction, operation, and abandonment to reduce the risks on public health and safety, including preparation of a Construction, Operations, and Maintenance Plan that would include emergency procedures and compliance with Mexican building

guidelines pertaining to seismic design. For these reasons, and given the absence of significant identified risks to public health, the proposed project would be developed and operated in a manner as protective of public health as a similar project located in California.

4.10 SOCIOECONOMICS

4.10.1 Environmental Concerns

Impacts on population and housing would be considered significant if the following occurred in the project area or surrounding communities:

- Substantial population growth was induced, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- The project could lead to the displacement of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- The proposed project results in the displacement of a substantial number of people, necessitating the construction of replacement housing elsewhere.

Impacts on public services would occur if the proposed project resulted in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or resulted in the need for new or physically altered governmental facilities, the construction of which could cause environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services, including but not limited to fire protection, police protection, schools, or parks.

4.10.2 Potential Areas of Impact

Existing social and economic conditions in the project area are discussed in Chapter IV.2.3 of the MIA report. The project area is within the northern portion of the state of Baja California, Mexico. Demographic and economic information for the state, municipality, and project area is summarized below.

The total population in Baja California was 3.1 million in 2010. The population growth rate was 1.09 percent between 2005 and 2010, down from a growth rate of 1.39 percent from 2000 to 2005. The total population in the municipality of Tecate was 101,079 in 2010. The growth rate was 1.11 percent between 2005 and 2010, down from a rate of 1.7 percent from 2000 to 2005 (City Population 2012). Migration to the US continues to play a role in the local economy, particularly in border towns. In 2005, a documented international migration of 87,000 people occurred.

Poverty levels in the region, including both the percent of people in extreme poverty and those considered poor, were below national averages in 1996 and are projected to remain below these averages, based on 2015 projections.

There are three communities in near the ESJ Wind project site: Colonia Luis Echeverria, La Rumorosa, and Jacume, with 2010 populations of 2,411, 1,836, and 290, respectively (City Population 2012). Colonia Luis Echeverria is on the western side of the lease area, La Rumorosa is on the eastern side of the lease area, and Jacume is on the northern side of the lease area. Project activity would occur closest to La Rumorosa.

Public services are minimal within the proposed project area. There is no established school system and no other educational infrastructure. Urban areas (La Rumorosa and Luis Echeverria) have more extensive and more reliable public services.

There are four ethnic minority groups present in Baja California (Kumlai, Paipai, Cucapa, and Kiliua), living principally in seven communities. None of these communities is located within the proposed project area.

Unemployment levels in the state generally decreased from 1996 to 2006. In the proposed project area, ranching was historically important but is no longer feasible due to decreased water availability. Forest resource use has also diminished in importance. Today, ecotourism, use of Yucca, and small-scale farming are the economic activities present in the region.

Impacts on economic conditions could occur in the proposed project area and communities throughout northern Baja California, including but not limited to Jacuma, La Rumorosa, Tecate, Tijuana, Ensenada, Rosarito Beach, and Mexicali. Creation of jobs would vary by stage of project and location of development. Detailed employment estimates are included in Table II.4.1-1 of the MIA report. Increase in employment in the region would result in direct and indirect economic benefit due to worker income and secondary expenditures in the local economy.

The proposed project is not likely to displace local business to a significant degree; therefore, impacts on the local economy would be beneficial. The first phase of the ESJ Wind Project would generate approximately 300 to 400 jobs peak during the construction phase and 6 to 8 permanent operation and maintenance jobs, plus contractors.

Potential social impacts on local area residents include temporary increases in traffic, air quality emissions, and noise, and permanent changes to the visual landscape. Mitigation measures as described for the relevant resource areas would reduce impacts on the local communities. Potential beneficial economic impacts on local area residents would be as described above.

Of the 5 adverse impacts identified in the MIA report, all would be considered moderate:

- The analysis identified moderate impacts on telecommunications from the operation of electrical installations.
- The analysis identified moderate impacts on demographics from contracting of personnel.

After applying mitigation to the adverse impacts on demographics, the impacts would become less than moderate. The MIA identified no mitigation for the telecommunications impact; therefore, residual impacts on telecommunications would still be present. Studies performed since the MIA was completed have determined that wind turbines would not interfere with the existing microwave towers present on the project site.

4.10.3 ESJ Analytical Requirements and Mitigations

The following plan, described in Table 3, will include measures that minimize air quality and noise impacts on local residents in the project area:

- Construction, Operation, and Maintenance Support Plan

To mitigate socioeconomic impacts, the MIA report proposed the following mitigation:

- Where possible, personnel will be hired from the local economy.
- Project infrastructure will not interfere with the microwave beam paths of existing on-site microwave antennas. As required by the SCT, ESJ contacted the owners/operators to confirm that the proposed project layout will not interfere with their operation.

4.10.4 Description of LORS

Federal

Executive Order 12898, "Federal Actions to address Environmental Justice in Minority Populations and Low-Income Populations"

Executive Order 12898 focuses federal attention on the environment and human health conditions of minority communities and directs agencies to achieve environmental justice as part of this mission. The Executive Order requires the EPA and all other federal agencies (as well as state agencies receiving federal funds) to develop strategies to address this problem. Agencies are required to identify and address any disproportionately high and/or adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations.

There is a lack of detailed data for income or racial and ethnic composition of area communities needed to determine the presence of low-income or minority populations compared with the general population of the region. However, the surrounding project area is thought to be generally homogenous in terms of race and income. Temporary adverse impacts on the local population would result from increases in traffic, air quality emissions, and noise. Mitigation

measures developed to avoid or minimize traffic, air, and noise impacts would reduce impacts on local communities. Permanent adverse impacts on local populations would be avoided or minimized through careful siting of wind turbines and electrical equipment.

State

Title 14 California Code of Regulations, Section 15131

CEQA and its guidelines state that economic or social factors of a project may be included in an Environmental Impact Report but shall not be treated as significant effects on the environment. However, economic or social effects of a project may be used to determine the significance of physical changes caused by the project. Additionally, economic, social, and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce or avoid the significant effects on the environment.

The ESJ Wind Project underwent a similar analysis to assess the socioeconomic impacts associated with the ESJ Wind Project, including the effect that alteration of the land would have on the social and economic well-being of area residents. The MIA evaluated potential impacts on socioeconomic factors such as services, education, housing, communication, employment, and demographics. Because the project underwent a review such as that required by CEQA, the ESJ Wind Project would be as protective of the human environment as a similar project built in California.

California Government Code, sections 65996-65997

These code sections require the affected county to consider the effect the proposed development project may have on local school districts. The imposition of separate fees on the project for the offsetting of costs linked to school facilities is not permitted.

No public school district is present in the proposed project area; therefore, the regulations in this government code would not be applicable.

Local

Imperial County General Plan

The General Plan for Imperial County includes a Housing Element (Imperial County 2008b). Section Three of the Housing Element provides goals for housing, and identifies objectives and policies to achieve each goal, which include the following:

- Goal 1 (Housing Demand and Accessibility): Ensure the provision of housing sites in suitable locations and with adequate services which collectively accommodate a range of housing types, sizes, and prices meeting the needs of all economic segments of the county's population.
- Goal 2 (Housing Supply and Affordability): Provide the opportunity to obtain affordable housing which is safe, decent, and sanitary and within a suitable living environment with reasonable accessibility to employment.
- Goal 3 (Housing Opportunities): Ensure that housing opportunities are available to all income groups in all communities without discrimination on the basis of race, religion, ethnicity, sex, age, marital status, or household composition.

Due to the short-term nature of employment needs, the proposed project is not likely to result in changes to permanent housing. In addition, workers will be preferentially recruited from the local communities, reducing the potential need for housing that could occur from an influx of workers from outside the area.

The proposed project was evaluated in a similar manner as a project in California. Impacts were found to generally be positive, and some moderate adverse impacts were mitigated. For these reasons, the proposed project will be developed and operated in a manner as protective of the socioeconomic environment as a similar project located in California.

4.11 TRAFFIC AND TRANSPORTATION

4.11.1 Environmental Concerns

Traffic and transportation impacts relate to whether a project would result in the following:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections);
- Individually or cumulatively exceed level of service standards established by the local congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks;
- Substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections); or
- Results in inadequate emergency access or parking capacity.

4.11.2 Potential Areas of Impact

Existing conditions for roads within the proposed project area are described in Chapter IV.2.3.6.1 of the MIA report. The area of the project is sparsely populated with relatively light traffic. The main roads that will provide access to the proposed project site will be dirt roads. The access road on the north side of the ESJ Wind Project site runs to Jacume, where it connects with Federal Road #2. Federal Road #2 runs from Mexicali to Tijuana. The access road on the south side of the ESJ Wind Project site would connect with Federal Road #3, which serves the city of Ensenada to the Port of San Felipe. The main access roads have various rural secondary roads that serve the local communities in the area. The ESJ Wind Project would require a Federal Highway Access permit from the *Secretaría de Comunicaciones y Transportes* (SCT) for actions in the federal right-of-way between the highway and the project site.

Project phases that would impact traffic and transportation include site preparation, construction, operations and maintenance, and site abandonment. The proposed project would involve transporting equipment, materials, and personnel during all of these phases, which would impact traffic and transportation. Chapter V of the MIA report identified 8 adverse impacts, none of which were considered to be moderate, severe, or critical.

4.11.3 ESJ Analytical Requirements and Mitigations

The MIA report did not propose any specific mitigation measures for potential impacts on traffic and transportation because the impacts were determined to be less than moderate. A Construction, Operation, and Maintenance Support Plan will be prepared, which will include measures pertaining to transport of materials and project-related traffic. As described in Section 1.2.1, the SCT regulates access to federal highways and microwave operations. Requirements for wind turbine lighting are also imposed by SCT. In addition, construction contractors must coordinate with the SCT to obtain any necessary permits and would be required to comply with Mexican regulations pertaining to highway safety, including transport of hazardous materials and transport of oversize loads on public highways.

4.11.4 Description of LORS

Federal

The following three federal regulations and advisories relate to air safety.

Title 14, Part 77 of the Code of Federal Regulations, "Objects Affecting the Navigation Space"

Provisions of these regulations specify the criteria used by the Federal Aviation Administration (FAA) for determining whether a "Notice of Proposed Construction or Alteration" is required for potential obstruction hazards. The need for such a notice depends on factors related to the height of the structure, the slope of an imaginary surface from the end of nearby runways to the top of the structure, and the length of the runway involved. Such notification allows the FAA to ensure that the structure is located to avoid any significant hazards to area aviation.

FAA Advisory Circular No. 70/460-2H, "Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space"

This circular informs each proponent of a project that could pose an aviation hazard of the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA.

FAA Advisory Circular No. 70/460-1G, "Obstruction Marking and Lighting"

This circular describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.

The proposed project would be designed, sited, and constructed to avoid any significant hazards to aviation activities per Mexican law, including obtaining approval of lightings and markings from SCT for structures over 60 meters (197 feet). As such, the project would be as protective of air safety as if the project were built in California.

Title 49, CFR, Section 350-399, and Appendices A-G, Federal Motor Carrier Regulations

This code addresses safety considerations for the transport of goods, materials, and substances over public highways.

Contractors for the ESJ Wind Project would be required to comply with regulations on the weight, dimensions, and capacity of motor transport vehicles that transit on the highways and bridges under federal (Mexican) jurisdiction, as well as with all laws, regulations, or standards pertaining to transport of hazardous materials and oversized loads. Such regulations include NOM-012-SCT-2-1995, which regulates maximum weight and dimensions for vehicles using federal roads, and NOM-002-SCT-2-1994, which regulates transportation of hazardous materials and wastes.

State

California Streets and Highways Code

California Streets and Highways Code, Sections 117 and 660-72, and California Vehicle Code 35780 et seq. require permits for the transportation of oversized loads on county roads.

Contractors for the ESJ Wind Project would be required to comply with regulations on the weight, dimensions, and capacity of motor transport vehicles that transit on the highways and bridges under federal (Mexican) jurisdiction, as well as with all laws, regulations, or standards pertaining to transport of oversized loads.

Local

Imperial County

Imperial County requires a number of permits as a condition of project approval, including an encroachment permit, right-of-way permits, and a transportation permit.

ESJ Wind construction contractors will coordinate with the SCT to obtain any necessary permits and will be required to comply with Mexican regulations pertaining to highway safety, including transport of hazardous materials and transport of oversize loads on public highways. A Federal Highway Access permit would be obtained from the SCT for actions in the federal right-of-way between the highway and the project site. For these reasons, the proposed project would be developed and operated in a manner that is as protective of the environment in regards to transportation impacts as a similar project located in California.

4.12 VISUAL RESOURCES

4.12.1 Environmental Concerns

Environmental concerns for visual resources relate to whether the project would degrade the existing visual character or quality of the site and its surroundings, contribute to light pollution, or have a substantial adverse impact on scenic vistas or resources.

4.12.2 Potential Areas of Impact

Existing conditions for visual resources within the proposed project area are discussed in Chapter IV.2.4 of the MIA report. To determine the visibility of the proposed project, an analysis was conducted using a digital model of the land. The analysis was generated based on what an observer could see from several observation points, including major highways and high-elevation vantage points. The main observation points from which the ESJ Wind Project would be visible would be along Federal Highway #2 in the area of La Rumorosa at the southern end of the project lease area. The southernmost wind turbines would be visible from the highway and from parts of La Rumorosa, though the majority of the turbines and the project transmission line would be located well away from any main observation points.

Calculations were also conducted to determine the visual fragility of the project area. The analysis concluded that much of the project site was an area of high visual fragility because of the level of biodiversity and native species.

Overall, the MIA determined that the proposed project would have low visual impacts on the visual quality or visual susceptibility of the landscape. Features such as mountains and hills would limit full visibility of facilities and machinery associated with the proposed project, and the rough topography of the area would greatly reduce an observer's ability to view the project.

Chapter V of the MIA report identified 50 adverse impacts on visual resources, 18 of which would be moderate and 5 of which would be severe. The analysis also identified moderate impacts on visual fragility from stripping and clearing vegetation; rehabilitation, enlargement, and construction of roads; blasting; laying transmission lines; and turbine operation. Moderate impacts were also identified to visibility from stripping and clearing vegetation; rehabilitation, enlargement, and construction of roads; blasting; mechanical excavation; cutting, filling, compaction, and leveling; and turbine operation. Moderate impacts on artificial light from turbine operation were also identified.

The analysis identified severe impacts on visual quality from stripping and clearing vegetation; rehabilitation, enlargement, and construction of roads; and

construction of concrete structures and installation of permanent facilities. Severe impacts were also identified to visual fragility and visibility from the construction of concrete structures and installation of permanent facilities.

After applying mitigation to the 23 adverse impacts considered moderate or severe, 11 impacts would continue to be moderate and 4 would continue to be severe, while 8 would become less than moderate. The remaining moderate impacts on visual quality would be from stripping and clearing vegetation; laying transmission lines; and turbine operation. Moderate impacts on visual fragility would remain for stripping and clearing vegetation; rehabilitation, enlargement, and construction of roads; laying transmission lines; and turbine operation. Moderate impacts on visibility would remain for rehabilitation, enlargement, and construction of roads; mechanical excavation; cutting, filling, compaction, and leveling; and turbine operation. Impacts that would continue to be severe to visual quality would be the result of rehabilitation, enlargement, and construction of roads and construction of concrete structures and installation of permanent facilities. Severe impacts on visual fragility and visibility would result from construction of concrete structures and installation of permanent facilities.

4.12.3 ESJ Analytical Requirements and Mitigations

The following plans, described in Table 3, will each contain measures that minimize visual impacts while protecting other resource values:

- Construction, Operation, and Maintenance Support Plan
- Compensation of Areas during the Operation and Maintenance Plan
- Study, Rescue, and Protection of Flora and Rehabilitation Plan
- Waste Management Plan
- Bat Monitoring Plan

Mitigation measures also include the following:

- Provide information about construction and operation of the ESJ Wind Project to all parties who may be affected by or who are involved with the proposed project.

- When at all possible, site preparation staging areas will be placed out of the view of the public.
- When at all possible, placement of temporary facilities and camps will be placed in areas designated for operation and maintenance.
- Temporary facilities and camps will be in harmony with their surroundings when at all possible.
- Marking of roads will be planned in advance and communicated with all parties involved.
- Where possible, excavation activities will be carried out in areas with poor visibility into the site.
- In case construction activities occur at night, lights will be directed towards the work area. Reflective lights will be avoided so as to not reflect areas not in use for construction.
- Consideration will be given to landscape harmony.
- Any logo to be placed on the wind turbines will be discrete.
- The project will comply with applicable regulations concerning lighting.
- To avoid attraction of birds, bats, and/or any species that may migrate at night, lighting will be restricted to those required for aviation safety. This will limit interruption of the night landscape.

4.12.4 Description of LORS

Federal

National Environmental Policy Act

The National Environmental Policy Act (NEPA) (42 USC 4321) states that it is the Federal government's continuing responsibility to use all practicable means to preserve important historic, cultural, and natural aspects of our national heritage. It instructs Federal agencies to prepare environmental impact statements for each major Federal action having a significant effect on the environment.

The MIA report conducted an extensive analysis of impacts on visual resources, similar in scope and effort to a NEPA analysis. The MIA report included calculations and visual simulations from a digital land modeling system, as well as photographs from various points of observation. The MIA report also identified mitigation measures to reduce impacts on visual resources. As a result, the ESJ Wind Project was analyzed in substantially the same way as a project constructed within California.

State

California Environmental Quality Act

CEQA sets statewide policies that provide the framework by which California public agencies assess environmental impacts and consequences of projects. Under CEQA, a lead agency determines whether a project would cause a significant environmental impact on the environment. The lead agency may propose mitigation measures to reduce significant impacts.

As discussed above, the MIA report included calculations and visual simulations from a digital land modeling system, as well as photographs from various points of observation. The MIA report also identified mitigation measures to reduce impacts on visual resources. As a result, the ESJ Wind Project was analyzed in substantially the same way as a project constructed within California.

Local

Imperial County General Plan

The Conservation and Open Space Element of the General Plan (Imperial County 1993) directs the County to evaluate the compatibility of proposed development projects with the preservation of visual resources and open space. The Plan sets forth the following goal and objectives for the conservation and preservation of visual resources:

- Goal 7: The aesthetic character of the region shall be protected and enhanced to provide a pleasing environment for residential, commercial, recreational, and tourist activity.

- Objective 7.1 Encourage the preservation and enhancement of the natural beauty of the desert and mountain landscape.

- Goal 10: Open space shall be maintained to protect the aesthetic character of the region, protect natural resources, provide recreational opportunities, and minimize hazards to human activity.
  - Objective 10.9 Conserve desert lands, within the county's jurisdiction for wildlife protection, recreation, and aesthetic purposes.

Consistent with the types of goals and objectives described above, the MIA evaluated the visual compatibility of the proposed ESJ Wind Project and developed mitigation measures to minimize the impact of the proposed project on the aesthetic of the project area, including avoiding siting turbines in protected viewsheds. The MIA determined that because of the low visibility of the majority of the project site, the proposed project would have an acceptable level of impact on the visual character of the region. As such, the ESJ Wind Project was evaluated for compatibility with the visual environment similar to a project constructed within California. For the reasons described above, the proposed project will be developed and operated in a manner as protective of visual quality as a similar project located in California.

4.13 WASTE MANAGEMENT / HAZARDOUS MATERIALS HANDLING

4.13.1 Environmental Concerns

Waste management/hazardous materials concerns relate to significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials. In addition, there would be adverse impacts if the proposed project is located on a site listed on a known hazardous materials site.

4.13.2 Potential Areas of Impact

As described in Table V.3.1.1-1 of the MIA report, there is no evidence of ground contamination within the proposed project site.

Project phases that would impact waste management/hazardous materials handling include site preparation, construction, operations and maintenance, and site abandonment. The proposed project would involve transporting and use of limited quantities of hazardous materials such as diesel fuels during all of these phases, and would have potential adverse impacts. Of the 12 adverse impacts identified in the MIA report, one would be considered moderate; none would be considered severe or critical. The analysis identified 1 moderate adverse impact on ground quality from storage of combustibles. After applying mitigation to this moderate adverse impact, it would become less than moderate.

