

Border Environment Cooperation Commission

Los Vientos Windpower 1A

Willacy and Cameron Counties, Texas

1. General Criteria

1.a Project Type

Project Name: Los Vientos Windpower 1A (“Project”)

Project Sector: Clean and efficient energy

1.b Project Category

Category: Private-sector environmental infrastructure project

1.c Project Location and Community Profile

Communities: Willacy and Cameron Counties, Texas.

Location: The Project will be constructed on 12,800 acres of private land located in both, Willacy and Cameron Counties. The Project is 10 miles north of the city of Harlingen in extreme southeast Texas. Willacy and Cameron Counties are bordered by Kennedy County to the north, Hidalgo County to the west, and the Gulf of Mexico to the east. Figure 1, below, shows the approximate geographical location of the Project.



Figure 1. Project Location

The project is located in Willacy and Cameron Counties, TX, with infrastructure constructed completely within the 100 km of the US-Mexico border. **The specific project site is located 40 km (25 miles) north from the US-Mexico border.**



Figure 2. Location of the region of the project within the Border Region.

The region where the Project will be located has excellent wind resources. The area boasts the distinct advantage of providing both (i) strong winds; and (ii) a desirable wind generation profile that primarily matches peak load. According to the National Renewable Laboratories (NREL), the Project area's wind resources compare favorably to that of the rest of the U.S., as can be seen in Figure 3.

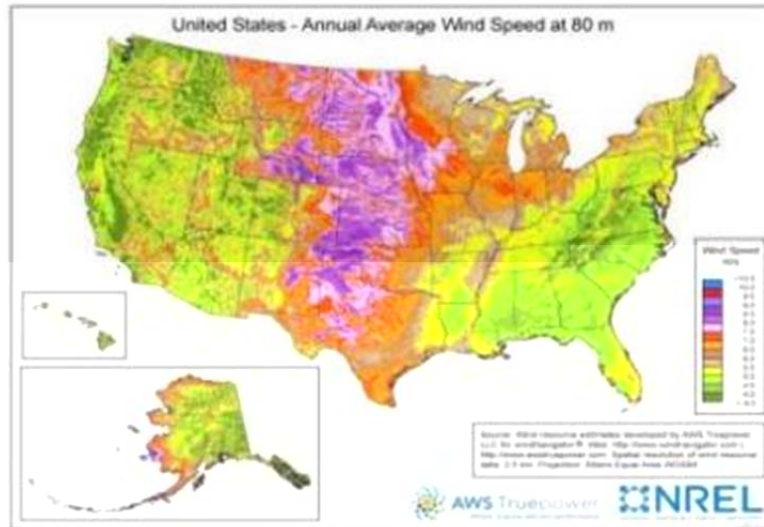


Figure 3. Wind Resource Potential

Demographics:

Willacy County

Current population:	22,134 (2010 Willacy County Population)
Growth rate:	1.9 % (2010)
Primary Economic Activities:	Professional and business services; sales; and general services (U.S. Census Bureau, 2010)
Labor Force:	9,377 (Last observation: 2011-12) ¹
Per capita income:	\$10,800 (2010)
Median household Income:	\$28,307 (2010)
Occupied Housing Units:	5,485 (2010)
Total Housing Units:	7,040 (2010)
Average Household Size:	3.72 persons per household (2010) ²

Cameron County

Current population:	406,220 (2010 Cameron County Population)
Growth rate:	1.6 % in(2010)
Primary Economic Activities:	Sales; professional and business services; farming; fishing; construction, extraction, and forestry (U.S. Census Bureau, 2010)
Labor Force:	158,388 (Last observation: 2011-12) ³
Per capita income:	\$13,695 (2010)
Median household Income:	\$31,624 (2010)

¹ U.S. Bureau of Labor Statistics.

² U.S. Census Bureau 2010. State and County Quick Facts. Willacy County.