4.13.3 ESJ Analytical Requirements and Mitigations

The following plans, described in Table 3, will include measures that minimize potential waste- and material-related impacts:

- Construction, Operation, and Maintenance Support Plan
- Waste Management Plan

To mitigate potential impacts related to hazardous material storage and waste management, the MIA report proposed the following mitigations:

- Transportation of oil used for turbines and gas used for operation of vehicles will be performed by a licensed contractor in compliance with Mexican law.
- Precautions will be taken to avoid spills.
- Combustibles will be stored in separate areas that will be designated for storage of oil and gas following accepted standards.
- Repair and maintenance equipment will be stored in a designated area.
- Any wastes will be stored in special containers and will be disposed of in compliance with Mexican law. These will be periodically collected by a licensed contractor.

4.13.4 Description of LORS

Federal

The Superfund Amendments and Reauthorization Act of 1986 Title III and the Resource Conservation and Recovery Act

These statutes require a nationwide emergency planning and response program with reporting and other requirements for businesses that store, handle, or produce significant quantities of hazardous materials.

The ESJ Wind Project would not store, handle, or produce significant quantities of hazardous materials or wastes. Therefore, these regulations would not apply.

State

California Code of Regulations Title 22

Title 22 defines and categorizes hazardous materials and wastes. The term "hazardous materials" refers to substances, which, if released in an unregulated manner, can be harmful to people, animals, property, and the environment. Title 22 defines a hazardous material as:

"... a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (2) pose a substantial present of potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed."

Similar to Title 22, Mexican law defines hazardous materials and hazardous waste; additional laws regulate transport, storage, and handling of these materials. The ESJ Wind project will comply with Mexican law in the treatment of such materials. The discharge of any hazardous materials or contaminants during construction and ongoing facility operations is not anticipated. Measures will be put in place during construction and maintenance to provide safety measures and protocols for storage and handling of hazardous materials, and contingency plans for any spills or releases. As a result, this project would be

constructed and operated in a manner as protective of the environment as if it were located in California.

California Health and Safety Code, Section 41700

This section states that "No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause or have a natural tendency to cause injury or damage business or property."

The discharge of any hazardous materials or contaminants during construction and ongoing facility operations is not anticipated. Measures will be put in place during construction and maintenance to provide safety measures and protocols for storage and handling of hazardous materials, and contingency plans for any spills or releases. As a result, this project would be constructed and operated in a manner as protective of the environment as if it were located in California.

Local

Imperial County General Plan

The Seismic and Public Safety Element (Imperial County undated) of the Imperial County General Plan contains the following goals and objectives to control hazardous materials:

- Goal 3: Protect the public from exposure to hazardous materials and wastes.
  - Objective 3.1 Discourage the transporting of hazardous materials/waste near or through residential areas and critical facilities.
  - Objective 3.2 Minimize the possibility of hazardous materials/waste spills.
  - Objective 3.3 Discourage incompatible development adjacent to sites and facilities for the production, storage, disposal, and

transport of hazardous materials/waste as identified in the County General Plan and other regulations.

- Objective 3.4 Adopt and implement ordinances, policies, and guidelines that assure the safety of county ground and surface waters from toxic or hazardous materials and wastes.

As discussed in the MIA report, no hazardous materials are known to exist on the proposed site. Measures will be put in place during construction and maintenance to provide safety measures and protocols for storage and handling of hazardous materials, and contingency plans for any spills or releases. As a result, this project would be constructed and operated in a manner as protective of the environment as if it were located in California.

4.14 WATER RESOURCES

4.14.1 Environmental Concerns

Environmental concerns for water resources include the following:

- Violate water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- Substantially degrade water quality;

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map
- Place within a 100-year flood hazard area housing or structures such that they would impede or redirect flood flows; or
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including a result of the failure of a levee or dam, or become inundated by seiche, tsunami, or mudflow.

4.14.2 Potential Areas of Impact

Existing conditions for water resources in the proposed project area are described in Chapter IV.2.1.4 of the MIA report. The project site is within Hydrological Region No. 1 Northwest Baja California (Ensenada). The state of Baja California is one of the most arid parts of the country; rainfall in the area of the project site is generally less than 100 mm (4 inches) per year. Little surface water is present in the project area and is limited to intermittent streams.

There are no point source discharges associated with the project, but construction activities have the potential to impact surface and groundwater quantity. The MIA report identified potential impacts on water resources that could occur as a result of site preparation, construction, operation and maintenance, and abandonment project phases. The impact analysis determined that potential impacts on water resources would be irrelevant or compatible (negligible). No moderate, severe, or critical impacts on water resources were identified. The MIA report indicated that no areas subject to flooding occur in the project area.

4.14.3 ESJ Analytical Requirements and Mitigations

The ESJ analysis did not propose any specific mitigation measures for potential impacts on water resources because the impacts were not determined to be moderate, severe, or adverse. However, the following two plans, described in Table 3, will include measures that protect surface water resources:

- Erosion and Sediment Control Plan
- Study, Rescue, and Protection of Flora and Rehabilitation Plan

4.14.4 Description of LORS

Federal

Clean Water Act

The Clean Water Act (33 USC §1257 et seq.) requires states to set standards to protect water quality. Discussion of this legislation is found below under State LORS.

State

State Water Resources Control Board – National Pollutant Discharge Elimination System

Under provisions of the Clean Water Act, the State Water Resources Control Board adopted two general National Pollutant Discharge Elimination System (NPDES) permits for control of storm water runoff during construction and operation of industrial facilities. Under the General Construction Activity Permit, developers are required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) if activities disturb greater than five acres. This plan identifies best management practices to reduce sediment, oil, and other contaminants in storm water discharges from the site. The General Industrial Activities Permit also requires developers of industrial facilities, such as power plants, to prepare and implement a SWPPP that identifies best management practices to reduce the discharge of contaminants from facility operation in storm water discharge.

The MIA report indicated that an Erosion and Sediment Control Plan, similar to an SWPPP, would be developed to mitigate potential impacts on water resources associated with project construction and operational activities. This plan would include best management practices to prevent and control pollution. As a result, this project would be as protective of the environment as a project built in California and subject to NPDES requirements.

Porter-Cologne Act of 1969

The Porter-Cologne Act is the principal law governing water quality in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. Unlike the Clean Water Act, Porter-Cologne applies to both surface water and groundwater. There are no discharges to groundwater proposed for the ESJ Wind Project. The State Water Resources Control Board has not established separate construction-related requirements apart from the General Construction Activity General Permit. The state regulations also require preparation of a SWPPP. Similar to the analysis above regarding Clean Water Act requirements, because the project has insignificant impacts on water quality and because its minor impacts are addressed in the MIA and Erosion and Sediment Control Plan, the proposed project will be developed and operated in a manner as protective of the environment concerning water resources as a project located in California.

California Environmental Quality Act

CEQA sets statewide policies that provide the framework by which California public agencies assess environmental impacts and consequences of projects. Under CEQA, a lead agency determines whether a project would cause a significant environmental impact on the environment. The lead agency may propose mitigation measures to reduce significant impacts.

Similar to a CEQA analysis, the MIA assessed the potential for impacts on water resources. As disclosed by the MIA, the proposed project would result in negligible adverse impacts on water resources during construction and operation. Given the absence of any moderate, severe, or critical impacts on water resources requiring mitigation, the project is as consistent with the requirements of CEQA as a similar project built in California.

Local

Imperial County General Plan

The Conservation and Open Space Element of the General Plan (Imperial County 1993) directs the County to evaluate the compatibility of proposed development projects with the preservation of water resources. The plan sets

forth the following applicable goal and objectives for the conservation and preservation of water resources:

- Goal 8: The County will conserve, protect, and enhance the water resources in the planning area.
  - Objective 8.1 Protect all bodies of water and water courses for their continued use and development.
  - Objective 8.3 Regulate development in or adjacent to water bodies and courses, protect water bodies, and minimize property damage.
  - Objective 8.4 Ensure the use and protection of the rivers and other waterways in the county. Ensure proper drainage and provide accommodation for storm runoff from urban and other developed areas in manners compatible with requirements to provide necessary agricultural drainage.
  - Objective 8.5 Protect and improve water quality and quantity for all water bodies in Imperial County.
  - Objective 8.6 Eliminate potential surface and groundwater pollution through regulations as well as educational programs.
  - Objective 8.8 Ensure protection of water bodies that are important for recreational fishing.
  - Objective 8.10 Discourage the use of hazardous materials in areas of the county where significant water pollution could pose hazards to humans or biological resources.
  - Objective 8.11 Identify watersheds (recharge areas) and key areas for the protection of water quality and groundwater.
  - Objective 8.13 Encourage water conservation and efficient water use among municipal and industrial water users, as well as reclamation and reuse of wastewater.

- Objective 8.14 Coordinate with the appropriate agencies for the availability of water to meet future domestic, industrial/commercial, and agricultural needs.

The MIA report was prepared to identify and analyze potential impacts on water resources. While no significant impacts requiring mitigation were identified, the ESJ Wind Project has incorporated protection measures such as an Erosion and Sediment Control Plan into project planning to minimize the potential for impacts on water resources. For these reasons, the proposed project would be developed and operated in a manner as protective of the environment as if it were located in California.

4.15 WORKER SAFETY

4.15.1 Environmental Concerns

Worker safety is not an environmental impact area but is frequently covered in CEQA documents, particularly at the California Energy Commission. Worker safety concerns relate to increased risk of injury associated with the use of heavy equipment, increased traffic, hazardous materials, blasting, and other risks associated with working near high voltage lines during construction and maintenance.

4.15.2 Potential Areas of Impact

Specific worker safety issues were not described in Chapter IV of the MIA report. However, Chapter III of the MIA (Table III.3.4-1) details Mexican regulations related to workplace safety, and Chapter II.9 of the MIA report states that all necessary measures will be considered to ensure the safety of workers and contractors. The ESJ Wind Project will meet the safety requirements established by Mexican worker safety regulations, as well as the requirements established by the US OSHA law, as applicable.

Project phases that would impact worker safety include site preparation, construction, operations and maintenance, and site abandonment. No adverse impacts on worker safety were identified in the MIA report.

4.15.3 ESJ Analytical Requirements and Mitigations

The following plans, described in Table 3, will include measures that prevent impacts on worker safety:

- Construction, Operation and Maintenance Support Plan

The MIA report did not propose any specific mitigation measures for impacts on worker safety because no adverse impacts were identified. However, the following mitigation for other resources address aspects of worker safety:

- During explosive activities, all necessary protective gear such as face masks, hard hats, safety goggles, ear plugs, steel toe boots, etc. will be worn.
- All personnel will be well marked with reflective wear. Additionally, areas designated for detours along the main roads that lead to the work sites will be well illuminated.

4.15.4 Description of LORS

Federal

Code of Federal Regulations §1910: Occupational Safety and Health Standards
These federal regulations address safe practices and personal protection, including personal protective wear, medical and first aid practices, warning signs, accident prevention signs, protective barriers, and working with hazardous materials.

The ESJ Wind Project would implement protective measures during construction, operation, and abandonment. A Construction, Operations, and Maintenance Plan would be prepared and would include worker safety procedures to ensure the safety of workers and contractors. In addition, the project would meet the safety requirements established by Mexican regulations, or the requirements established by the federal OSHA law, as applicable. The ESJ project could be subject to random workplace safety audits by the *Secretaría del Trabajo y Previsión Social* (STPS; Department of Labor and Social Welfare) to ensure that the facility is being operated in compliance with applicable laws and

regulations pertaining to workplace and worker safety. As a result, the ESJ Wind Project would be as protective of worker safety as if the project were built in California.

State

California Code of Regulation, Title 8, §3300-6184

Similar to the federal OSHA law, these regulations address safe practices and personal protection, including personal protective wear, medical and first aid practices, warning signs, accident prevention signs, protective barriers and working with hazardous materials.

As described above, the ESJ Wind Project would implement protective measures during construction, operation, and abandonment. A Construction, Operations, and Maintenance Plan would be prepared and would include worker safety procedures to ensure the safety of workers and contractors. In addition, the project would meet the safety requirements established by Mexican regulations, or the requirements established by the federal OSHA law, as applicable. As a result, the ESJ Wind Project would be developed and operated in a manner as protective of worker safety as a similar project located in California.

Local

Imperial County General Plan

The Imperial County General Plan contains the following emergency preparedness goals and objective:

- Goal 2: Minimize potential hazards to public health, safety, and welfare and prevent the loss of life and damage to health and property resulting from both natural and human-related phenomena.
    - Objective 2.5 Minimize injury, loss of life, and damage to property by implementing all state codes where applicable.

The ESJ Wind Project would implement protective measures during construction, operation, and abandonment. A Construction, Operations, and Maintenance Plan would be prepared and would include addressing emergency procedures. See Section 4.6, Geologic Hazards, and Section 4.9, Public Health and Safety, for further discussion of mitigation of impacts on human health and safety. For the reasons stated above, the proposed project would be developed and operated in a manner as protective of public health and safety as a similar project located in California.

4.16 FIRE SAFETY

4.16.1 Environmental Concerns

Environmental concerns for fire safety relate to whether the project would expose people or structures to a risk of loss, injury, or death involving wildland fires.

4.16.2 Potential Areas of Impact

The project area is susceptible to fire, and there have been records of brush fires within the project site.

Project activities could increase the risk of fire through sparking during the use of vehicles and heavy equipment, and from personnel smoking on-site. Vehicles driving on vegetated areas prior to clearing and grading could increase the risk of fire. The environmental permit issued by SEMARNAT require the preparation of a Fire Protection Plan for the ESJ Wind Project that will include fuel modification, equipment, and training requirements.

Chapter V of the MIA report identified 20 adverse impacts associated with fire risks, 5 of which were considered moderate. Moderate impacts would occur from vegetation clearing (during construction and operations and maintenance phases); blasting; storage of combustibles; and dismantling and demolition. After applying mitigation to the 5 moderate adverse impacts, they would become less than moderate.

4.16.3 ESJ Analytical Requirements and Mitigations

To reduce fire hazards, Chapter VI of the MIA requires the development of a Fire Protection Plan as described in Table 3 and the following mitigations:

- Identify and report any dry vegetation within close proximity to the trajectory of the transmission line that may cause fire hazards.
- Apply retention barriers.
- Properly manage vegetation within proximity of the trajectory of the transmission line.
- The storage area will comply with LGEEPA, Chapter III and the General Law for Prevention and Integral Procedures of Wastes (*Ley General para la Prevención y Gestión Integral de los Residuos*), Chapter IV regulation of hazardous/dangerous waste.
- ESJ and its contractors will coordinate with the Tecate Fire Department prior to construction and operation of the proposed project, including submittal of the Fire Protection Plan required by SEMARNET in the MIA.

4.16.4 Description of LORS

Federal

No federal requirements related to fire were identified.

State

California Fire Code

The California Fire Code is contained within Chapter 9 of Title 24 of the California Code of Regulations. The California Fire Code is created by the California Buildings Standards Commission and regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The California Fire Code and the California Building Code use a hazards classification system to determine the appropriate measures to incorporate to protect life and property.

Mitigation measures related to hazardous material use and storage would reduce the likelihood of wildland fire and would establish protocols to effectively extinguish any unanticipated fire on-site. A Fire Protection Plan, which would be approved by SEMARNAT, is required prior to construction. For these reasons, the project would implement practices and measures similar to and as protective as those that would be required under the California Fire Code for a project in California.

California Health and Safety Code

State fire regulations are established in Section 13000 of the California Health and Safety Code. The section establishes building standards, fire protection device equipment standards, high-rise building and childcare facility standards, interagency support protocols, and emergency procedures. Also, Section 13027 states that the state fire marshal shall notify industrial establishments and property owners having equipment for fire protective purposes of the changes necessary to bring their equipment into conformity with, and shall render them such assistance as may be available in converting their equipment to, standard requirements.

Implementation of mitigation measures would reduce the likelihood of wildland fire and would establish protocols in the Fire Protection Plan to effectively extinguish any unanticipated fire on-site. As such, the proposed project would be developed and operated in a manner as protective of the environment with regard to fire risk as a similar project located within California.

Local

Imperial County General Plan, Seismic and Public Safety Element

The Seismic and Public Safety Element (Imperial County undated) of the Imperial County General Plan identifies goals and policies to minimize fire risks, and specifies land use planning procedures that should be implemented to avoid hazardous situations. The plan sets forth the following goals and objectives for land use planning and public safety relating to fire safety:

- Goal 1, Objective 1.8: Reduce fire hazards by the design of new developments.

- Goal 2, Objective 2.8: Prevent and reduce death, injuries, property damage, and economic and social dislocation resulting from natural hazards, including flooding, land subsidence, earthquakes, other geologic phenomena, levee or dam failure, urban and wildland fires and building collapse by appropriate planning and emergency measures.

Mitigation measures would reduce the likelihood of wildland fire and would establish protocols to effectively extinguish any unanticipated fire on-site. For these reasons, the proposed project would be developed and constructed in a manner as protective of the environment as a similar project located in California.

Uniform Fire Code

The uniform fire code contains provisions necessary for fire prevention and information about fire safety, special occupancy uses, special processes, and explosive, flammable, combustible, and hazardous materials. Uniform Fire Code (UFC) Standards is a companion publication to the UFC and contains standards of the American Society for Testing and Materials and of the National Fire Protection Association. The Fire Protection Plan and other mitigation measures would reduce the likelihood of wildland fire and would establish protocols to effectively extinguish any unanticipated fire on-site. As such, the project would be consistent with the UFC and would be developed and operated in a manner as protective of the environment as a similar project located within California.

Fire Prevention and Explosives Ordinance, Section 53101-53300

The Fire Prevention and Explosives Ordinance contains provisions for the purpose of prescribing regulations governing conditions hazardous to life and property from fire or explosion. Such measures in this ordinance include the following:

- Storage of flammable materials
- Storage of radioactive materials
- Permit required for sale and use of fireworks

- Abatement of weeds and other vegetation

These measures reduce the risk of fire as a result of the storage of flammable materials and the introduction of exotic weeds to unincorporated areas of Imperial County. Flammable and radioactive materials would not be stored on-site. Further, fireworks would not be sold or used. Abatement of weeds and other vegetation would be as described in the Biological Resources section. As such, the project would be consistent with the Fire Prevention and Explosives Ordinance and be developed and operated in a manner as protective of the environment as a similar project built within California.

This page intentionally left blank.

CHAPTER 5
REFERENCES

Avian Power Line Interaction Committee. 1994. Mitigating bird collisions with power lines: the state of the art in 1994. Edison Electric Institute, Washington, DC.

_____. 2006. Suggested practices for avian protection on power lines: the state of the art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, DC and Sacramento, CA.

City Population. 2012. 2000, 2005, and 2010 Census Population Data, Tecate (Municipality, Baja California, Mexico). Internet Web site: http://www.citypopulation.de/php/mexico-bajacalifornia.php?adm2id=02003. Accessed on January 20, 2012.

Corporación Ambiental de México, S.A. de C.V. 2009. Manifestación de Impacto Ambiental Modalidad Regional. Proyecto "Energía Sierra Juárez" Construcción y operación de un parque Eoloeléctrico, Municipios de Tecate, Ensenada y Mexicali, B.C., México. *(Environmental Impact Statement for the Construction and Operation of the Energía Sierra Juárez Wind Project, Municipalities of Tecate, Ensenada, and Mexicali, B.C., Mexico)*. August 2009.

Guía-Ramírez, Andrea. 2005. Human-Faunal Relationships in Northwestern Baja California. Proceedings of the Society for California Archaeology, Volume 18, 2005.

Imperial County APCD (Air Pollution Control District). 2007. CEQA Air Quality Handbook. Internet Web site: http://imperialcounty.net/AirPollution/Forms&Documents/CEQA/CEQAHandbkNov2007.pdf. Accessed on October 22, 2011.

Imperial County. Undated. Imperial County General Plan Seismic and Public Safety Element.

_____. 1993. Imperial County General Plan Conservation and Open Space Element.

_____. 1996. Imperial County General Plan Agriculture Element. Adopted November 9, 1993. Revised November 19, 1996.

_____. 2008. Imperial County General Plan Land Use Element. Approved January 29, 2008.

_____. 2008b. Imperial County General Plan Housing Element.

Instituto de Ecologia. A.C. No Date. Estudio de Aves y Quiropteros en el area del Ejido Jacume, en donde se instalara la Fase Uno del Proyecto Eolico "Energia Sierra de Juarez"(Avian and Bat Study).