³ Ibid 1

Occupied Housing Units: 113,547 (2010)
 Total Housing Units: 141,924 (2010)
 Average Household Size: 3.44 persons per household (2010)⁴

Energy Generation and Consumption

The US Department of Energy, Energy Information Administration (EIA) provides a state-by-state reference for information and data covering energy production and demand. The following figure, from the EIA website, shows the locations of Texas’ electrical plants, renewable energy potential, and energy sources.⁵

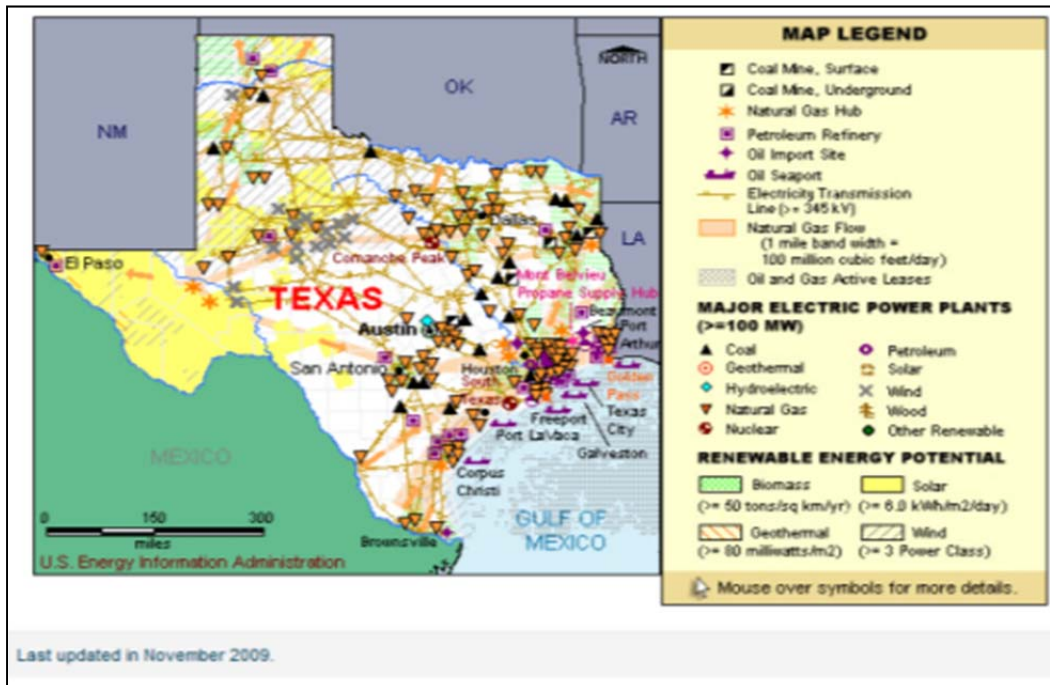


Figure 4. Texas’ Energy sources.

The EIA website describes that Texas produces and consumes more electricity than any other State, and per capita residential use is significantly higher than the national average. Approximately 75% of the land areas in Texas are served by the state-specific Electric Reliability Council of Texas (ERCOT) power grid. ERCOT manages the flow of electricity to 23 million Texas customers – representing 85% of the state’s electric load.

⁴ U.S. Census Bureau 2010. State and County Quick Facts. Cameron County.

⁵ U.S. DOE, Energy Information Administration (EIA) 2009a. State Energy Profiles – Texas.

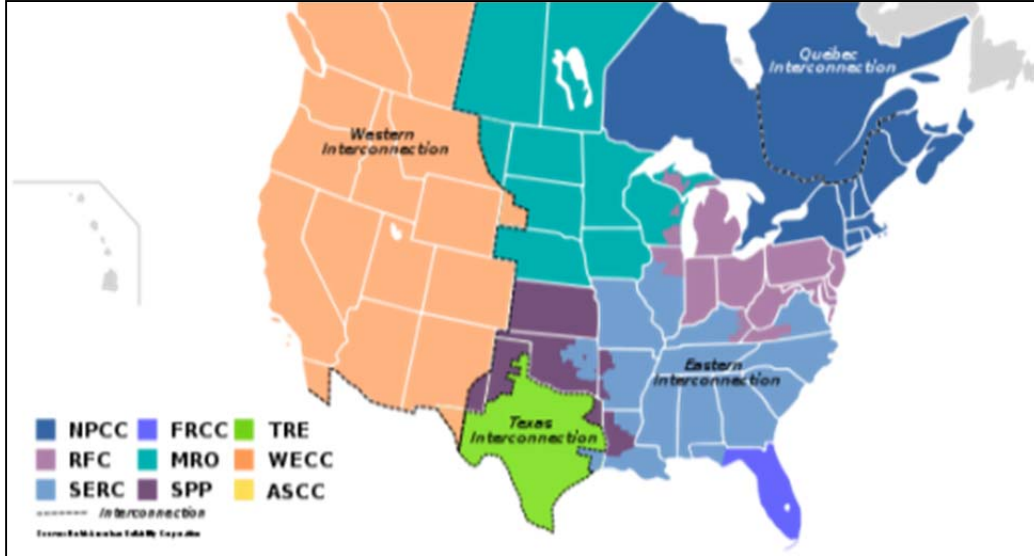


Figure 5. North American Regional Reliability Councils and Interconnections

The ERCOT grid serves much of the Texas border region with Mexico with the exception of, the far-west, El Paso County. The ERCOT website provides the following figure to show generation capacity, portfolio, and peak demand of the ERCOT power grid.

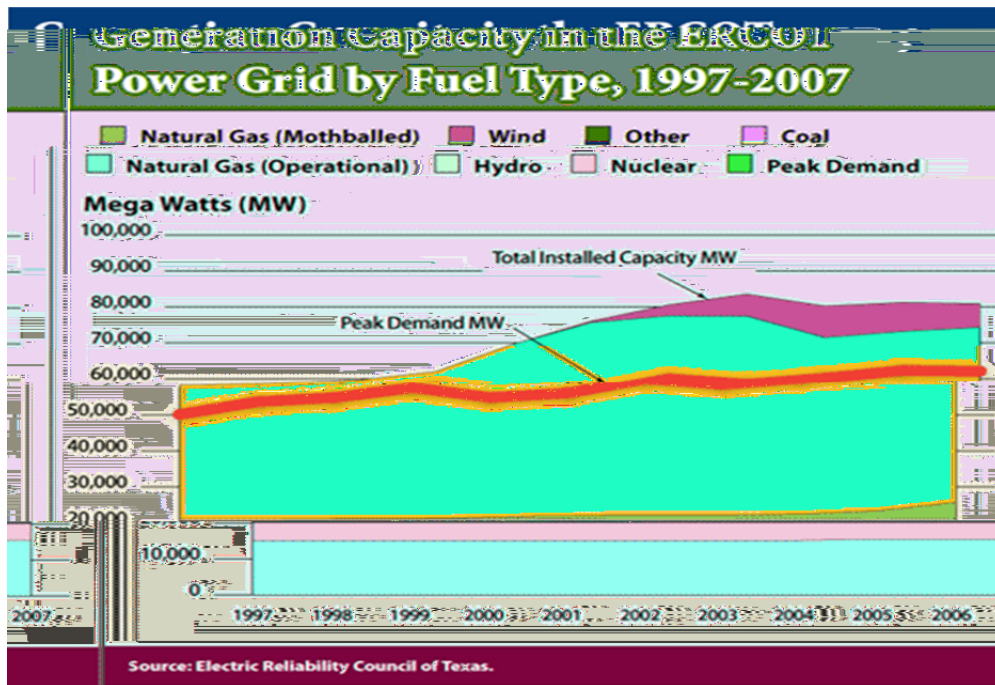


Figure 6. ERCOT Generation Capacity and Portfolio.

In 2011, the installed capacity for renewable sources available in the ERCOT power grid represented nearly 14% of the generation sources available. However, approximately 9% of the

electricity produced in 2011 was supplied by renewable sources including biomass, geothermal, hydroelectric, solar thermal, and wind resources while 91% is supplied by coal, natural gas, and nuclear power plants⁶.