International Conference of Building Officials. 1994. Uniform Building Code.

Lieberman, Alan, L. Nordstrom, J. Sheppard, and J. Vargas. 2011b. Sempra Generation Energía Sierra Juárez Wind Project, Annual Report – 2010. San Diego Zoo Institute for Conservation Research, San Diego, CA. January 15, 2011.

_____. 2011b. Sempra Generation Energía Sierra Juárez Wind Project, First Quarter Report. San Diego Zoo Institute for Conservation Research, San Diego, CA. April 2011. 10pp

Oviedo Garcí, Fernando. 2005. El Vallecito: A Prehistoric Site in Baja California. In Symposium 13: The Archaeological of Baja California. Translated from Spanish by Don Laylander.

Secretaria de Medio Ambiente y Recursos Naturales. 2010. NORMA Oficial Mexicana NOM-059-SEMARNAT-2010, Protección ambiental-Especies nativas de México de flora y fauna silvestres-Categorías de riesgo y especificaciones para su inclusión, exclusión o cambio-Lista de especies en riesgo. Mexico: Diario Oficial de la Federacion.

Secretary of Environment and Natural Resources (SEMARNAT). 2006. Geographic Atlas of the Environment and Natural Resources, pages 14-16. Accessed on October 1, 2011.

Serrano, Jose. 1997. Proyecto sitio arqueológico "El Vallecito." In *Memoria anual del seminario de historia de Baja California*, pp. 66-74. Instituto de Investigaciones Históricas de la UABC, Tijuana. Cited in Guía-Ramírez 2005.

(DOE/EIS-0414-S1)

Appendix-2

Energía Sierra Juarez, LLC Wind Project
General Department of Environmental Impact and Risk (DGIRA) (translation) July 2010)

[stamp]
UNITED MEXICAN STATES
SECRETARIAT OF THE ENVIRONMENT
AND NATURAL RESOURCES

OFFICE OF THE UNDER-SECRETARY
FOR ENVIRONMENTAL PROTECTION
GENERAL DEPARTMENT OF
ENVIRONMENTAL IMPACT AND RISK

S.G.P.A./DGIRA.DG.4751.10

[stamp]
SECRETARIAT OF THE ENVIRONMENT
AND NATURAL RESOURCES
SENT
JULY 21, 2010
GENERAL DEPARTMENT OF
ENVIRONMENTAL IMPACT and RISK

Mexico, D.F., JULY 15, 2010
For responsible use of paper, the information
copies of this matter are sent electronically

"2010 Year of the Motherland. Bicentennial of the Beginning of Independence and Centennial of the Beginning of the Mexican Revolution."

Mr. ALBERTO ABREU
DIRECTOR OF PROJECT DEVELOPMENT
OF ENERGÍA SIERRA JUÁREZ, S. DE R. L. DE C. V.
MONTE LÍBANO 235-401, COL. LOMAS DE CHAPULTEPEC
ZIP CODE 11000, MEXICO, D.F.
TEL.: 52 49 93 70
FAX: 52 49 93 99
EMAIL: abreu@semprageneration.com; ckessel@sempra-mexico.com

Following the analysis and assessment the declaration of environmental impact, regional modality (**MIA-R)** and the additional information corresponding to the **project** titled Energía Sierra Juárez **(project),** presented by **Energía Sierra Juárez, S. de R. L. de C. V. (petitioner)**, to be located in the municipalities of Tecate and Ensenada, state of Baja California, and

STATEMENT OF FACTS:

I. On September 15, 2009, this General Department of Environmental Impact and Risk (**DGIRA**) received communiqué number SEM/ESJ/001/09 dated the 11th of the same month and year, so that the **petitioner** filed the **MIA-R** [Declaration of Environmental Impact – Regional] for environmental analysis and assessment, in order to obtain the corresponding authorization for the **project**, as well as the analysis and assessment of the environmental impact arising from the change of land use in forest areas; it was registered under code **02BC2009E0007.**

II. On September 17, 2009, the filing of the **project MIA-R** was published in the pull-out supplement number DGIRA/047/09 of Gaceta Ecológica. This documentation was made available to the public in the Documentary Center, located at Av. Revolución Number 1425, Mezzanine, Ground Floor, Delegación Álvaro Obregón, Mexico City, Federal District, according to the provisions of articles

[signatures]

34, section I of the General Law for Ecological Balance and Environmental Protection (**LGEEPA**) and 37 and 38 of its regulation in Matters of Environmental Impact Assessment (**REIA**).

Furthermore, pursuant to the provisions of article 35 of **LGGEPA** [sic] and 21 of its **REIA**, this **DGIRA** completed the file of the **project** and started the procedure of environmental impact assessment (**PEIA**).

III. On September 29, 2009, this **DGIRA** received communiqué number SEM/ESJ/002/09 dated the 28th of the same month and year, by which the **petitioner** filed a copy of page 5C, section C, of the newspaper El Mexicano dated September 21, 2009, which published the extract of the **project**, according to the provisions of article 34, section I, **LGEEPA.**

IV. On September 29, 2009, this **DGIRA** received the communiqué without number and date through which the citizens listed below in the communities where the **project** is intended to take place, pursuant to the provisions of articles 34, section II **LGEEPA** and 40 **REIA**, requested that the **project** be submitted to the public consultation process:

Number	Applicant	Commune
1	Mr. Juan Manuel Garcia Caudillo	Ensenada, Baja California
2	Mr. Sergio Javier Mata Ugalde	Ensenada, Baja California

V. Pursuant to the provisions of article 41 **REIA**, on October 05, 2009, this **DGIRA** issued the letters by which it communicated to the interested parties its decision to start the public consultation about the **project**, according to the following:

Number	Applicant	Commune
1	Mr. Juan Manuel Garcia Caudillo	SGPA/DGIRA/DG/6511/09
2	Mr. Sergio Javier Mata Ugalde	SGPA/DGIRA/DG/6512/09

VI. Pursuant to the provisions of article 41, Section I, **REIA**, on October 05, 2009, this **DGIRA** issued letter number

SGPA/DGIRA/DG/6513/09, by which it communicated to the **petitioner** its decision to begin the public consultation concerning the **project,** indicating that the latter was to publish, within a term not exceeding five days from the effective date of the communication of the letter in question, an extract of the works and activities of the **project** in a wide circulation newspaper in the state of Baja California, delivering to this **DGIRA** the page of the newspaper or periodical where it was published, according to the provisions of article 42 **REIA**.

VII. To comply with the provisions of article 34, section II **LGEEPA**, on October 05, 2009 this **DGIRA** issued letter number SGPA/DGIRA/DG/6520/09 requesting from the **petitioner** three additional printed copies of the **MIA-R** and its addenda, to make them available to the public both at the Federal Delegation of **SEMARNAT** in the state of Baja California and in the facilities of this **DGIRA**.

VIII. On October 05, 2009, this **DGIRA** issued letter number SGPA/DGIRA/DG/6521/09 by which it delivered to Federal Delegation of **SEMARNAT** in the state of Baja California an electronic copy of the declaration of environmental impact, as well as its addenda, so that this secretariat may make them available to the public requiring it from the offices of this Delegation.

IX. On October 05, 2009, **SEMARNAT** made available to the public the **MIA-R** of the **project**, both at the offices of the Information Center for Environmental Management located in the Federal District and at the offices of the delegation of **SEMARNAT** in the state of Baja California, located in Mexicali and Ensenada, state of Baja California; this arises from the detailed minutes found in the archives of this **DGIRA**.

X. On October 08, 2009, this **DGIRA** requested the technical opinion concerning the development of the **project**, both from the General Department of Environmental Policy and Regional and Sectorial Integration (**DGPAIRS**), the General Department of Forest Life (**DGVS**), the National Commission for the Knowledge and Use of Biodiversity (**CONABIO**) and the National Commission of Natural Protected Areas (**CONANP**); Furthermore, it communicated the

[signatures]

entry of the **project** to **PEIA** in the municipalities of Tecale, Ensenada and Mexicali, as well as to the Secretariat for Environmental Protection and the Secretariat for Infrastructure and Urban Development, both of the Government of the state of Baja California, according to the following:

Letter number	Administrative Unit
SGPA/DGIRA/DG/6616/09	General Department of Environmental Policy and Regional and Sectorial Integration
SGPA/DGIRA/DG/6617/09	General Department of Wild Life
SGPA/DGIRA/DG/6618/09	National Commission of Natural Protected Areas
SGPA/DGIRA/DG/6619/09	National Commission for the Knowledge and Use of Biodiversity
SGPA/DGIRA/DG/6611/09	Municipality of Ensenada, Baja California
SGPA/DGIRA/DG/6612/09	Municipality of Tecate, Baja California
SGPA/DGIRA/DG/6613/09	Municipality of Mexicali, Baja California
SGPA/DGIRA/DG/6614/09	Secretariat for Infrastructure and Urban Development of the Government of the State of Baja California
SGPA/DGIRA/DG/6615/09	Secretariat of Environmental Protection of the Government of the State of Baja California

XI. On October 12, 2009, this **DGIRA** received communiqué number SEM/ESJ/004/09 with the same date, by which the **petitioner** presented copies of the **MIA-R** requested through the letter cited in statement of facts number **VII** of this letter.

XII. On October 13, 2009, this **DGIRA** received communiqué without number dated the 01st of the same month and year, by which Mr. José Manuel Salcedo Sañudo, citizen of one of the communes where the **project** is intended to be developed, pursuant to the provisions of articles 34 **LGEEPA** and 40 **REIA** requested that the **project** be subject to the public consultation process.

XIII. On October 20, 2009, this **DGIRA** received communiqué number SEM/ESJ/006/09 dated the 19th of the same month and year, by which the **petitioner** delivered a copy of page 4C, Section "The Country" of the newspaper "El Mexicano," dated October 13, 2009, where the extract of the **project** was published, with the purpose of complying with the requirements indicated in the letter cited in statement of facts number VI of this letter.

[signatures]

XIV. On October 20, 2009, this **DGIRA** received copy of communiqué number SEM/ESJ/005/09 dated the 12th of the same month and year, by which the **petitioner** presented two copies of the **MIA-R** to the **SEMARNAT** delegation in the state of Baja California, with the purpose of complying with the letter cited in statement of facts number VII of this letter.

XV. On October 22, 2009, this **DGIRA** issued letter number SGPA/DGIRA/DG/6813/09 by which it communicated to Mr. José Manuel Salcedo Sañudo that this Secretariat decided to start the public consultation procedure of the **project**, according to the provisions of article 41 **REIA**, complying with the terms of the law.

XVI. On October 27, 2009, this **DGIRA** received, duly filled by Mr. Jaime García Toscano, the questionnaire made available to the public on the web page of **SEMARNAT**, so that any citizen may deliver his or her observations and/or comments concerning the development of the **project** during the public consultation process established for the **project**.

XVII. On November 05, 2009, this **DGIRA** received letter number **DGPAIRS**/598/09 dated October 20 of the same year, by which **DGPAIRS** delivered the technical opinion requested in statement of fact number X of this letter.

XVIII. On November 06, 2009, this **DGIRA** received letter number 007832 dated the 02nd of the same month and year, by which this Secretariat for Infrastructure and Urban Development of the Government of the State of Baja California delivered its observations as requested in statement of fact number X of this letter.

XIX. On November 06, 2009, the pull-out supplement number DGIRA/059/09 of Gaceta Ecológica and the electronic page www.**SEMARNAT**.gob.mx published the Call to Public Information Meeting of the **project**, inviting the academic institutions, researchers, social and production groups, non-government organizations, members of the consulting councils for sustainable development

[signatures]

and society in general to participate in said act, to be held on November 12, 2009, indicating the participation objectives and agenda, according to the provisions of articled 34 section III **LGEEPA** and 43 **REIA**, 2, section XIX, 12, section IV, 19 and 27 of the Internal Regulation of **SEMARNAT**.

Furthermore, it is important to indicate that, according to the provisions of article 43, section I **REIA**, said call was also published on page 21-A, "General" section of the newspaper "Frontera," in its edition of November 06, 209.

XX. On November 12, 2009, as established in article 43 **REIA**, the "Public Information Meeting" of the **project** was held in the municipality of Tecate, State of Baja California; the corresponding "Detailed Minute" was issued and included in the file of the **project**, containing the attendance list, the name of the persons registered to speak and the number of registered participants; the speeches and questions presented were also included in the file.

XXI. On November 13, 2009, this **DGIRA** received letter number F00.DRPBCPN.-940/2009 dated the 11th of the same month and year, by which the Regional Department of the Peninsula of Baja California and Northern Pacific of **CONANP** rendered the technical opinion requested in statement of fact number **X** of this letter.

XXII. On November 13, 2009, this **DGIRA** received letter number DTAP/511/2009 of the 12th of the same month and year, by which **CONABIO** delivered the technical opinion requested in statement of fact number **X** of this letter.

XXIII. On November 13, 2009, this **DGIRA** received the note without number of the same date, by which **UCPAST** delivered the originals of the documentation generated during h public information meeting of the **project**.

XXIV. On November 17, 2009, this **DGIRA** received a copy of note number AN.09/2931 dated the 13th of the same month and year, by which

[signatures]

UCPAST communicated to the appropriate Secretary that, on November 12, 2009, the public information meeting of the **project** had been held, with a total of 127 citizens participating, of whom 16 presented observations to the **project**; of them, three disagree with the development of the **project** and 13 are in favor, acknowledging the appropriateness of developing the **project**.

XXV. On November 20, 2009, this **DGIRA** received letter number SGPA/DGVS/0785/09 dated the 19th of the same month and year, by which **DGVS** delivered the technical opinion requested in statement of fact number **X** of this letter.

XXVI. On November 20, 2009, this **DGIRA** received the email dated November 18, 2009, by which the students of the Environmental Impact course of the School of Science of the Autonomous University of Baja California delivered observations to the **MIA-R** within the procedure of the Public Information Meeting of the **project**, as indicated in article 43, section V **REIA**.

XXVII. On November 20, 2009, this **DGIRA** received letter number SPA-ENS-1735/09 dated the 03rd of the same month and year, by which the Secretariat of Environmental Protection of the state of Baja California delivered its observations as requested in statement of fact number **X** of this letter.

XXVIII.On November 20, 2009, this **DGIRA** received a copy of the letters issued by the SEMARNAT Delegation in the state of Baja California, by which various authorities, entities and members of the community were invited to participate in the public information meeting of the **project**.

XXIX. On November 26, 2009, this **DGIRA** issued letter number SGPA/DGIRA/DG/7528/09 and notification of December 04 of the same year, by which it requested from the **petitioner** additional information of the documentation cited in statement of fact number **I**, according to the provisions of articles 35 Bis **LGEEPA** and 22 of its **REIA**, suspending the term for the assessment of the **project** according to the aforementioned provisions.

[signatures]

XXX. On November 27, 2009, this **DGIRA** received communiqué number SEM/ESJ/010/09 of the same date, by which the **petitioner** presented information on the observations made in the speeches presented during the public information meeting.

XXXI. On March 17, 2010, this **DGIRA** received communiqué number SEM/ESJ/002/10 of the same date, by which the **petitioner** presented additional requested in the statement of fact number XXIX of this letter.

XXXII. On March 26, 2010, this **DGIRA** issued letter number SGPA/**DGIRA**/DG/2318/10, by which it communicated the resolution corresponding to the **project**, for a period of 60 additional days, as established in article 35 BIS, last paragraph **LGEEPA** and 46, section II, of its **REIA**.

The above was due to the complexity and size of the work and/or activities intended to be performed for the **project**, since they require a detailed analysis both of the documentation originally presented and the additional information provided.

XXXIII.Between May 11 and 13, 2010, a reconnaissance visit took place in the sites where the **project** is intended to take place, with the intervention of technical personnel of the **petitioner** and this **DGIRA**, and

WHEREAS:

1. This **DGIRA** is **competent** to review, evaluate and resolve the **MIA-R** of the **project**, as provided in articles 26 and 32 Bis sections I, XI and XLI of the Organic Law of the Federal Public Administration; 4,5, sections II, X, XI and XXI, 15 sections I, II, IV, VI, XI, XII and XVI, 28 first paragraph and sections II and VII, 30 first paragraph, 34 first paragraph and 35 **LGEEPA**; 2, 4, sections I, III and VII, 5, items; K), sections I, II and III and O), section I, 9, first paragraph, 10, section I, 11, 13, 14, 21, 22, 24, 26, 37, 38

[signatures]

40, 41, 42, 43, 44, 45, section II, 46, section II, 48 and 49 **REIA**; 2 section XIX, 19 sections XXIII, XXV and XXVIII and 27 section II of the Internal Regulation of **SEMARNAT**.

2. This act is provided in **LGEEPA**, in its article 28, first paragraph, sections II and VII and in **REIA**, articles 5, paragraph K), sections I, II and III and O), section I, so that the purpose of **regulated public interest** is met.

3. After making up the file of the **project**, it was made available to the public as indicated in the statement of fact numbers **II, VI, VII, VIII** and **IX** of this resolution, in order to guarantee the social participation right in **PEIA**, as established in articles 34 **LGEEPA** and 40 of its **REIA**, since the Public Consultation is a procedure whose purpose is to allow the participation of the citizens in the assessment of the environmental impact of the **project** in question, to add to the file the observations they make and consider them at the time of the decision concerning the application for authorization since, when the citizens' observations are technically and legally well founded, their impact on the final resolution is considerable; paying attention to these observations, the authority can impose more constraints and mitigation measures for the development of the **project**. Thus, the Public Consultation Procedure is the legal mechanism for the private citizens to feel that their rights can be impaired by the realization of the **project**s, and may declare what they deem appropriate with the certainty that their observations and concerns will be addressed.

Well now, the **MIA-R** for the **project** was filed on September 15, 2009 and, after analyzing the administrative file of the **project** found in the archives of this **DGIRA**, the following was identified:

a) During the **project**'s **PEIA**, requests for public consultation were received from members of society, as indicated in statements of fact **IV, V, XII** and **XV** of this letter.

[signatures]

b) During the Public Consultation of the **project** and within the term of 20 days established in section IV, article 34 **LGEEPA** and 41, section III of its **REIA**, as period of public consultation, a single comment was received concerning the content of the **MIA-R**; said observations did not include proposals for compensation and/or mitigation for the development of the **project**.

c) Arising from the provisions of article 43 **REIA**, in connection with the public information meeting of the **project,** cited in statement of fact number **XX** of this letter, 127 attendants and 16 speakers were registered; the **petitioner** presented the technical environmental aspects of the works and/or activities of which the **project** will consist; after he completed his intervention, the presentations of the participants took place, including arguments and elements not only related to environmental aspects, but also to social, economic and land ownership aspects; afterwards, it continued with the session of questions and answers according to the agenda.

In this sense, from all the speeches presented (16), thirteen support the development of the **project**, arguing that it will promote the use of clean energy in addition to the fact that it will be an economic trigger for the region; furthermore, three declared their disagreement with the **project**, indicating that the **MIA-R** lacks a description of all the works and/or activities involved in the **project**, so that the potential environmental impacts indicated in the **MIA-R** may change once all the works and/or activities are defined, along with the characteristics of the infrastructure that is going to be installed definitively in the **project**.

Conclusion of **DGIRA**
This **DGIRA** requested the **petitioner** to submit additional information, tackling the points indicated in the speeches presented, as well as in the observations and concerns expressed during the session of questions and answers; these included aspects of the identification of the areas to be affected by the development of the **project**, the

[signatures]

size and/or characteristics of the infrastructure to be installed, the characteristics of the sites intended for the installation of the infrastructure concerning the ecological importance of these sites, having to clarify, rectify and/or expand the information contained in chapters numbers **V, VI** and **VII** concerning the impacts identified, and the prevention, control, mitigation and/or compensation measures, once the aforementioned characteristics are described.

On the other hand, it needs to be indicated that, after the end of the public information meeting and according to the detailed minutes drawn up on November 12, 2009, found in the administrative file of the **project**, and indicating that the deadline to receive comments or observations after the end of the meeting would be November 19, 2009, in spite of the fact that the 5 business days indicated in article 43, section V, ended on November 20, 2009, this **DGIRA** received the observations issued as indicated in statement of fact number **XXVI** of this letter.

4. The result of the reconnaissance visit cited in statement of fact **XXXIII** came to the following conclusion:

- *The vegetation present in the sites intended for the construction of the **project**, mainly the polygon identified as ESJ-Jacume, is xerophitic scrubland and bush with various degrees of conservation, while in the zones of polygons ESJ-La Rumorosa, ESJ-Sierra Juárez and ESJ-Cordillera Molina, there are several gradations of vegetation that goes from xerophitic scrublands, bush, pine-oak forest, open pine forest up to pine forest in various succession states, with large areas without vegetation; however, given the marginality of the zone, there is no significant pressure of anthropogenic activities that would place at risk the continuity of the ecosystems; it is foreseen that even if the forest vegetation would be affected by the development of the **project**, said impact will not place at risk its carrying capacity. This is so because the construction progress to be developed is scheduled to take place over a period of at least 60 years which will allow having a continuous process of*

[signatures]

recovery and acceptance of change by said ecosystems.

- *As a result of the construction process intended to be developed it was identified that the impact of the components of the ecosystem will be occasional; in addition, the **project** will not cause a barrier effect for the free displacement of the bird communities present in the zone, since the installation of the wind turbines will be disperse, without forming continuous lines that would place at risk or increase the probabilities of bird collisions with said infrastructure.*

- *The **project** will not install any type of infrastructure in the polygon of the Parque Nacional Constitución de 1857, so that this protected natural area will not be affected.*

5. **DGPAIRS** communicated to this **DGIRA** that, according to the information contained in **MIA-R**, the development of the **project** is viable, since it does not oppose the content of the politics, guidelines and criteria indicated in the *Plan of Ecological Development of the state of Baja California (POEBC), published in the Official Gazette of the state of Baja California on October 21, 2005.*

6. The Secretariat for Infrastructure and Urban Development, both of the Government of the state of Baja California communicated to this **DGIRA** that, according to the information contained in **MIA-R**, the urbanization (*sic)* intended to be performed with the development of the **project** is viable, since it does not oppose the content of the politics, guidelines and criteria indicated in the State Plan of Urban Development of the state of Baja California (POEBC), published in the Official Gazette of the state of Baja California on October 8, 2004; its development is conditioned by the content of the resolution in matters of environmental impact to be issued, as well as compliance with the indications of the Federal, State and Municipal standards in the territorial management units where the **project** takes place (UGT-1, UGT-2, UGT-3 and UGT-7).

7. **CONANP**, through the **Regional Department of the Peninsula of Baja California and Northern Pacific** notified this **DGIRA** that, according to the affirmation contained in the **MIA-R**, the development of the **project** is not viable

[signatures]

because the **project** is opposed to the objectives of the declarations of the Parque Nacional Constitución de 1857 and Parque Nacional San Pedro Mártir, since if the **project** is performed, the implications will go beyond the limits of the zone proposed for the development of eh **project**, directly affecting the areas that include those parks.

In this sense, it is important to indicate that the **project** will not produce any work or infrastructure within said parks, since Parque Nacional San Pedro Mártir is located south of the polygon of the **project** and outside said polygon, and in the particular case of the Parque Nacional Constitución de 1857, even though it is within the polygon of the **project**, it will not be affected in any manner, since the **project** will not produce any type of infrastructure within the area of said national park; in addition, said areas are deemed exclusion zones of development of works and/or activities within the work program of the **project**.

8. **CONABIO** notified this **DGIRA** that, according to the information contained in **MIA-R**, it is necessary to make a special assessment for each of the wind "parks" to be developed by the **project** within the general area of the **project** defined by the **petitioner**, since it will be necessary to update the information on the biodiversity present in the zones intended for its development before the performance of the various works and/or activities.

9. The Secretariat for Environmental Protection of the state of Baja California communicated to this **DGIRA** that, according to the information contained in the **MIA-R**, the development of the **project** is viable, provided it is established the consistency with the ecological criteria indicated in the Ecological Development Program of the state of Baja California, published in the Official Gazette of the state of Baja California on October 21, 2005.

10. **DGVS** communicated to this **DGIRA** that, according to the information contained in the **MIA-R**, especially concerning the proposed mitigation measures, it is necessary that those intended for the protection and conservation of the wild flora and fauna, must be validated by this Secretariat,

[signatures]

prior to the realization of the **project**; furthermore, the **petitioner** must characterize the sites that will receive the species product of the rescue work and bring them to the consideration of this Administrative Unit in order to ensure that it has environmental conditions similar to original ones.

11. Without prejudice to the contents of other legal-administrative regulations, this **DGIRA** did not obtain any answer to the request made to the Municipal Presidencies of Ensenada, Tecate and Mexicali, state of Baja California, as indicated in the statement of fact number **X** of this letter.

12. In order to analyze that the declaration of environmental impact for the **project** will comply with the formalities indicated in articles 9 and 13 **REIA**, this **DGIRA** proceeded as indicated in article 35 first paragraph **LGEEPA**, as follows:

Classification of the **project**

The **project** submitted to **PEIA** consists of the construction and operation of a wind park in the mountain system of Sierra de Juárez, which will generate between 1,000 and 1,200 MW, requiring the installation of up to one thousand wind turbines, distributed in four large areas (1.ESJ-Jacume; 2. ESJ-La Rumorosa, 3. ESJ- Cordillera Molina and 4. ESJ - Sierra de Juárez); furthermore for the development of the **project**, it will required to install transmission lines and electrical substations, offices, equipment and spare parts warehouse, maintenance and repair workshop, temporary and permanent meteorological towers, plus the rehabilitation and construction of a network of access roads for the construction and operation of the various elements and installations.

The **project** will be done in an area of 294,273.64 ha of which only 5,120 ha (1.74%) are required in the various development stages of the **project**. Furthermore, of these, 2,930 ha will be occupied temporarily and will be rehabilitated at the end of the site preparation and construction stages, while the remaining 2,190 ha will be used permanently during the entire useful life of the **project**.

The **project** will be developed in four stages (one for each polygon), the first to be done being tat identified as ESJ-Jacume.

As a result of the above, it is important to indicate that for the rehabilitation and/or construction of the roads required for the **project**, this **DGIRA** is competent only to conduct the assessment of the environmental impacts arising from the removal of the forest or preferably forest vegetation (primary or secondary), since the assessment in the matter of environmental impact by construction and/or rehabilitation of the access roads corresponds to the Government of the State of Baja California, because they are not considered a general communication way and therefore are not adjusted to the events indicated in article 28, section I **LGEEPA** and 5, paragraph B) of its **REIA**; consequently, prior to its development, the **petitioner** must obtain authorization issued in the matter by the Government of the State of Baja California.

Relationship with planning instruments and applicable legal regulations

13. The sites where the **project** is to be developed, as indicated by the **petitioner**, are governed by various legal regulations such as the case of the **State Plan of Urban Development of Baja California** (**PEDUEBC**), published in the Official Gazette of the state of Baja California on October 8, 2004, which is the result of the integration of the Plan of Urban Development and the Plan of Ecological Development of the state of Baja California, published in 1995, as well as the ***Plan of Ecological Development of the state of Baja California*** (***POEBC***), published in the Official Gazette of the state of Baja California on October 21, 2005, indicating the environmental and political feasibility established in the land use regulation.

In this sense, it was established that, as indicated in **POEBC** and **PEDUEBC**, the **project** is contained in the Unit of Environmental Management (according to **POEBC**) or Environmental Management Units according to **PEDUEBC**) numbers 1, 2, 3 and 7, in which the following is indicated:

UGA or UGT	General Policy	Subsystem	Identification characteristic	Special POEBC policy	Special PEDUEC policy
1 Mexicali and its valley	Use with consolidation	1.2.S.11.2.a-2 1.2.S.11.3.a-2 1.2.S.11.1.a-2 1.2.S.3.2.a-2 1.2.S.3.9.a-1	La Rumorosa village Rancho Aldrete, El Alemán Nuevo Oasis – Casa de Piedra Ejido Mi Ranchito, Colonia Luis Echeverría Ejido Real del Castillo, Parque Nacional Constitución de 1857	AIT-AIU ART-ARM ART-ARM ART-ARAI-ARM PUAT	Altu ARtm ARtm ARtaim PUAI
2 Tijuana, Rosarito, Tecate and Ensenada	Use with consolidation	1.2.S.3.9.a-2 1.2.S.3.4.a-3 1.2.S.3.4.a-3 1.2.S.2.4.a-3	El Compadre (Ejido Sierra Juarez) Valle de los Pinos Los Bandidos, Arroyo del Sauzal Ejido Real del Castilllo, Establo Azucena Las Filipinas, Rancho Las Canoas	ARA PUAT-PUAF ARA ART-ARF	ARa PUAtf ARa ARtf
3 Punta Banda-Eréndira	Use with boost	1.2.S.2.1.a-8 1.2.S.2.4.a-1 1.2.S.7.2.a-1	Santa Catarina Indigenous Community Héroes de la Independencia Rancho San Belén Sierra Las Tinajas, La Víbora, Ciénaga Redonda	AIT-ARA ART-ARF ART-ARF	Alt-ARa ARtf ARtf
7 Sierras Norte	Use with regulation	1.2.S.7.9.a 1.2.S.7.10.a-2 2.2.M.7.4.b-2	El Calabozo (Ejido Sierra Juarez) Sierra Las Tinajas, Cañón De Guadalupe, Cañón de la Parra Laguna Salada	ART-ARF ART-ARF-ARM ARM	ARtf ARtfm Arm

Where:

AIT**: Use with Tourism Boost **AIU:** Use with Urban Boost **ARA:** Use with Agricultural regulation **ARAI**: Use with Agroindustrial Regulation **ARF:** Use with Forest Regulation **ARM:** Use with Mining regulation **ART:** Use with Tourism regulation **PUAF:** Protection with Active Forest Use **PUAT:** Protection with Active Tourism Use **Altu:** Use with Tourism Boost, **ARtm:** Use with Tourism and Mining Regulation; **ARtaim:** Use with Tourism regulation and Mining Boost, **Peat:** Protection with Active Tourism Use, **ARa:** Use with agricultural regulation**, PUAtf:** Protection with Active Tourism and Forest Use, **ARTF

[signatures]

Use with Tourism and Forest Regulation, Arm: Use with Mining regulation, Alt-ARa: Use with Tourism Boost and Agricultural regulation, ARtfm: Use with Tourism, Forest and Mining Regulation.

Due to the above, this **DGIRA** identified that the regulations indicated in the tables above do not contain any of the guidelines applicable to the site of the **project** any restrictions for the performance of the works and/or activities inherent thereto; this affirmation coincides with the arguments brought by the Government of the state of Baja California, as well as **DGPAIRS**, which indicated that the **project** does not oppose the provisions of the planning instruments and legal regulations valid for the state of Baja California, and consequently the **project** is compatible with the sustainability policies established in said regulations.

In light of the above, this **DGIRA** determines that the **project** does not oppose the guidelines established in the policies contained in PERBC and **PEDUEBC**.

In the particular case of municipal urban development plans and programs, among the municipalities to be directly impacted by the **project** there are the following:

Municipality of Tecate: It has four partial urban development programs for various regions within its territory, which are:

- Program of Urban Development of the Population Center of the villages of Luis Echeverria and Ejido Baja California of the municipality of Tecate (**PDUCPLE-EBC**).
- Program of Urban Development of the Population Center of the village of La Rumorosa of the municipality of Tecate (**PDUCPLR**).
- General guidelines of urban development of the Urban Development [sic] “Concordia” municipality of Tecate (**DGDUC**).
- Program of Urban Development of the Population Center of Tecate 2001-2022 (PDUCPT).

In this sense, it is important to indicate that the only instruments applicable for the **project** zone are **PDUCPLE-EBC** and **PDUCPLR**, which does not establish restrictions on the development of works and/or

activities inherent to the **project**.

On the other hand, in the case of the municipality of Ensenada, there are six urban development programs. Among them there are the following: the Urban Development Program of the Ensenada Population Center (**PDUCPE**), the Partial Urban Development Program of the zone of the Industrial Corridor of Sauzal, Ensenada, BC (**PPDUCIS**) and the Urban Development Program of the Population Centers of San Quintín and Vicente Guerreo (**PPDCPSQyVG**), of which none is related to the polygon defined for the development of the **project**, since the regulation zone of said urban development programs is mainly along the coastal strip of the Pacific Ocean.

In the case of the municipality of Mexicali, there are at least seven urban development programs, namely: the Urban Development Program of the Population Center of Mexicali 2025 (**PDUCPM**), the Urban Development Program of the Population Center of Mexicali, B.C. 2010 for the Ejido Puebla (**PDUCPM-EjP**), the Urban Development Program Colonia Agrícola Colorado (**PDUCAC**), Urban Development Program of the Population Center of Los Algodones (**PDUCPLA**), Partial Urban Development Program of the Population Center of ciudad Morelos (**PPDUCPCM**), Urban Development Program of the Population Center Estación Coahuila (**PDUCPEC**) and Urban Development Program of the Population Center Guadalupe Victoria (**PDUCPGV**); of these, none is related to the polygon defined for the development of the **project**, because the polygon defined for the development of the **project** is within the territorial boundaries of said municipality, with plans not to affect lands of the municipality; however, if it so happens that due to adjustments in the defined polygon, lands of the municipality would be affected, the **petitioner** must conform itself to the provisions of its legal regulations.

Due to the above arguments, and considering that the **POEBC**, **PEDUEBC**, **PDUCPLE-EBC** and **PDUCPLR** are instruments of the environmental policy that assures a sustainable development in the entity through the implementation of environmental guidelines, controls and restrictions in performing activities, of general and mandatory observance for all private persons, as well as for the offices and entities of the Public Administration, this **DGIRA** concludes that the

[signatures]

observations indicated in this letter are made without prejudice to the environmental attributions of the Federation, states and municipalities, under the principle of competition set forth in article 73, section XXIX-G of the Political Constitution of the United Mexican States, pursuant to article 115 of the Political Constitution of the United Mexican States, which establishes the powers granted to the municipalities, including land use regulation, as well as the provisions of article 8, section II **LGEEPA**, which indicate its attribution in the application of the environmental policy instruments set forth in local laws in the matter, the preservation and restoration of the ecological balance and the protection of the environment in the assets and areas under municipal jurisdiction, in the matters not expressly attributed to the Federation and the states.

The above is due to the fact that this resolution does not obligate and is not binding in any manner for any municipal, state or federal entity to issue its corresponding decision in matters of its own jurisdiction. This is so because this resolution refers only to the environmental aspects of the works and activities set forth in the FIRST Term and this authorization does not in any way constitute a permit to start works, nor does it acknowledge or validate the legitimate ownership and/or holding of land; consequently, the actions determined by the secretariat itself and by the federal, state and municipal authorities within their respective jurisdiction remain valid, as established in articles 35 **LGEEPA** and 49 of its **REIA**.

14. The sites where the **project** should take place, according to the indications of the **petitioner**, will have impact on three priority areas according to the definition of CONABIO, namely the Priority Land Region Sierra de Juárez (RTP-12), the Priority Hydrological Region RHP-11 Delta of Río Colorado and the Area of Importance for Bird Preservation, AICA Sierra Juárez, code NO-16, which have the following characteristics:

RTP-12 Sierra de Juárez is characterized by ecosystems varying from desert to coniferous forests. The main types of vegetation are: bush (chaparral), Microphyllous desert scrublands and pine forest. Furthermore, concerning its functional integrity, it is considered that there is an

alteration of the ecosystems due to defectively planned tourism and forest activities. It also presents an environmental problem caused by tourist activities in "all terrain" vehicles, which damage the ecosystems, plus the extraction of deadwood, with probable impact on cavity nesting-birds.

RHP-11 Delta of Río Colorado is characterized by a modification of the environment mainly caused by the salinization of the aquifers, soil degradation and formation of channels. Furthermore, there is high contamination with agrochemicals and industrial and urban discharges, even though it must be mentioned that these activities in the zone of the **project** are not representatives, being an important problem in the zone of Valle Imperial, where contaminants of all types are discharged into the river, coming from the irrigation districts of Arizona and the valley of San Luis in Mexico.

AICA Sierra Juárez, categorized as such because it is a Mediterranean Forest, unique biome in North America, hosting more than 50 species of birds. It is characterized by a type of vegetation consisting of xerophile scrubland, pine-oak forest and Mediterranean forest (coniferous forest). It is deemed threatened by the traffic of all-terrain vehicles and the extraction of deadwood.

In spite of the above, it is important to stress that the environmental information available to CONABIO concerning said priority areas does not establish ecological criteria or guidelines bringing restrictions or limitations for the development of any activity, but this information corresponds to an analysis of the biodiversity and environmental problems existing in said region, in order to have a reference framework on the state of conservation and/or alteration of the existing ecosystem.

15. The polygon defined as general area of the **project** contains the entire polygon of the Parque Nacional Constitución de 1857, whose creation decree was published in the Official Gazette of the Federation on April 27, 1962, stressing the presence of species of pine forest; in its fauna, there are species such as the mule deer, mountain puma, bighorn sheep, foxes and rabbits; among the birds, there are quails, woodpeckers, ducks, falcons and

[signatures]

bald eagles, *inter alia*. In this sense, it is important to indicate that the **project**, *per se*, will not occupy any area in the National Park, according to **POEBC** and **PEDUBC**, which establish that the entire Parque Nacional Constitución de 1857 along with subsystems 1.2.S.3.9.a-1 "Ejido Real del Castillo, Parque Nacional Constitución de 1857" and 1.2.S.3.9.a-3 "Los Bandidos, Arroyo el Sauzal" have a protection policy, implying that in the area it is not possible to perform works and/or activities that endanger the integrity of the ecosystem; for this reason, the **petitioner,** in strict compliance with the content of those regulations, excluded entirely this protected natural area from the areas likely to be occupied for the development of the infrastructure required for the **project**, along with the areas named "Ejido Real del Castillo," "Lops Bandidos" and "Arroyo el Sauzal."

16. The **project** does not contradict the principles and objectives for which the Agreement of the United Mexican States and the United States of America for the Protection of Migratory Birds and Game Mammals, published in the Official Gazette of the Federation on May 15, 1937 was created, as well as the amendments to said agreement, published in the Official Gazette of the Federation on July 21, 2000, since the purpose of the bilateral agreement is not only to protect migratory birds regardless of their origin, be it Mexican or United States of America, but also to use rationally the species of birds in existence, avoiding their extinction by adequate procedures for their use according to the Laws, Regulations and provisions established by each of the countries involved.

In this sense, according to the size, characteristics and/or scope of the **project**, it is important to stress that the objective is to install technology for electricity generation in a zone that, *per se*, is considered as an area of migratory routes of birds originally from the United States of America and Canada; but the Mexican legislation has public order and social interest provisions that any interested party must observe when performing any work and/or activity in order to preserve and restore the ecological balance, as well as for the protection of the environment in the national territory and the zones in which the nation exercises sovereignty and jurisdiction, promoting sustainable development.

[signatures]

In this order of ideas, based on the above precepts, we must stress that although **LGEEPA** is a regulatory law deriving from the Constitution, in its article 28 it not only indicates the objective of the process of environmental impact assessment (**PEIA**), but also indicates the works and/or activities which are under federal jurisdiction, as well as the preventive character of **PEIA**, since any public or private person who wants to engage in any of the works and/or activities cited in the aforementioned law must present to the secretariat a declaration of environmental impact assessment containing at least a description of the possible effects on the ecosystem(s) that may be affected by the work or activity in question, considering all elements making up such ecosystems, as well as the preventive, mitigation and other measures necessary to avoid and reduce to a minimum the negative effects on the environment.

In this sense, since there are legal provisions that regulate the works and/or activities that may cause ecological unbalance or reduce the limits and conditions established in the applicable provisions to protect the environment and preserve and restore the ecosystems, such as **LGEEPA** and its **REIA**, as well as the General Law of Wild Life (**LGVS**) and other regulatory provisions whose purpose is the rational use of natural resources, compliance with the principles and objectives of the **Agreement of the United Mexican States and the United States of America for the Protection of Migratory Birds and Game Mammals** is inferred according to the above arguments.

Environmental characterization

17. The characteristics of the regional environmental system where the various works and/or activities of the **project** are to be carried out are as follows:

a) For the delimitation of the Regional Environmental system, (**SAR**) where the **project** will take place, the **petitioner** initially made a superposition of maps and identified the space of the **project** in the UGA's and UGT's, and in turn in the various

[signatures]

subsystems defined by **POEBC** and **PEDUBC**, determining that **SAR** covers all 15 subsystems involved in the **project**, representing an approximate area of 983,020.66 ha; subsequently, it defined the study area and areas of the **project**, determining that the surface of the study area is 294,273.64 ha, and will be the area where it will be possible to install the various elements of infrastructure required for the **project**; in this sense, said area was defined taking into account various factors, such as the quality of the wind, possession of the land, as well as the presence of feasible zones for the installation of electric lines. Moreover, once the study area was defined, the areas of the **project** (**AP**) were defined; these are divided into occupancy areas during the preparation of the site and construction stages (**APC**) and occupancy areas during the operation and maintenance stages (**AOM**). In this sense, AP has an approximate area of 5,120 ha, which will not be contiguous, mainly due to the nature of the **project** itself. This will permit the absence of impact on a large scale in a single ecosystem. Of that area, 2,930 ha correspond to the area to be occupied provisionally during the preparation of the site and construction stages, to be rehabilitated after said stage is completed; the remaining 2,190 ha will be permanently occupied during the operation of the **project**, so that this area must be compensated with restoration action in areas that are degraded or likely to be recovered within the study area of the **project**.

On the other hand, it is important to stress that, in the study area, six areas were defined as exclusion patches (areas which, due to some use restriction, legal or environmental limitation, due to the policy of the **project** or any other reason cannot or will not be used). These areas are as follows:

	Site	Valuation	Area (ha)
1	“Vallecitos” archeological site	Restricted use, since it has archeological value	165.50
2	Village of Luis Echeverría and	Restricted urban zones	5,772.18

[signatures]

	Site	Valuation	Area (ha)
	Village La Rumorosa	by Urban Development Programs	
3	Subsystem 1.2.S.3.9.a-1 "Ejido Real del Castillo, Parque Nacional Constitución de 1857"	Landscape protection, land use incompatible with the installation of wind turbines or transmission lines.	1,316.82
4	Subsystem 1.2.S.3.9.a-3 "Los Bandidos, Arroyo el Sauzal"	Landscape protection, use of land incompatible with the installation of wind turbines	10,345.16
5	ANP (this area does not include the portion of Sb 1.2.S.3.9.a-1	Environmental importance	1,181.35
6	Area of natural pastureland	Environmental importance (unique place within SAR according to the land use map of INEGI)	86.11
		TOTAL	**18,867.12**

The main types of vegetation in the study area are chaparral and rosetophilous desert scrubland (defined indistinctly as xeric scrubland), pine forest, juniper forest, pastureland, induced pastureland, gallery forest and secondary vegetation, as well as induced pastureland, secondary vegetation and open forest (mainly pine).

In this sense, various vegetal associations were identified in the study area, as the result of the wide range of environments or ecosystems, where plants with various characteristics and ecological affinities developed; this diversity mainly depends on the climate-environmental and topographic factors. The associations identified as as follows:

Brush (chaparral) is an evergreen community, dense and low, dominating great part of the study area. It is present in the highest regions and is susceptible to fires, with marked Mediterranean climate and superficial soil, improper for the development of forests; it is also related to areas that have been previously disturbed.

The association of *Adenostoma sparsifolium, Ceanothanus greggi and Yucca schidigera* mainly develops in the transition between the pine forest and the brush, forming vegetation patches that sometimes may be dense.

The association of *Arctostaphylos glauca, Adenostoma sparsifolium and Adenostoma fasciculatum var. fasciculatum* is the most representative in the study area, and is formed of plants that tolerate the constant fires and the extreme temperatures (high and low). It corresponds to an evergreen vegetation that forms large homogeneous massifs on the tops of the mountains, very dense and containing many vegetal species and significant animals.

The association of *Rhus ovate and Quercus dumosa* is distributed next to Xeric scrubland in the Eastern regions of the study area, in soils with light and steep grades of volcanic origin, such as red volcanic rock and igneous rock.

The rosetophilous desert scrubland develops in regions with medium deep to superficial soils, with very dry and hot climates, preferably at altitudes below 1000 MASL [meters above sea level], since above it there is brush.

The association of *Yucca schidigera – Fouqueria splendens – Miriabilis laevis* prospers on the eastern slopes of the Cordillera Molina, in the lowest, driest parts.

The association of *Yucca schidigera, Cylindropuntia and Opuntia littoralis* develops on the eastern-oriented hillsides on Cordillera Molina, in rocky, superficial and sandy soils.

Pine forests. These are characterized by the dominance of various species of *Pinus (P. monophyla, P. quadrifolia and Pinus jeffreyi)*. They mainly develop in the mountainous regions with higher environmental humidity and various soil conditions: from deep soils

to highly rocky slopes, on which the dominant species varies.

The association of *Pinus jeffreyi and Artemisa tridentate.* In this case, the forest dominated by these species has low density and species diversity, distributed into two or three well defined strata. These are located in the central part of the study area, mainly in Parque Nacional Constitución de 1857, even though they also prosper in zones close to lowlands where the quantity of water is constant throughout the year.

The association of *Pinus quadrifolia, Adenostoma sparcifolium and Quercus dumosa* tends to be distributed in regions where humidity is less frequent that in Jeffrey pine forests and there are a high percentage of rocky outcrops, oriented toward the eastern portion of the study area.

The association of *Pinus quadrifolia, Quercus dumosa and Yucca schidigera* is characterized by the fact that the dominant species are very similar to those of the association of *Pinus quadrifolia, Adenostoma sparcifolium and Quercus dumosa*.

The juniper forest is a community where the scaly leaves of the *Juniperus* genre. In general, it has some degree of impact by human activities, forms patches in which other types of plants and trees develop, such as umbrella pines (*Pinus quadrifolia*), which is sporadic, encinillo (*Quercus dumosa*), datillo (*Yucca schidigera*), sotol (*Yucca wipplei*), *Opuntia littoralis, Echinocereus engelmannii.*

Scrubland – Pine is the ecotone developed between the scrubland and the pine forest; it contains the same species appearing in the two types of vegetation and is representative in the study area.

[signatures]

The Association of *Pinus quadrifolia, Adenostoma fasciculatum var. obtusifolium and Quercus dumosa* is open vegetation with predominant perennial herbaceous and woody species such as valerian (*Adenostoma fasciculatum var. obtusifolium).*

Gallery forest is the rarer type of vegetation in the study area, since it is found only in regions protected from desiccation in the bottom of the ravines located in the eastern part of the study area.

The association of *Pinus quadrifolia and Salix taxifolia* is mainly dominated by umbrella pines (*Pinus quadrifolia*), even though encinillo (*Quercus dumosa)*, aspen *(Populus tremuloides)* and sugar sumac (*Rhus ovata)* also grow. This vegetal association is present in the most inaccessible zones of the study area, so that its state of conservation may be considered high.

Pastureland – this vegetal association, preferably of the induced type, product of human activities such as livestock, is mainly located in the northern part of the study area. The most representative genres of these communities are *Bromus and Aristida.* In the general area of the **project**, it preferably grows on low hillsides, rolling hills and plateaus, in soils with rocky bed such as regosol, yermosol, xerosol and planosol.

b) Of the total area required for the **project** (5,120 hectares) as indicated by the **petitioner**, 100% is located in forest and preferably forest areas, affecting communities of gallery forests, pine, open pine, juniper or chaparral-pine, chaparral, desert scrubland, induced pastureland and secondary vegetation, and where it is foreseen that specimens of wild flora and fauna under some category of protection could be affected, as indicated in NOM-059-SEMARNAT-2001[eight species of flora (5 species of trees and three species of Cactaceae) and 103 species of fauna, of which 47 are birds, 5 are bats, 23 are non-flying mammals, 24 species are reptiles and 4 are amphibians].

[signatures]

Furthermore, even though the area required for the development of the **project** is 5,120 he, it is important to indicate that the polygon that includes the four polygons of wind generation, representing an area of 294,273.64 ha (of which 199,724 ha can be considered free or green (chaparral, Microphyllous desert scrubland and pastureland), 91,527 ha of trees (pine and juniper forests and gallery vegetation) and 3,020 ha without trees (roads, urban zones and bodies of water)]. Said area represents 1.76% of the entire study area. It is foreseen that there will be no impact that may place at risk the carrying capacity and functional integrity of the ecosystems, considering that the works and activities required for the **project** do not imply the removal of the vegetation in a single area, but such removal will be distributed in the various types of vegetal associations identified. Furthermore, it must be indicated that of the 5,120 ha, only 2,190 ha will be definitively cleared, while the remaining 2,930 will be rehabilitated after the site preparation and construction activities are completed.

Environmental Impacts and Mitigation Measures of the project.

18. According to the environmental diagnosis of the site where the works and/or activities of the **project** will take place, cited in the immediately prior whereas paragraph, this **DGIRA** identified that the main impacts of the various stages of the **project** are as follows:

Environmental component	Activity	Impact	Measure
Soil	Clearing and stripping of areas for the construction of the infrastructure required for the **project** (wind turbines, electricity transmission lines,	➢ Erosion ➢ Floods ➢Soil contamination	- The **petitioner** must carry out actions intended to retain and/or rehabilitate the soils and prevent and control erosion in the areas affected by the construction activities of the **project** -Soil conservation practices.

Environmental component	Activity	Impact	Measure
	electrical substations and provisional works. Construction and rehabilitation of roads Use of cargo and transport vehicles and heavy machinery.		
Fauna	Clearing and stripping of areas for the construction of the infrastructure required for the **project** (wind turbines, electricity transmission lines, electrical substations and provisional works. Operation of the wind turbines (operation and maintenance stage)	Alteration and/or loss of habitat due to vegetation clearing, with consequent displacement of the organisms in space. Impact of the species of fauna listed or not in a legal regulation. Possible collision of birds (resident or migratory) and bats.	- The **petitioner** must carry out compensation actions for the loss of forest cover on an area equivalent to 3 times the forest area affected by the development of the **project**, in order to recover habitats for the wild fauna. - Actions of protection and/or conservation of the fauna species that may be affected (including actions of rescue and relocation of wild fauna specimens), with special attention to the species listed in NOM-059-**SEMARNAT**-2001, as well as those that represent an important ecological role in the SAR. - The **petitioner** must conduct a local and regional study of the birds and bats present in each of the areas destined to the

[signatures]

Environmental component	Activity	Impact	Measure
			Installation of the wind fields identified as ESJ-Jacume, ESJ-La Rumorosa, ESJ-Sierra Juárez and ESJ Cordillera Molina, before the operation of the infrastructure covering a period of at least one year, considering the seasonality and behavior of the various species that may be present in the zone of the **project**, in order to identify the flight heights if the various species identified in the zone, and thus prevent the effect that the operation of the wind turbines may have on the populations of birds and bats, in addition to identifying whether there are zones of nesting, feeding and rest, inter alia and, if there are, establish the additional mitigation measures prior to the operation of the **project**.
Flora	Clearing and stripping of areas for the construction of the infrastructure required for the **project** (wind turbines, electricity transmission lines, electrical substations and provisional works.	Loss of vegetal cover due to permanent clearing activities, especially in the areas intended for permanent infrastructure. Possible impact of species with status.	- The **petitioner** must carry out compensation actions for the loss of forest cover on an area equivalent to 3 times the forest area affected by the development of the **project**, in order to compensate the environmental services lost with the clearing of the forest area required by the **project**. - To mitigate the effect of the activities of the **project**, a specific program will be carried out for the protection and conservation of wild flora. Furthermore, a program will be carried out for the handling of wild flora, which must include

[signatures]

Environmental component	Activity	Impact	Measure
			the species listed in NOM-059-**SEMARNAT**-2001, as well as those with ecological importance and likely to be handled or rescued. In this sense, for the performance of said programs, the **petitioner** must obtain specialized consulting, preferably from institutions of higher education or research of the region, so as to propose in detail the rescue actions applicable to each group, especially addressed to the species in protection status pursuant to NOM-059-**SEMARNAT**-2001, potentially found in the sites intended for the construction of the **project** and which should be relocated; it must include in the reports indicated by said semi-state institution the technical and scientific information that shows that the conservation or preservation actions of said species are successful.

In light of the above, this **DGIRA** identified that, even though it is true that the development of the **project** will cause a series of significant or relevant environmental impacts[1], they will be mitigated and/or compensated through prevention and/or mitigation measures included in **MIA-R** and in the additional information presented. In addition, it is important to indicate that, based on the available technical information, this **DGIRA** considers that, even though it is foreseen that there will be collisions of individuals of the various bird and bat species (migratory or resident) with the

[1] Significant or relevant environmental impact: The impact resulting from the action of man and nature, causing alterations in ecosystems and their natural resources or health, preventing the existence and development of man and other living beings, as well as the continuity of natural processes.

wind turbines, said information does not provide elements that allow concluding that said collisions would place at risk the **viability of the species involved**, reason for which, and following the principle of prevention established in article 15, sections IV and VI **LGEEPA**, this **DGIRA** considers that it is necessary for the **petitioner** to conduct a local and regional study of the birds and bats present in each of the areas intended for the installation of the wind fields identified as ESJ-Jacume, ESJ-La Rumorosa, ESJ-Sierra Juárez and ESJ Cordillera Molina, before the operation of the infrastructure covering a period of at least one year, considering the seasonality and behavior of the various species that may be present in the zone of the **project**, in order to identify the flight heights if the various species identified in the zone, and thus prevent the effect that the operation of the wind turbines may have on the populations of birds and bats, in addition to identifying whether there are zones of nesting, feeding and rest, inter alia and, if there are, establish the additional mitigation measures prior to the operation of the **project**.

In light of the above, and according to the arguments indicated in the whereas paragraphs that make up this resolution, it is foreseen that the ecological characteristics of the ecosystems present in the SAR, study area and **project** area defined for the **project** will not be altered by the actions inherent thereto, since the **petitioner** will carry out a whole series of actions (mitigation and compensation measures) intended to reduce the adverse effects on the ecosystems, as established in article 44 **REIA**.

19. This **DGIRA**, in strict compliance with the content of **LGEEPA**, especially in the third paragraph of article 35 and article 44 of its **REIA**, valued the possible effects on the ecosystems that the works and/or activities considered in the **project** may cause if carried out. Furthermore, it evaluated the efficacy in the identification and assessment of the environmental impacts and their effect on the various environmental components, as well as the consistency and technical feasibility of the mitigation and compensation measures proposed by the **petitioner**, considering for all that the SAR, the study area and the **project** area.

In light of the above, and according to the assessment and analysis in matters of environmental impact, this **DGIRA** identified that, even though there were environmental impacts due to the realization of the **project**, they will be minimized, mitigated or prevented by the application of a series of measures proposed by the **petitioner** such as those indicated in this letter.

Such being the case, the **petitioner** complied with article 30, first paragraph **LGEEPA**, since it presented the description of the possible effects on the ecosystem or ecosystems that may be affected by the works and/or activities contemplated in the **project**, considering all the elements making up the ecosystem involved, indicated the preventive, mitigation and other measures needed to avoid and/or reduce to a minimum the negative effects on the environment. It also complied with the content of article 44, sections I and II **REIA**, given that all and every one of the elements constituting the ecosystem were evaluated, as well as the use of the natural resources for the functional integrity and carrying capacity of the ecosystem of which said resources are part.

20. This **DGIRA** issues this authorization based in the content of **LGEEPA**, which contains public order and social interest provisions according to its article 1. Such is the case of the Environmental Impact assessment, considered by the law in question as an instrument of Environmental Policy.

Due to the above, and in compliance with the content of article 15, section IV **LGEEPA**, the **petitioner** is obligated to prevent, minimize or repair the damage to the environment that may be caused by the performance of the various works and/or activities of the **project** and assume the environmental cost caused by said impacts or damage.

Furthermore, according to article 28, first paragraph of said law, and after analyzing and assessing the possible environmental impacts which will be produced with the development of the **project**, this **DGIRA** issues the authorization conditionally, establishing for its realization additional prevention and mitigation measures, with the

purpose of avoiding, attenuating or compensating the adverse environmental impacts likely to be produced in its various stages, according to the faculties expressly cited in article 35, section II **LGEEPA**; therefore, this **DGIRA** indicates the requirements to be observed by the **petitioner** for the performance of the **project**, included in Term **SEVEN** of this resolution.

Based on the above, and pursuant to the content of article 8, second paragraph, 16, first paragraph, 25 and 27 of the **Political Constitution of the United Mexican States**; 1, section I, 4, 5, sections II, VI and X, 28, first paragraph, sections II and VII, 30, 34, section II, 35, first and fourth paragraphs, section II and last one, and 176 **LGEEPA**; 2, 3, sections I, III, IV, V, VI, VII, VIII, IX, X, XII, XIII, XIV, XVI and XVII; 4, section I, 5, paragraphs; K), sections I, II and III and O), section I, 9, first paragraph, 10, section I, 11, 13, 14, 21, 22, 24, 26, 37, 38, 40, 41, 42, 43, 44, 45, section II, 46, section II, 48 and 49 **REIA**, 2, section I, 18, 26, 32 bis and section IX, of the **Organic Law of Federal Public Administration**; 19, sections XXV and XXVIII, 27, sections I, II and VII and 118 to 140 of the **Internal Regulation of SEMARNAT**; 2, 3, 4, 16, section X, and 57 section I of the **Federal Law of Administrative Procedure**, this **DGIRA**, in the exercise of its attributions, determines that the **project** subject of the assessment decided upon by this instrument is environmentally viable, and therefore has decided to **AUTHORIZE IT CONDITIONALLY**, subject to the following

TERMS:

ONE. - This resolution in matters of environmental impact is issued in reference to the environmental aspects concerning the works and activities of the **project** named "**Energía Sierra Juárez,"** as well as the environmental impacts arising from the removal of forest or preferably forest vegetation corresponding to gallery forests, pine, open pine, juniper, chaparral-pine, chaparral, desert scrubland, induced pastureland and secondary vegetation.

[signatures]

This resolution authorizes the construction and operation of a wind electric park located in the mountain system of Sierra Juárez, state of Baja California, in the municipalities of Ensenada and Tecate, which will have a maximum total generation capacity of 1,200 MW of electric energy so that it is authorized to install a maximum of 1,000 wind turbines (the capacity of the wind turbines will depend on the technology existing at the time of its purchase, with the understanding that the generation capacity of the wind park must not exceed 1,200 MW of generation), distributed into four large areas identified as 1. ESJ-Jacume; 2. ESJ-La Rumorosa, 3. ESJ-Cordillera Molina and 4. ESJ-Sierra de Juárez, where the coordinates of the polygons making up said areas are those indicated in pages 5-10 of the additional information presented.

The maximum impact area authorized for the development of the **project** is 5,120 ha, also corresponding to the area authorized for the change of land use of forest or preferably forest areas.

The characteristics of the **project** will be those indicated in chapter II of **MIA-R**, as well as the indications of the additional information presented.

This resolution does not cover the authorization in matters of environmental impact for the rehabilitation, construction and/or opening of any access road. This is because this **DGIRA** is competent only to carry out the assessment of the environmental impacts arising from the removal of the forest or preferably forest vegetation required for said roads, since the assessment in matters of environmental impact for the construction and/or rehabilitation of the access roads corresponds to the Government of the state of Baja California, since they are not considered a general communication way and consequently do not meet the events indicated in article 29, section I **LGEEPA** and 5, paragraph B) of its **REIA**.

TWO.- The **petitioner** must process and obtain the authorizations and permits for the construction and operation of the **project** from the competent authorities, placing special attention to the change of land use of the forest lands issued by the Federal Delegation of

[signatures]

SEMARNAT in the state of Baja California, which will determine as appropriate within its own jurisdiction.

THREE.- This authorization will be valid for **20 years** to carry out the site preparation and construction activities of the four stages of the **project** and for **60 years** for the operation and maintenance of the **project**, according to article 49 **REIA**. The first term will start as of the day following the receipt date of this letter, and the second on the day following the completion of the fist term. The terms may be extended at the request of the **petitioner**, after proving that it satisfactorily complied with all the terms and constraints of this resolution, as well as the prevention, mitigation and/or compensation measures propose by the **petitioner** in the documentation presented. Given the above, it must request in writing from this **DGIRA** the approval of its request within 30 days prior to its expiration date.

Furthermore, said request must be accompanied by a report signed by the legal representative of the **petitioner**, duly accredited, with the legend that it is presented under penalty of perjury, based on the **petitioner**'s prior knowledge of section I, article 247 of the Federal Criminal Code.

The aforementioned report must present the detailed list of the manner and results reached in compliance with the Terms and Conditions established in this authorization. Said report may be replaced by the official document issued by the Federal Delegation of the Federal Prosecutor's Office for the Protection of the Environment in the state of Baja California, through which said entity states how the **petitioner** complied with the Terms and Conditions established in this resolution. Otherwise, said action will not apply.

FOUR.- The **petitioner** is obliged to comply with the provisions of article 50 **REIA**, if it desists from carrying out the works and/or activities covered by this authorization, so that, if applicable, this **DGIRA** may determine the measures to be adopted, so as not to produce changes damaging to the environment.

[signatures]

FIVE.- The **petitioner** must previously communicate to this **DGIRA** any modification to the **project** assessed, according to the terms set forth in the applicable environmental legislation, in order to make the appropriate decision in due time.

In light of the above, the **petitioner** must present the comparative technical, legal and environmental analysis of the **project** authorized, as well as of the changes to be made (environmental conditions of the site, environmental impacts. mitigation measures and the expected scenarios), so that this **DGIRA** can analyze whether the changes requested alter the original assessment of the **project** in order to make the appropriate decision. Furthermore, it understands that, as long as the **petitioner** does not have the authorization of said changes, it cannot perform the corresponding works and/or activities. Based on the above, it is prohibited to conduct works and/or activities for preparation, constructions, operation and maintenance other than those indicated in this authorization.

SIX.- This resolution refers only to the assessment of the environmental impact foreseen for the ecosystem(s)[2] to which the site of the **project** belongs and its area of influence, as described in **MIA-R** and in the additional information presented; this resolution does not constitute a permit or authorization for the beginning of the work, since they are under the jurisdiction of other institutions (municipal, state and/or federal), according to the principle of competition set forth in article 73, section XXIX-G of the Political Constitution of the United Mexican States; furthermore, this resolution does not acknowledge or validate the legitimate ownership and/or holding of land; consequently, the actions determined by the secretariat itself and federal, state and municipal authorities within their respective jurisdiction remain valid. In this sense, it is the obligation of the **petitioner** to have before starting any activity related to the **project** all permits, authorizations and licenses, *inter alia*, necessary for their performance, according to the current legal provisions applicable in any matter other than that referred to in this resolution, with the understanding that the resolution issued by this Secretariat should not considered causal (binding) for other authorities within

[2] Ecosystem.- Basic functional unit of interaction of living organisms among them and between them and the environment, in a certain space and time. (art. 3, section III LGEEPA).

[signatures]

their respective jurisdictions to grant their corresponding authorization, permits or licenses, *inter alia*.

SEVEN.- According to the provisions of article 47, first paragraph, during the development of the various stages of the **project**, the **petitioner** must comply with the description contained in **MIA-R**, the additional information, the plans included in it, the official Mexican standards issued for this purpose and the other legal and regulatory provisions applicable in each stage, as well as the content of this resolution, according to the requirements included in the following

CONSTRAINTS:

1. Considering that the **project** is planned to take place in four stages and that, according to the declarations of the **petitioner**, the first stage will correspond to the area identified as **ESJ-Jacume**, with the installation of a maximum of 52 wind turbines with a capacity of 1.5 to 2.5 MW per wind turbine, a collection electrical substation of 34.5 kV on a maximum area of 11,200 m^2, a main electrical substation of 230 kV to 500 kV on a maximum area of 11,200 m^2, installation of 34.5 km of electrical conducting lines, as well as temporary works for the construction of the infrastructure required in said area; taking into account that even though the documentation presented and submitted to **PEIA** considered the worst effects the **project** may cause on the various environmental components present in the ecosystems concerned, it is necessary that previously, at least **6 months** before starting the preparatory stages of the site and construction, and after defining the detail engineering, the **petitioner** present an update of the environmental characterization and diagnosis of the sites where the infrastructure required for that area will be installed, indicating the final areas affected by the development, and presenting in an adequate scale plan the final sites where the infrastructure will be installed, as well as the geographic coordinates of those sites; furthermore, the **petitioner** must update, if necessary, the

[signatures]

prevention and/or mitigation measures proposed in the documentation presented, based on the new environmental diagnosis.

It is important to indicate that the update mentioned in the previous paragraph must be presented for each of the areas of intervention (ESJ-La Rumorosa, ESJ-Cordillera Molina and ESJ-Sierra de Juárez), according to the **petitioner's** work plan.

On the other hand, and taking into account the indications of the statements of fact 7 and 17 of this letter, the **petitioner** must establish a buffer area of at least 2 kilometers around (measured from the outer limits) for each of the areas defined as exclusion patches ("Vallecitos" archeological site; Village of Luis Echeverria and Village of La Rumorosa; Subsystem 1.2.S.3.9.a-1, "Ejido Real del Castillo, Parque Nacional Constitución de 1857"; Subsystem 1.2.S.3.9.a-3, "Los Bandidos, Arroyo el Sauzal"; Parque Nacional San Pedro Mártir and natural pastureland), where it is prohibited to carry out any type of work and/or activity required for the **project**.

2. **Comply with all and every one of the control, prevention and mitigation measures proposed in the documentation presented** for the development of the **project**; furthermore, it must comply with the provisions of **LGEEPA**, its **REIA**, the Official standards and other legal provisions applicable to the development of the **project**, without prejudice to the requirements of other administrative unit (federal, state and municipal) competent in the case, and comply and follow the provisions of the constraints established in this resolution, which are necessary to assure the sustainability of the **project** and the preservation of the environmental balance within it.

To ensure compliance with said obligations, the **petitioner** must prepare a program for following-up environmental quality (PSCA), including in systematized and scheduled manner the performance, application and systematic analysis of all control, prevention and mitigation measures proposed by it, as well as the monitoring of the environmental indicators for their valuation and the performance of the constraints established in this letter, the

[signatures]

moment of performance of said measures in the work program of the **project** and a brief description of the preventive or corrective actions to be taken, in the event that deviations appear in the records of the variables under control. The **PSCA** must be based on the environmental monitoring program included in the additional information presented.

The program should be complemented with a description of the methodologies to be followed for the follow-up which is its objective and, if applicable, an indication of the action mechanisms to be implemented to answer the impacts not foreseen in **MIA-R** that may appear due to the performance of the works and/or activities involved in the various stages of the **project**. Furthermore, the program must include the estimate of the direct and indirect costs for its performance and development, itemizing all and every one of the actions included in the various development stages of the **project**.

The aforementioned programs must contain the proposals for action in order to follow up environmental quality, valued through the identification and adoption of indicators for each parameter and evaluation of at least the following environmental components: flora, fauna and soil. Consequently, it must present to this **DGIRA** the objectives, guidelines, actions, techniques and criteria used, costs, environmental indicators, scheduling of activates, personnel involved, mechanisms of evaluation of the results, scientific evidence supporting the application of the measures employed, *inter alia*, so that the **PSCA** must include, *inter alia*, an environmental supervision program including the activities of planning and environmental management. Furthermore, it must include the programs indicated in the environmental monitoring programs completely developed, i.e. including all objectives, guidelines, actions, techniques, et, as to how they will be applied. It is necessary to indicate that, for the development of said programs. The **petitioner** must obtain the specialized consulting, preferably from institutions of higher education or research of the region.

In this sense, the **petitioner** must deliver to PSCA, with the requirements cited above, within a term of **six months** from

[signatures]

the business day following the receipt of this resolution, for this **DGIRA** to make the appropriate determinations; after the approval of said program by this **DGIRA**, and in order to analyze and assess the performance of the content of **MIA-R** and the additional information, as well as to confirm the **environmental quality** of the ecosystems affected by the **project**, after the **PSCA** has been validated, the **petitioner** must present to this **DGIRA** an **Itemized Annual Technical Report (ITAP)** in original, with copy to the Federal Delegation of PROFEPA in the state of Baja California, indicating that, by the application of the measures proposed in **MIA-R** and the additional information, as well as those indicated in this resolution, the environmental impacts that may be present due to the performance of the **project** were mitigated or prevented. Said report must include graphic evidence and technical-scientific arguments demonstrating that the capacity of homeostasis (capacity of a system to self-regulate, allowing it to maintain its structure over time under external influences, so as to maintain its ecological processes) and/or resilience (capacity of a system to resist changes and return to homeostasis) of the ecosystem have not been affected by the **project**; if applicable, this **DGIRA** will decide to comply with the constraint in question. Otherwise, and if as a result of the analysis and assessment of the report, it is found that there were negative effects or unforeseen impacts on the ecosystem, having to do with the performance of the **project**, this **DGIRA** will determine the measures to be applied to address the effects of said impacts and the consequent necessity and obligation of the **petitioner** to continue presenting the ITAP.

The **petitioner** will be responsible for the quality of the information presented in the reports and statements arising from the performance of the **PSCA** allow this **DGIRA** to assess and, if applicable, to verify the performance of the assessment criteria of environmental impacts and of the terms and constraints established in this resolution letter.

3. Considering that the presence of species of vertebrates catalogued in a protection category pursuant to **NOM-059-SEMARNAT-2001** was identified in the sites intended for the performance of the **project**, the **petitioner** must obtain and present **insurance and/or guarantee** for the due performance of the constraints established

[signatures]

in this resolution in the terms of article 51 **REIA**. It must be indicated that the type and amount of the insurance and/or guarantees will be according to the technical-economic studies to be presented by the **petitioner**; these studies will be reviewed and, if applicable, endorsed by this Secretariat, which will be the party in charge of establishing the amount of the guarantees, as set forth in article 52 **REIA**.

The results of the technical-economic study referred to in the prior paragraph, as well as the proposed amount and form of the insurance and/or guarantees will be sent within a maximum term of **six months** from the date of receipt of this authorization, in original, to this **DGIRA**, with copies of the proposals to the federal delegations of PROFEPA and SEMARNAT in the state of Baja California.

4. Develop a **Program for Soil Handling and Restoration**, including the design of the **soil conservation and/or erosion control actions**, based on a a study of Erosion Risk Analysis in the zones intended for the construction of the **project**, in order to identify the zones sensitive to erosion and therefore determine exactly the most susceptible zones for the application of the erosion control actions. These actions must include the following:

- Indicate and mark in the plan the sites where the erosion control actions will take place, indicating their zero state.
- Techniques used, which should be technically supported.

5. Considering that site preparation and construction work will affect forest or preferably forest areas on an area of 5,120 ha, corresponding to the area required for the installation of the entire infrastructure required for the development of the **project** (including the areas to be cleared for access roads and provisional works), this **DGIRA** determines that the **petitioner** will have to develop preventive and rescue actions of the wild fauna species, as follows:.

✓ Protection and conservation actions and measures of wild fauna for the fauna species listed in the Official Mexican Standard

[signatures]

NOM-059-SEMARNAT-2001, as well as those included in the appendices of CITES present in the **project** sites, which should include the following:

a) Preparation of a prospective study (updated sampling) of the vertebrate fauna present in the sites where the **project** will be done, in order to corroborate the existing diversity and apply the environmental protection measures to the species of fauna included in **NOM-059-SEMARNAT-2001** and in the appendices of CITES during the site preparation and construction of the **project** stages, with higher emphasis on those organisms with slow displacement such as amphibians, reptiles and rodents.

b) Actions and measures of rescue and preservation of the wild fauna species, which must consider at least the following aspects:

- Methods and techniques of rescue and preservation to implement for each group of vertebrates or species in particular.
- Scheduling of the activities to perform (Gantt diagram).
- Handling and interpretation of results.
- Criteria to be used to determine the efficiency and efficacy of the application of the various activities.
- Estimate of the costs involved in the preparation and implementation of the actions proposed, itemizing the costs of all and every one of the actions included, as well as direct and indirect cost.

c) For the follow-up of the actions and measures of rescue and preservation of the wild fauna species, the **petitioner** must notify the Federal Delegation of PROFEPA in the state of Baja California that it will start the corresponding activities, so that

[signatures]

said instances may verify their performance; it will have to present **annual** reports with the results obtained, in order to evaluate the efficacy of their application. These reports should be presented in original to this **DGIRA**, with copy to the Federal Delegation of PROFEPA in the state of Baja California, to assess the efficiency of the actions taken; the reports must have a photographic and/or video annex indicating each of the actions taken and their location.

6. Considering that in the sites intended for the construction of the **project** it was identified that species of birds and bats are present, in addition to the fact that said sites are part of migratory routes both for birds and for bats, and that its operation may have a negative effect on the populations of these groups of fauna, this **DGIRA** deems it necessary to apply the principle of precaution, so it determines that the **petitioner** must assess the impact on the species of migratory or resident birds of the zone where the **project** will be done, with special emphasis on those found in a legal protection category in **NOM-059-SEMARNAT-2001**, as well as for the populations of bats that have their habitat in the zone. For this purpose, the **petitioner** should:

a) Carry out a **Monitoring study of birds and bats** of at least one annual cycle, by which it will obtain information about the diversity of these species and by which it will demonstrate that the realization of the **project** will not affect them; otherwise, it will be necessary to propose and apply the measures for their protection or the minimization of the negative effects caused by a possible collision; it is necessary to indicate that, in the report of the application of the study, it will be necessary to include the technical-scientific evidence supporting the fact that the proposed measures will allow avoiding and/or minimizing the possible impact of birds and bats.

In this sense, the study in question will be designed to become familiar with the biodiversity of birds and bats present in the sites and their behavior (including their flight height), in order to estimate objectively the potential risk represented by the operation of the

project by the potential collision of these species. The study will include two stages, one prior to construction and one subsequent.

The first part of the study needs to be done during the stage prior to construction so that the information obtained may serve as specific baseline for the conditions of the sites of the **project**, so that the results bring reliable data to estimate the potential risk represented by the operation of the **project** for the various populations of birds and bats and, if applicable, it may influence the final design of the **project** to minimize the risk of collisions.

In the second part (during the construction and operation of the **project**) monitoring will continue so as to corroborate the data obtained in the first part and implement the additional measures that may be required, The monitoring study must include the following aspects:

- Diversity of birds and bats, resident and migratory throughout the study cycle.
- Distribution and abundance by species throughout the study cycle.
- Flight behavior (arrival, flight height, flight directions. etc.).
- Nesting, feeding or perching areas in the zone and area of influence of the **project**.
- Analysis of the information considering the sites of the **project** and the regional context.
- Assessment of the risk of collisions with the wind turbines and the transmission line for each species and analysis of consequences concerning populations and communities of birds and/or bats.
- Proposals for actions and/or measures to be adopted to minimize he impacts on the populations of said species.

[signatures]

- Define which is the degree of ecological importance of the areas where said specifies were found; i.e., what environmental services offer the ecosystems involved to these types of species.

- Assessment of direct and indirect costs of the performance of the study and the application of the proposed measures.

It is important to indicate that, to develop the various actions and measures considered in this constraint, the **petitioner** must obtain advice from experts, preferably with the participation of a research institution with experience in the studies of this type, enclosing the technical-scientific information supporting the arguments presented in the monitoring study.

b) Assessment of noise levels. The **petitioner** must assess noise levels as established in **NOM-059-SEMARNAT-2001.** In addition, it must analyze whether there are adverse effects on the existing populations of birds and bats (resident and migratory), with the help of experiments, scientific reports and evidence published in the specialized literature on this topic, so that, with the results obtain from this work, if applicable, **DGIRA** may expand the scope of this resolution as to the mitigation measures, to attenuate the effect of this impact on the aforementioned components of the environment.

The **petitioner** will be responsible for the quality of the information presented in the reports and statements arising from the implementation of this report allowing the authority to evaluate and, if applicable, verify the compliance with the valuation criteria of the environmental impacts and the terms and constraints established in this resolution letter.

7. The **petitioner** must compensate the loss of forest vegetation (5,120 ha, corresponding to the area required for the installation of the infrastructure needed for the **project**, as well as its environmental services, such as soil retention, the habitat of species of

flora and fauna, and their participation in carbon capture, through **Compensation Actions in the Impacted Areas.**

Based on the above, the **petitioner** must prepare and present to this **DGIRA** for its analysis and decision, and in a term not exceeding **six months** after receipt of this resolution, the proposal for **Compensation Actions** considering the reforestation of an area of at least three times that affected. Said proposal must consider the establishment of areas (nurseries) for sowing and/or propagation of specimens of the species to be affected.

8. Present at the end of the construction of the infrastructure needed for the development of the **project** (for each of the areas to be developed), a diagnosis of impacts, describing the final environmental conditions of the sites destined for the construction of infrastructure, making a comparative analysis of the initial and final conditions of the zones intended for the construction of the **project**. The above will have the purpose that this **DGIRA** assess and, if appropriate, establish measures for urgent application, if a possible ecological unbalance appears or is detected in the zone; said diagnosis must include a comparative photographic memory of the initial and final conditions.

EIGHT.- The actions considered or quoted in constraint number **7** should not be considered equivalent to the compensation actions contained in the authorization for Change of Land Use in Forest Terrains, which must be processed and obtained from the Federal delegation of **SEMARNAT** in the state of Baja California. This is because the actions indicated in said constraints are established for the purpose of 1) compensating the environmental impacts caused by the loss of vegetation caused by the **project**. 2) to reestablish and/or restore nesting, refuge and feeding areas impacted by the **project**, and 3) conserve and increase the cover area with tree vegetation for the protection of the runoff points and soil retention, since said actions seek to maintain the functional balance of the ecosystems impacted, providing the preservation and conservation of appropriate habitats for the

[signatures]

presence of the fauna species identified in the **MIA-R** evaluated, which is the reason for this resolution.

NINE.- The **petitioner** should prepare and present an **Annual Administrative Report** of compliance with the terms and constraints (**IAA)** in original to this **DGIRA**, with copy to the Federal Delegation of PROFEPA in the state of Baja California, demonstrating the progress of the administrative and legal actions taken by the **petitioner** to comply with all and every one of the terms and constraints established in this resolution, enclosing the corresponding administrative documents and/or legal arguments. Consequently, it is stressed that the content of the information of the IAA will be totally different than required in the ITAP[3] indicated in constraint number **2** of this letter.

Furthermore, in the case of the degree of compliance with term **ONE**, it is absolutely necessary for the **petitioner** not only to indicate the progress percentage of the **project**, but also to include a comparison of the authorized, built and still to be built works (characteristics, size and location), as well as a graphic representation in plans, maps, schemes, photographic annexes (describe in each photograph the most important aspects and their location concerning the **project**) and./or any other forms that allow exemplifying and/or transmitting with the best clarity the degree of progress of the **project**.

The above is fundamental, because with the **IAA**, this **DGIRA** and the Delegation of **PROFEPA** in the corresponding state will have the parameters, records or evidence, as well as the indicators to minimize and, if applicable, avoid the use of discretionary power in the performance of the terms and constraints of this resolution.

TEN. The **petitioner** must notify **SEMARNAT** of the starting and completion dates of the various stages of the **project**, as established in article 49, second paragraph, of **REIA**. For this purpose, it will communicate in writing to this **DGIRA** and to the Federal Delegation of **PROFEPA** in the state of Baja

[3] The ITAP is a technical document describing and assessing the efficiency and efficacy of the application of the measures indicated in the MIA presented and in the resolution issued on the main impacts identified by the project, in order to minimize the trend of deterioration of the environment, through an integral analysis of its state of conservation and/or alteration.

[signatures]

California the starting and completion dates of the authorized works and/or activities, within **fifteen days** following their performance.

ELEVEN.- This resolution in favor of the **petitioner** is personal. In the event of wanting to change the principal, according to article 49, second paragraph, of **REIA**, the **petitioner** must notify in writing this authority, which will decide appropriately.

TWELVE.- The **petitioner** will be the only party responsible to carry out the works and actions needed to mitigate, restore and control all adverse environmental impacts attributable to the performance and operation of the authorized works and/or activities, which were not considered in the **MIA-R** presented.

The **petitioner** shall be responsible before PROFEPA for any illegal act in matters of environmental impact, incurred by the companies or the personnel contracted to perform the construction of the **project**. For this reason, the **petitioner** must make sure that the companies or the personnel contracted to build the infrastructure mentioned in term **ONE** comply with the terms and constraints to which this authorization is subject.

If the works and/or activities cause impact that alters the ecological balance, they will comply with the provisions of article 56 **REIA**.

THIRTEEN.- The **petitioner** must keep on the site of the **project** copies of the file, of the **MIA-R**, of the additional information, of the plans of the **project**, of the information indicated in term **NINE**, as well as of this resolution, in order to show them to the competent authority that requires them.

Furthermore, for the authorization of future works of the **petitioner**, within the area of influence of the **project**, it must refer to this resolution, in order to consider the synergy and/or accumulative impacts that may appear.

FOURTEEN.- SEMARNAT, through PROFEPA, based on articles 118, 119, 136, 138, 139 and 149 of the Internal Regulation

[signatures]

of this Secretariat, shall assure the compliance with the terms established in this instrument, as well as the applicable regulations in matters of Environmental Impact. For this purpose, it will exercise, *inter alia*, the powers granted to it by articles 55, 59 and 61 of the Regulation of the General Law of the Ecological Balance and Environmental Protection in Matters of Environmental Impact Assessment.

FIFTEEN.- The **petitioner** is informed that this resolution issued in connection with the application of **LGEEPA**, its **REIA** and the others set forth in other legal and regulatory provisions in the matter, is issued following the provisions of the administrative procedure set forth in LFPA, and may be challenged by **appeal for review** within **fifteen business days** following the date of its communication to this **DGIRA** which, if applicable, will grant its admission and the granting or refusal of the suspension of the appealed act, as established in article 176 **LGEEPA** and 3, section XV, LFPA.

SIXTEEN.- This **DGIRA** will notify the content o this resolution to the interested party, by any of the legal means set forth in article 35 and other articles related and applicable of The Federal Law of Administrative Procedure.

SINCERELY
ACTUAL VOTE, NO REELECTION.
GENERAL DIRECTOR
[signature]

[stamp]
UNITED MEXICAN STATES
SEMARNAT
GENERAL DEPARTMENT OF
ENVIRONMENTAL IMPACT AND RISK

ENG. EDUARDO ENRIQUE GONZÁLEZ HERNÁNDEZ

Copies of the following page.

[signatures]

[stamp]
UNITED MEXICAN STATES
SECRETARIAT OF THE ENVIRONMENT
AND NATURAL RESOURCES

OFFICE OF THE UNDER-SECRETARY
FOR ENVIRONMENTAL PROTECTION
GENERAL DEPARTMENT OF
ENVIRONMENTAL IMPACT AND RISK

S.G.P.A./DGIRA.DG.4751.10

Cc. **Mauricio Limón Aguirre**.- Undersecretary of Management for Environmental Protection.
Lic. José Guadalupe Osuna Millán – Constitutional Governor of the state of Baja California – jgosuna@baja.gob.mx
Lic. Pablo Alejo López Núñez.- Municipal President of Ensenada, Baja California – president@ensenada.gob.mx
Lic. Donaldo Eduardo Peñalosa Ávila. - Municipal President of Tecate, Baja California – donaldo.eduardo@tecate.gob.mx
Lic. Luis Alfonso Torres Torres. – Federal Delegate of **SEMARNAT** in the state of Baja California.
Eng. Bernabé Esquer Peraza - Federal Delegate of PROFEPA in the state of Baja California.
Dr. Eduardo Morales Guillén.- Coordinator of Information and External services of **CONABIO**.
Biologist Benito R. Bermúdez Almada.- Regional director of **CONANP** in the state of Baja California.
M.V.A. [Veterinarian] Martín Vargas Prieto. – General Director of Wild Life.
Dr. Antonio Díaz de León Corral.- General director of Environmental Politics and Regional and sectorial Integration
L.A.E. [Corporate Administrator] Sócrates Bastida Hernández.- secretary for Environmental Protection of the Government of the state of Baja California – sbastida@baja.gob.mx
Eng. Luis Ignacio López Moctezuma Torres.- Secretary of Infrastructure and Urban development of the Government of the state of Baja California – Imoctezuma@baja.gov.mx
Lic. Raymundo Raziel Villegas Núñez.- General Director of Environmental Impact and Zofemat [federal maritime terrestrial zone] of PROFEPA.
Minute book of the General department of Environmental Impact and Risk
Minute book of the Department of Assessment of the Energy and Industry Sectors.
File: 02BC2009E0007
SINAT: 02BC2009E0007-23

[signature]
AARE/GBC/AH6/*

[illegible stamp]
C:\ARTURO-SERVIDOR\2010\RESOLUTIVOS\ELECTRICOS\028c2009e0007-ENERGIA SIERRA JUAREZ.doc

[initials]

[stamp]
UNITED MEXICAN STATES
SECRETARIAT OF THE ENVIRONMENT
AND NATURAL RESOURCES

OFFICE OF THE UNDER-SECRETARY
FOR ENVIRONMENTAL PROTECTION
GENERAL DEPARTMENT OF
ENVIRONMENTAL IMPACT AND RISK

S.G.P.A./DGIRA.DG.4751.10

WITHOUT TEXT

(DOE/EIS-0414-S1)

Appendix-3

Energia Sierra Juarez LLC Wind Project MIA Summary (translation) (September 2009)

(Translation from Spanish)

Energía Sierra Juárez, S. de R.L. de C.V.
Monte Libano 235-401
Lomas de Chapultepec
C.P. 11000 Mexico, D.F.
(52)(55) 5249 9370
AAbreu@SempraGeneration.com

Applicant: Energía Sierra Juárez, S. de R.L. de C.V.

Subject: Filing Regional Category Environmental Impact Statement for "Energía Sierra Juárez" Project

[Ink stamp showing date of receipt]

EDUARDO ENRIQUE GONZÁLEZ HERNÁNDEZ
GENERAL BUREAU OF ENVIRONMENTAL IMPACT AND RISK
OFFICE OF THE UNDERSECRETARY FOR ENVIRONMENTAL PROTECTION
MINISTRY OF THE ENVIRONMENT AND NATURAL RESOURCES

I, ALBERTO ABREU, representing the company called ENERGÍA SIERRA JUÁREZ, S. de R.L. de C.V., furnishing as proof of my authority to act in said capacity Notarial Document No. 70,245, which was prepared, witnessed and certified by Ricardo del Monte Núñez, Notary Public No. 8 in and for the city of Tijuana, Baja California, as the official record of the change of corporate name of BAJA WIND, S. DE R.L. DE C.V., to ENERGÍA SIERRA JUÁREZ, S. DE R.L. DE C.V.; as well as Notarial Document No. 69,012, which was prepared, witnessed and certified by Ricardo del Monte Núñez, Notary Public No. 8 in and for the city of Tijuana, Baja California, as the official record whereby powers of attorney were granted to the undersigned (certified copies of both documents, together with a simple copy of each one, to be compared and conformed, are enclosed herewith and marked ANNEXES 1 and 2, respectively), specifying as an address for purposes of notice Monte Líbano 235-401, Colonia Lomas de Chapultepec, 11000 México, Distrito Federal [Mexico City], telephone number 5249-9370 and fax number 5249-9399, and authorizing for such purposes, within the broad meaning of article 19, of the Federal Law of Administrative Procedure [*Ley Federal de Procedimiento Administrativo (LFPA)*], Luis Reynaldo Vera Morales, Octavio Carvajal Trillo, Martín Sosa Sierra, Alejandro Aldana Galván, Fiorella Corona Velázquez, Cristina Hernández Calzada, Juan Carlos Aguirre Martínez and/or Gabriel Rodrigo Bustamante Brambila, Attorneys at Law, and Alan Almanza Doniz, Daniel Gómez Ramírez, Olga María Alemán Cartaya, Julio César Henao, María Cristina Kessel Enríquez, Areli Covarrubias Martínez, Denise Barragán Niño de Rivera, Luis Eduardo Quintana Ruíz, Diana Corona Vadillo, Carmen Jiménez Manzano, Jesús Enrique Pablo Dorantes, hereby respectfully appear before you and state:

That, on behalf of my principal, I hereby comply with the provisions of articles 5, sections II and X, 6, 28, sections IX and X, and 30, of the General Law of Ecological Balance and Environmental Protection ("LGEEPA", its acronym in Spanish, *Ley General del Equilibrio Ecológico y la Protección al Ambiente*); articles 2, section 1, 5, paragraphs Q and R, 9 and 11, section II, of the Regulations to the *LGEEPA*, in the Area of Environmental Impact Assessment ("REIA", its acronym in Spanish, *Reglamento de la LGEEPA en Materia de Evaluación del Impacto Ambiental*], and 16, of the *LFPA*; to submit for evaluation on the subject of

environmental impact, the Project entitled "Energía Sierra Juárez" (hereinafter, "the Project"), involving the construction and operation of an eolic energy park and associated infrastructure located in the municipalities of Tecate, Ensenada and Mexicali, all of them in the State of Baja California Norte, in accordance with the following

I. BACKGROUND FACTS

1.- Energía Sierra Juárez, S. de R.L. de C.V. (formerly, Baja Wind, S. de R.L. de C.V., formerly Ecogas Holding Company, S. de R.L. de C.V.), is a Mexican company having foreign capital participation, formed pursuant to Notarial Document number 59,740, dated 23 September 23, 2005, which was prepared, witnessed and certified by Ricardo del Monte Núñez, Notary Public No. 8 in and for the City of Tijuana, Baja California.

2.- The corporate purpose of Energía Sierra Juárez, S. de R.L. de C.V., includes, *inter alia*, (i) the realization of all types of projects in the electrical energy and natural gas sectors, as permitted by law, and (ii) to lend and to contract all kinds of services, including, without limitation, administrative, technical, professional, entertainment, teaching, training and advisory, consulting, planning, structuring and project administration ones.

3.- Evidence of the corporate purpose of the company having been furnished, there follows:

II. LEGAL CONSIDERATIONS

4.- In accordance with the articles of law cited herein on the subject of environmental impact assessment, the work or activities my principal intends to develop, consisting of the construction and operation of an eolic energy park and associated infrastructure. Consequently, this Project is subject to an environmental impact evaluation as provided in article 28 of the LGEEPA and article 5 of the REIA.

5.- Based on the foregoing and in compliance with the requirements of the provisions of law mentioned, enclosed herewith please find for your consideration the Regional category Environmental Impact Statement for the Project, of which an original and four copies are being submitted, on Compact Disk (CD). Said statement includes the characterizations, diagnosis, assessment of impacts and proposals of measures for mitigation and compensation, which, in the opinion of the consultants specialized in environmental matters, render execution of the Project a viable proposition, although the decision in this regard ultimately and clearly lies with the General Bureau.

6.- Also enclosed herewith please find form SHCP 5 (ANNEX THREE), pertaining to payment of the government fees for receipt and evaluation of the regional category Environmental Impact Statement, which has been duly made at a banking institution.

On the basis of everything hereinabove set forth, I respectfully request the General Bureau:

FIRST: Deem me to have appeared pursuant hereto, and acknowledge the authority with which I do so.

SECOND: Deem that it has been duly informed of an address for purposes of notice and the persons authorized for same.

THIRD: Deem me to have submitted the Regional category Environmental Impact Statement for the Project.

FOUR: Once the steps required by law have been completed, issue approval in the area of environmental impact, for development and operation of the Project referred to in the body hereof.

Mexico City, Federal District, 11 September 2009

RESPECTFULLY SUBMITTED

[Illegible signature]

ENERGÍA SIERRA JUÁREZ, S. de R.L. de C.V.
Alberto Abreu
Legal Representative
AAbreu@SempraGeneration.com

I, Olivia A. Lugo Alcántara, Expert Translator, duly authorized by the Superior Court of Justice of the Federal District, as per publication in Judicial Bulletin dated June 1, 2009, do hereby Certify that the foregoing is, to the best of my knowledge and belief, a true and correct translation of the document in Spanish.

Mexico City, Federal District, April 8, 2010

Olivia A. Lugo Alcántara

AUTORIZADO POR EL TRIBUNAL
Olivia Lugo Alcántara
Perito Traductor
SUPERIOR DE JUSTICIA DEL D.F.

(Translation from Spanish)

EXECUTIVE SUMMARY

"Energía Sierra Juárez" (hereinafter referred to as the Project) is a project to generate electricity through the use of wind potential; in other words, an eolic park. The Project will be located in the Northern region of Baja California, to the South of the Mexican-U.S.A. border, and will incorporate portions of the municipalities of Tecate, Ensenada and Mexicali. The Project contemplates an investment of some 2.5 billion U.S. dollars and will have a useful life of approximately 60 years. The principal advantages of the Project include the generation of electrical energy without the emission of greenhouse-effect gases or the emission of gases causing the formation of ozone or of particles smaller than 10 micrograms (PM-10).

The development of an eolic project is considerably different from electricity generation projects that use "traditional" energy sources. The need for each wind generator to be located in a place where maximum advantage can be derived from the wind, dictates the design of an eolic park (that is, the size of the towers and turbines, their location, and, to a large extent, the rest of the eolic park infrastructure, such as highways, electricity collection lines, transmission lines, substations, operations buildings, etc.). Given that eolic potential is intermittent and varies from one place to another, the wind generators will be installed in an irregular pattern across the landscape, with wind generator clusters being formed in those areas where wind power is great enough to support its utilization in a technically and economically feasible manner.

On the basis of Article 11 of the Regulations to the General Law on Ecological Balance and Environmental Protection (GLEBEP) [*Ley General del Equilibrio Ecológico y la Protección al Ambiente (LGEEPA)*], in the area of Environmental Impact Assessment (REIA) [*Evaluación del Impacto Ambiental (REIA)*], it was considered that there was a need to submit a Regional category Environmental Impact Statement (EIS) [*Manifestación de Impacto Ambiental (MIA)*], one evaluating the Project in an overall, entire way, in order to:

a) Avoid segmentation of the Project (which could happen, for example, if a separate EIS were requested for each ESJ area).
b) Study the environmental impacts in a complete way on the entire area where the Project might be located.
c) Assess the cumulative, synergetic and residual impacts (which might not be identified if separate authorizations were requested for each ESJ Area or cluster where wind generators will be installed).

The amount of area the Project will use for installation of all necessary infrastructure, called the Project Area (PA), will be 5,120 hectares [ha], calculated as the total size of all areas involved in all phases of the Project (1, site preparation and construction; 2, operation and maintenance; and 3, abandonment). Of these, 2,190 ha would be used permanently by Project facilities (Area occupied during the operations and maintenance phase, or AOM), while the remaining 2,930 ha would be rehabilitated once the construction work were completed (Area occupied during the site preparation and construction phase, or APC).

The main Project infrastructure will consist of: wind generators (an estimated maximum of 1,000); roads (up to 900 kilometers [km] approximately); meteorological towers, both temporary

(up to 100) and permanent (up to 75); electrical substations (up to 11); an electricity conductor line (up to 248.5 km); an aerial electricity collection system (up to 980 km); operations and maintenance buildings (up to 6), and temporary construction-support areas, such as camps (up to 3), areas for concrete tower manufacturing (up to 5), concrete plants (up to 6), offices, warehouses and temporary parking lots (the same areas as the operations and maintenance buildings), and areas for crushing and sifting the material removed during excavation (up to 6).

It should be emphasized that, as of the date this EIS is submitted, none of the Project construction work has begun. However, certain prospective studies, including environmental, civil, and flora and fauna surveys and preliminary geotechnical research, have been conducted and provisional meteorological towers have been installed.

The anticipated execution time of the Project (60 years) covers the stages and intervals that are indicated below: 10 years for engineering and design, 18 years for site preparation and construction, 18 years for preoperation and 57 years for operation and maintenance. These phases will overlap, because of the need for Project development to be gradual:

PHASE \ YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22 - 30	31 - 40	41 - 50	51 - 60
Engineering & Design																									
Site Preparation																									
Construction																									
Pre-operation (Commissioning)																									
Operation																									
Maintenance																									

Figure R-1. General Project Schedule

The principal waste generated by the Project over its useful life would be: construction debris; residues from clearing and grubbing (5 120 000 m³); organic and inorganic office and domestic waste (2,303,000 m³); used grease (20 m³/year); used oil (955 m³/year); liquid coolant (105 m³/year), and demolition debris (600 000 m³). All waste will be disposed of in a proper manner consistent with applicable standards and at authorized sites, which will be located outside the General Project Area (as hereinafter defined). No type of waste will be treated on site.

The Project is linked to the following *Normas Oficiales Mexicanas* [Official Mexican Standards] (NOM) in matters of the environment, electricity and safety and health, which it will follow and meet at all times:

NOM	Subject
NOM-001-SEDE-1999	Electrical installations
NOM-001-SEMARNAT-1996	Waste water discharge into national bodies of water and resources
NOM-041-SEMARNAT-1993, Which establishes the maximum permissible limits of polluting gas emissions from the exhaust of automotive vehicles in circulation that use gasoline as fuel.	Atmospheric emissions
NOM-045-SEMARNAT-1996. Which establishes the maximum permissible opacity levels of smoke from the exhaust of automotive vehicles in circulation that use diesel or mixtures containing diesel as fuel.	Atmospheric emissions
NOM-052-SEMARNAT-1993, Which establishes the characteristics of hazardous wastes, a list of same and the limits that make a waste hazardous because of its toxicity to the environment.	Hazardous Waste
NOM-059-SEMARNAT-2001, Environmental protection – species of flora and wildlife native to Mexico – risk categories and specifications for [determining] their inclusion, exclusion or change – list of species at risk.	Biodiversity (Flora and Fauna)
NOM-081-SEMARNAT-1994, Which establishes the maximum permissible limits of noise emissions from stationary sources and the method of measuring them.	Noise emissions
NOM-001-STPS-1999, Buildings, commercial spaces, work center areas and facilities – Health and safety conditions.	Industrial health and safety
NOM-002-STPS-2000, Conditions of safety – Fire prevention, protection and combat in work centers.	Industrial health and safety
NOM-004-STPS-1999, Protection Systems and Safety Devices For Machinery And Equipment Used in the Workplaces.	Industrial health and safety
NOM-005-STPS-1998, Concerning health and safety conditions in work centers for handling, transporting and storing hazardous chemical substances.	Industrial health and safety
NOM-010-STPS-1999, Health and safety conditions in work centers where chemical substances capable of generating pollution in the labor environment are handled, transported, processed, or stored.	Industrial health and safety
NOM-011-STPS-2001, Health and safety conditions in work centers where noise is produced.	Industrial health and safety
NOM-015-STPS-2001, Raised or lowered thermal conditions – Health and safety conditions.	Industrial health and safety
NOM-017-STPS-2001, Personal protection equipment – selection, use and handling in work centers.	Industrial health and safety
NOM-018-STPS-2000, System for identification and communication of dangers and risks because of hazardous chemical substances in work centers.	Industrial health and safety
NOM-021-STPS-1993, Concerning the requirements and features of reports on work-related risks that may occur, for integrating statistics.	Industrial health and safety
NOM-022-STPS-1999, Static electricity in the workplace. Safety conditions.	Industrial health and safety
NOM-023-STPS-2003 Work in mines.	Industrial health and safety
NOM-024-STPS-2001, Vibrations – Health and safety conditions in work centers.	Industrial health and safety
NOM-025-STPS-1999, Lighting conditions in work centers.	Industrial health and safety
NOM-026-STPS-1998, Colors and signs for health and safety and identification of risks from pipe-conducted fluids.	Industrial health and safety
NOM-027-STPS-2000, Soldering and cutting – Health and safety conditions.	Industrial health and safety
NOM-100-STPS-1994, Safety – Pressure-contained dry chemical powder fire extinguishers – Specifications.	Industrial health and safety

In order to take advantage of the wind potential in the region in the best possible way, the Project infrastructure will be distributed in four different zones, defined as ESJ Areas (Jacume, La Rumorosa, Sierra de Juárez and Cordillera Molina, according to their geographical location). These Areas are within a polygon defined as the General Project Area (GPA), whose size totals 294,273.64 ha.

The region where the Project is located is part of two planning instruments: the Baja California Ecological Zoning Plan (BCEZP) [*Programa de Ordenamiento Ecológico de Baja California (POEBC)*] and the Baja California State Urban Development Plan (BCSUDP) [*Plan Estatal de Desarrollo Urbano de Baja California (PEDUBC)*]. These instruments divide the peninsula of Baja California into Management Units (MUs) and Environmental Subsystems (ESs) [in Spanish, *Unidades de Gestión (UGs)* and *Subsistemas Ambientales (Sb)*, respectively], which are defined on the basis of landscape units and are the subject of defined policies on use that dictate compatibility with different types of projects. After an exhaustive legal analysis of those rules, it was determined that the Project is compatible with the land uses established.

The Regional Environmental System (RES) [*Sistema Ambiental Regional (SAR)*] was determined considering the 4 MUs defined by the BCEZP, which are partially or entirely within the GPA, and includes the 15 ESs that are partially or entirely within the GPA (and also within the 4 MUs). The RES was deemed to be the Study Area (SA). These analyses also served to define 7 Exclusion Clusters (EC) where the Project will not install infrastructure (see Tables R-1 and R-2). The Exclusion Clusters are areas that, due to a certain restriction on use, or legal or environmental limitation, or for reasons of Project policy or for some other reason, cannot or will not be used by the Project. In this sense, the exclusion clusters were identified using the compatibility analysis performed in Chapter III for the wind generators and the electricity conduction lines.

Table R-1. Exclusion Clusters for Wind Generators

ID	Area	Appraisal	Area (ha)
01	"Vallecitos" archeological site	Use restricted because it has archeological value	165.50
02	Luis Echeverría town and La Rumorosa town	Urban zones restricted due to Urban Development Plans	5,772.18
03	Subsystems 1.2.S.3.9.a-1	Protected landscape, land use not compatible with installation of wind generators or transmission lines	1,316.82
04	Subsystems 1.2.S.3.9.a-3	Protected landscape, land use not compatible with installation of wind generators	10,345.16
05	"Constitución de 1857" National Park Protected Natural Area (does not include the part of ES 1.2.S.3.9.a-1)	Environmental importance	1,181.35
06	Natural grazing land area	Environmental importance (the only one within the RES, according to the land use letter from *INEGI* [acronym in Spanish, *Instituto Nacional de Estadística y Geografía* (National Statistics and Geography Institute)]	86.11
	Total area occupied by exclusion clusters:		**18,867.12**

Table R-2. Exclusion Clusters for Electricity Conduction Lines

ID	Area	Appraisal	Area (ha)
01	"Vallecitos" archeological site	Use restricted because it has archeological value	165.50
02	Luis Echeverría town and La Rumorosa town	Urban zones restricted due to Urban Development Plans	5,772.18
03	Subsystems 1.2.S.3.9.a-1	Protected landscape, land use not compatible with installation of wind generators or transmission lines	1,316.82
04	"Constitución de 1857" National Park Protected Natural Area (does not include the part of ES 1.2.S.3.9.a-1)	Environmental importance	4,616.50
05	Natural grazing land area	Environmental importance (the only one within the RES, according to the land use letter from *INEGI*	86.11
	Total area occupied by exclusion clusters:		**12,947.11**

General Project Area (GPA) Features

Within the GPA, there are warm climate areas with extreme daytime conditions, while other areas have a mild Mediterranean-type climate and there is a small portion that has a semi-cold climate. Extreme climatic events are few, but there are strong winds and snowfalls in the winter. In the summer, average temperatures range between 20°C and 30°C. Currently, the air quality within the GPA is naturally affected by soil particles in the most desertic areas.

Topographically, the GPA is a very rugged area, hard to reach and with crags and boulders. The GPA does not have places subject to flooding, but there are areas of structural instability and the probability of earthquakes is high. Soils, in the majority of cases, are not worked and have no vegetation cover because of their poor nutrient quality.

Hydrologically, the GPA has few surface bodies of water and those that exist are intermittent. The quality of the water in them is affected by the presence of dissolved solids (sodium chloride, phosphorus, nitrate and potassium), due to intensive agricultural and/or livestock activities in the past.

There are a total of 13,860 primary vegetation clusters within the GPA classified as shrubland [chaparral], desertic rosette scrubland, pine forest, Mexican juniper [*Táscate*] forest, Gallery forest and grazing land, while the predominant secondary vegetation consists of types species of grazing-induced land, besides those areas classified as "having no apparent vegetation"[1]. On-site studies conducted by CAM during the first four months of 2009 included 150 sampling points, describing all types of vegetation present. Using the bibliographic records of plant species for the state of Baja California, nearly 400 species could be accounted for in the GPA. Based on the samplings conducted by CAM as well as by the *Instituto de Ecología, A.C.*, and the San Diego Zoo and Conservation and Research for Endangered Species (*INECOL* & CRES, 2008), approximately 172 species of flora were identified on-site and within the GPA, of which eight are in some category of risk, according to NOM-059-SEMARNAT-2001.

Regarding fauna, as a result of the *INECOL* & CRES (2008) and CAM bibliographical analysis, in the GPA 404 species of vertebrates were listed, of which 11 species belong to the amphibian group, 58 to the reptiles one, 75 to that of mammals (21 species of bats) and 260 species to the

[1] The Geographical Information System developed by CAM for the Project made it possible to define vegetation clusters. The basic components were a Digital Elevation Model, the layers of Vegetation and land use, topography, localities, roads, hydrography, geology, pedology, among others, developed by *INEGI* for the year 2005, as well as the present layer of Vegetation and Land Use that CAM constructed on the basis of the on-site samples associated with the satellite image verification. The comparative analysis yielded a similarity of 83% between the arrangements observed in the different years, with the remaining 17% being attributable to the prevailing dynamics, provable by the growth of the areas covered by grazing-induced land and the decrease in pine forest, open pine forest and Mexican juniper [*táscate*] forest. In addition, Landsat Multispectral Scanner (MSS) images, false-color from the years (1973, 1986, 1922, 2000 and 2008) were used.

Using the ArcGIS version 9.2 program's "Spatial Analyst" tool, it was possible to obtain and classify 13,945 different size polygons that were differentiated according to their type of vegetation. With this tool, it was possible to recognize, at that moment, where each type of vegetation is found and what its size is.

group of birds. On-site, there were 120 species of birds observed, 3 species of bats, 28 species of non-flying mammals and 25 species of reptiles and amphibians.

Table R-3 shows the number of flora and fauna species listed bibliographically and which are in some category of risk, according to NOM-059-SEMARNAT-2001, "UICN", 2008; "CITES", 2008, and "CPFF" and "BENPA", 1942.

Table R-3. Number of Species of Flora and Fauna in Some Category of Risk
(Records obtained from *INECOL* & CRES, 2008 and CAM)

Flora and Fauna	Total number of species in some category of risk	Total number of species in NOM-059	Total number of species in "CITES"-2008	Total number of species in "UICN"	Total number of species in "CPFF" and "BENPA"
Flora	0	0	0	0	0
Bird Fauna	47	26	28	9	2
Bat Fauna	5	2	0	4	0
Mammalian Fauna	23	22	4	5	0
Amphibian Fauna	28	23	2	5	0
Total per Group and Category	**103**	**72**	**34**	**23**	**2**

Based on the conditions present in the GPA, as well as the definition of environmental services proffered by SEMARNAT[2] [acronym in Spanish, *Secretaría de Medio Ambiente y Recursos Naturales* (Ministry of the Environment and Natural Resources)] (2003), it is acknowledged that each type of vegetation can provide different environmental services, and for that reason each one has been independently identified. For this EIS, an analysis was performed for each type of vegetation present within the GPA, which is summarized in Table R-4.

Table R-4 shows, furthermore, that within the GPA all types of vegetation provide similar environmental services. These types of vegetation will not be compromised by Project activities, because of the dispersal of the latter and the small percentage of total GPA area that Project activities will take up.

With respect to the concept of a biological corridor ("CONABIO", 2009)[3], the Baja California Peninsula forms a continuum for the types of vegetation and associated fauna that characterize the "Sonora Desert" along the North-South axis (see Figure R-2). The Project will not compromise that continuity due to the fact that extends the entire length of the GPA and that no

---

[2] Consistent with *SEMARNAT* 2003, *Environmental services are those processes and functions of ecosystems that, in addition to directly influencing [the] maintenance of life, generate benefits and wellbeing for persons and communities.* In this sense, environmental services are deemed to exist only if, and to the extent that, a human being indirectly derives intangible benefits from them.

[3] In accordance with the definition of the National Commission on Knowledge and Use of Biodiversity [*Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO)*], the concept of biological corridor, ecological corridor or conservation corridor, is used to designate a large region throughout which the existing protected areas (national parks, biological reserves) or the remnants of the original ecosystems, preserve their connected nature through productive activities in the intermediate landscape that permit the flow of species.

continuous barriers will be installed that could interrupt the natural flow of the vegetation and fauna.

Table R-4. Environmental Services Provided within the GPA, per Type of Vegetation

No.	"selatnelbma soicivreS"	Pine Forest	Open Pine Forest	Mexican Juniper Forest	Gallery Forest	Shrubush	Pine Shrubush	Desertic Scrubush	Grazing Land	No Apparent Vegetation	Secondary Vegetation
1	Regulation of the climate and buffering the impact of natural phenomena	X	X	X	X	X	X	X	X		X
2	Provision of sufficient quality and quantity of water	X	X	X	X				X		X
3	Oxygen production	X	X	X	X	X	X	X	X		X
4	Control of erosion, as well as soil generation, preservation and recovery	X	X	X	X	X	X	X	X		X
5	Carbon capture and assimilation of different pollutants	X	X	X	X	X	X	X	X		X
6	Protection of biodiversity, the ecosystems and forms of life	X	X	X	X	X	X	X	X		X
7	Pollenization of plants and biological control of pests	X	X	X	X	X	X	X	X		X
8	Breakdown and recycling of organic waste	X	X	X	X	X	X	X	X		X
9	Beauty of the countryside and recreation	X	X	X	X	X	X	X	X		X

Assessment Methodology

Among the particular considerations of the Project, what stands out is the fact that the different ESJ Areas will be developed individually and at different points in time, on account of the topographical variation and the variation in wind potential that exists in the Juárez Sierra. In addition, careful thought has been given to the technical complexity of determining the exact location and the very specific characteristics of all the infrastructure components needed for the Project and this has made it imperative that the environmental impacts of the Project be evaluated in an integral fashion. In this way, the cumulative and synergic impacts could be identified. The methodology employed for purposes of performing this assessment is described as follows:

1. **Identification of Impacts:** control lists were used to identify the environmental parameters of the Project and its activities. Subsequently, a Modified Leopold Matrix was used to analyze the interaction among them.

2. **Impact Assessment:** 11 factors were analyzed for each impact (1, nature; 2, intensity; 3, extension; 4, time; 5, persistence; 6, reversibility; 7, synergy; 8, accumulation; 9, cause-effect relationship; 10, frequency, and 11, recoverability, and using the information thus obtained, the significant impacts were identified[4].

[4] The Regulations to the GLEBEP, on the subject of Environmental Impact, define a significant or relevant environmental impact as one resulting from a human or natural action provokes alterations in the ecosystems and their natural resources or on health, posing obstacles to the existence and development of man and of other living beings, as well as of natural processes.

3. **Identification of cumulative and synergic impacts:** the possible interaction by all of the significant impacts that exhibited an ability to become cumulative or to have a synergic effect, were analyzed using two interaction matrixes of the relevant impacts.

4. **Identification of residual impacts:** the 11 factors were evaluated anew, considering the mitigation measures proposed, and this resulted in the identification of impacts that would persist even after said measures were applied. In this respect, it should be pointed out that after the mitigation measures were applied, the residual impacts no longer proved to be significant[5].

A qualitative classification was carried out of the different subsystems included in the GPA to determine the existing level of compatibility in each one of them with the Project. This was based on the level of fragmentation of the vegetation and the intensity of the infrastructure installation.

In a supplementary fashion, the interaction of Project impacts with other eolic projects that have been approved by SEMARNAT in the region and which therefore could be developed there.

As a result of the environmental impacts assessment, a total of 86 relevant interactions (significant impacts) between the Project and the environmental parameters existing in the GPA were identified. Of these 86 relevant interactions, 12 impacts were considered beneficial, 6 cumulative, 51 synergic and 27 residual, which same ones would be attenuated to a not relevant level (not significant) through the application of prevention, mitigation, or effective compensation measures,.

Determining the Area of Influence and Prevention, Mitigation and Compensation Strategies

The Project's Area of Influence was defined on three different levels: the Facilities Area of Influence (area occupied directly by Project works, temporarily or permanently), the Wind generators Area of Influence (the area over which an wind generators could have an effect, considering a 360º rotation and the tower supporting it, as the axis) and the Socioeconomic Area of Influence (the geographical area over its indirect effects would extend, relating to such factors as job creation, economic spillover and improvement in the quality of life of the population.

Based on results of the assessment and careful consideration of the environmental impacts, measures of prevention, mitigation and compensation were drawn up that have been included in an Environmental Monitoring Program (EMP) consisting of nine plans:

1. Plan for Monitoring Birds and Bats (PMBB)
2. Plan for Study, Rescue and Protection of Fauna (PSRPF)
3. Plan for Study, Rescue and Protection of Flora and Rehabilitation (PSRPFR)
4. Plan for Construction, Operations and Maintenance Support (PCOMS)
5. Waste Management Plan (WMP)

[5] In terms of the definition of "significant" set forth in the Regulations to the General Law on Ecological Balance and Environmental Protection, in the area of Environmental Impact Assessment (REIA) in the area of Environmental Impact Assessment (REIA).

6. Fire Protection Plan (FPP)
7. Erosion and Sedimentation Control Plan (ESCP)
8. Plan for Compensation in Areas used During the Operations and Maintenance Phase (PCOM)
9. Abandonment Plan (AP)

Since Project development will proceed gradually, in phases and sequentially, the EMP will be implemented the same way. This will permit ongoing improvement of the Plan, and thereby success in maximizing the efficiency and efficacy of the measures adopted, so that the impact Project activities have is reduced to a minimum.

Finally, it is important to emphasize that, in addition to its contributions enhancing the local environment, through the production of electric energy without the use of fossil fuels, and therefore without generating atmospheric pollutants like particles under 10 micrograms (PM-10) in size, nitrogen oxides, carbon monoxide, toxic substances or volatile organic compounds, the most important environmental contribution of the Project exists on a global scale. This is because it will be able to prevent the emission of between 1 and 2 million tons of greenhouse-effect gases a year if the 1000 MW envisaged are developed ("AWEA", 2009 and others).

The magazine *Nature*, in April 2009, published a series of global warming model studies, concluding that the greenhouse-effect gases (GEGS – e.g., CO^2, methane and nitrous oxide) are already acting in the atmosphere and have raised the temperature of the planet by up to 0.8°C. The goal for the concentration of GEGS to begin to reverse their effects would be to lower the production of emissions of these gases to a level of concentration in the atmosphere of 350 ppm. Failure to achieve this reduction could result in an increase in the global temperature of between 2.5° C and 6.4° C, which would result in a radical change in life on the planet as we know it now. In this way, and with a general increase in the use of different renewable non- or low-polluting energy sources such as solar, wind, hydraulic, geothermal, hydrogen, biodiesel, etc., would overall contribute to a significant reduction in the concentration of GEGS in the atmosphere, which would support the reversal of global warming.

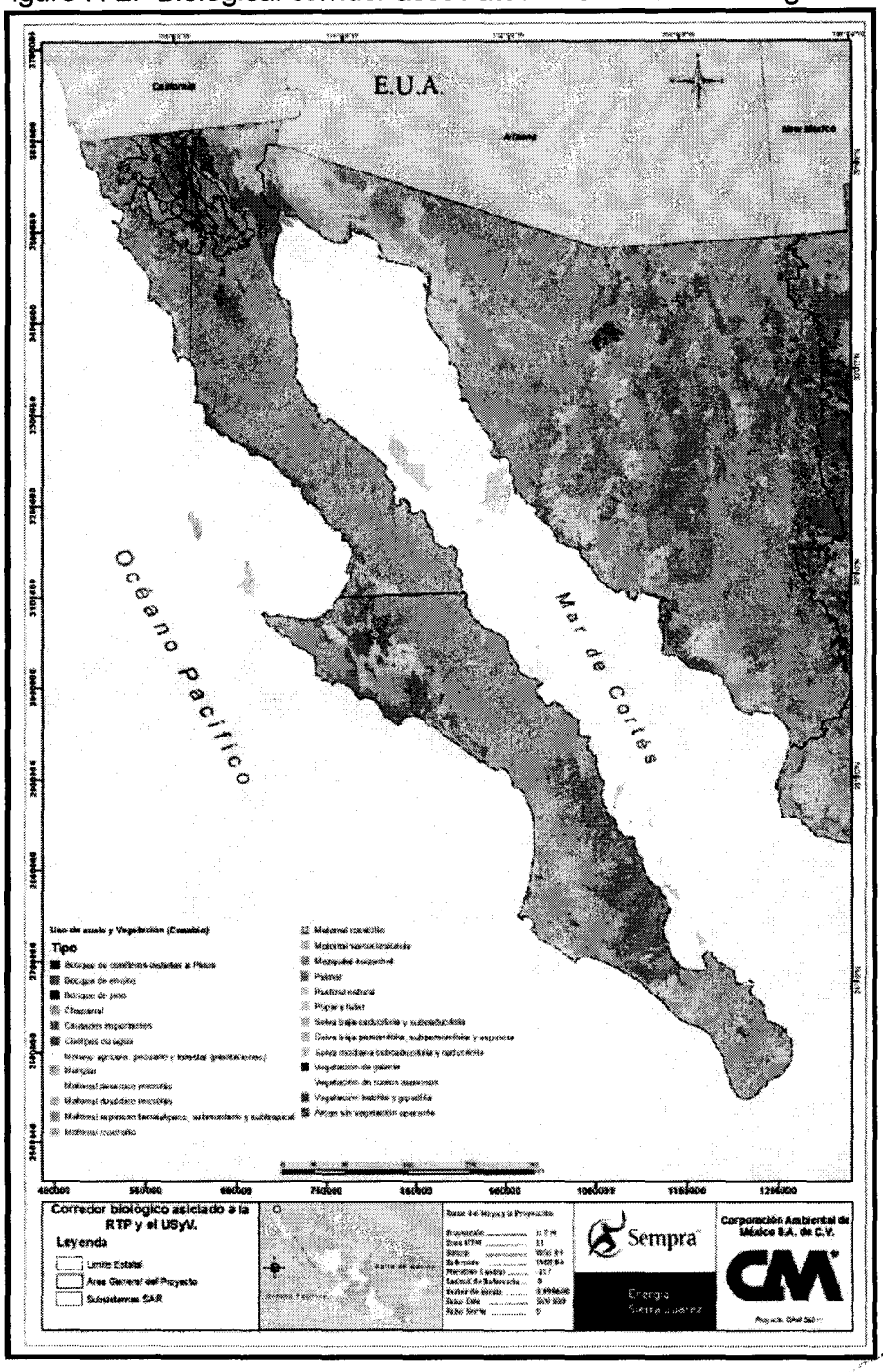
Based on the results of the assessment of environmental impacts obtained during the preparation of this EIS, it may be concluded that the Project deserves to be authorized, to harness the natural vocation of wind power in this area of Baja California, since, among other factors:

1. The total area taken up by the Project represents a minimum percentage of the land in the GPA.
2. The resulting visual vulnerability of the GPA with the effect of the Project is low.
3. The Project will be developed by Areas, which helps to minimize any impact on the different types of vegetation providing similar environmental services in the GPA and keep the Project from compromising the continuity of vegetation and fauna in the GPA. The division of the Project will also afford an opportunity to perfect and maximize the efficiency of the plans included in the EMP.
4. The Project will respect and comply with laws applicable to the GPA and will not build infrastructure within the Exclusion Clusters or outside the GPA.
5. The Project will contribute to the local beneficial interest by not having polluting emissions associated with the burning of fossil fuels, as also its greater benefit at the

global level by reducing the concentration of GEGS in the atmosphere, which translates into support for the reversal of global warming.

Specifically, it may be stated that the environmental, economic and social benefits of the Project far surpass the adverse effects thereto.

Figure R-2. Biological corridor associated to Soil Use and Vegetation



I, Olivia A. Lugo Alcántara, Expert Translator, duly authorized by the Superior Court of Justice of the Federal District, as per publication in Judicial Bulletin dated June 1, 2009, do hereby Certify that the foregoing is, to the best of my knowledge and belief, a true and correct translation of the document in Spanish.

Mexico City, Federal District, April 8, 2010

Olivia A. Lugo Alcántara

AUTORIZADO POR EL TRIBUNAL
Olivia Lugo Alcántara
Perito Traductor
SUPERIOR DE JUSTICIA DEL D.F.