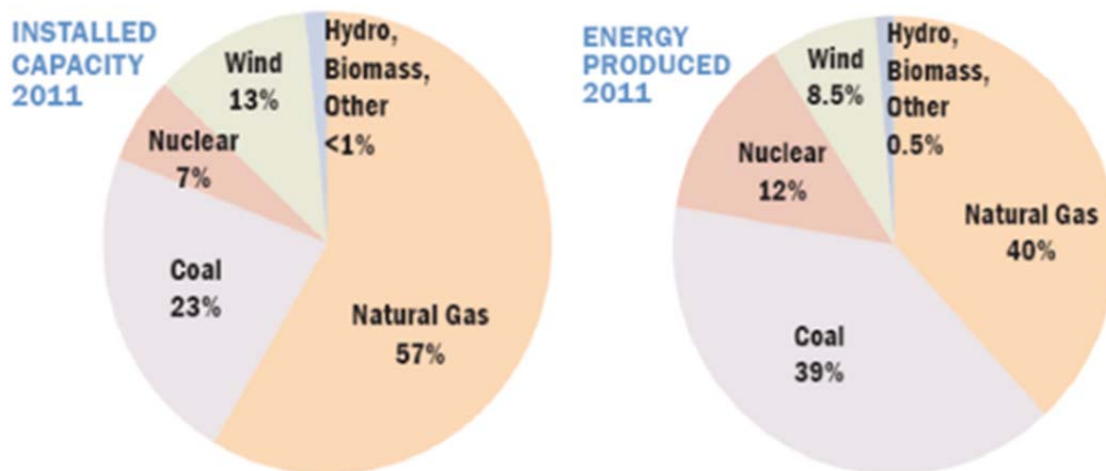


Figure 6. ERCOT 2011 Generation Capacity and Production

Texas leads the Nation and is fifth in the world in wind-powered generation capacity. The ERCOT Quick Facts resource states that in October 2011, wind generation established a record output of 7,400 MW, 15.2% of the load at that moment. At the end of 2011, ERCOT had 35,000 MW of active generation requests under review including 19,400 MW wind; 9,000 MW of natural gas; 3,600 MW coal; 940 MW biomass; and 1,600 MW of other sources, reflecting the trend of renewable energy displacement of the growth in development of traditional fossil-fuel based energy production.

1.d Legal Authorities

Project applicant:	Duke Energy Renewables (DER)
Representative:	Bill Keeney, Vice President, Wind Energy, DER
Legal instrument to demonstrate legal authority:	According to its Certificate of Formation, as amended, Los Vientos 1A is a Delaware-registered Limited Liability Company and possesses the legal authority to implement the Project, contract financing, and pledge the Project's revenues as a source of repayment for any financial obligations.
Date of instrument:	June 16, 2011
International Treaties and Agreements:	Not in conflict of any international treaties and agreements

⁶ ERCOT Quick Facts

1.e Project Summary

Project Description and Scope:

Wind farm

The Project consists of clean energy generated by wind turbines. The Project will be located in Willacy County, Texas on approximately 12,800 acres of land. The Project is expected to be comprised of 87 turbines, each with a 2.3 MW capacity. The turbines, which convert kinetic energy into electricity, will produce 200.1 MW. The electricity generated by the plant will be purchased by CPS Energy under a 25-year fixed price Power Purchase Agreement (PPA).

Transmission line

The electricity produced by the wind farm will be delivered through a 138 kV transmission line to the interconnection point located in Cameron County at the Rio Hondo substation administered by ERCOT. Los Vientos 1A substation (The Palm) interconnects to the Rio Hondo sub-station via an 8.5 mile (13.6 km) transmission line. Upon receiving the electricity generated, ERCOT will then credit the delivered energy to CPS.

The production of clean and emissions free electricity from the Project is expected to result in a displacement of over 466,488 metric tons of carbon dioxide (CO₂), 381 metric tons of nitrogen oxide (NO_x) and 797 metric tons of sulfur dioxide (SO₂) emissions per year⁷.

Population Benefited:

428,345 [406,220 (Cameron County); 22,134 (Willacy County)].

The Project is expected to provide enough electricity for the equivalent of more than 60,000 households⁸. Additionally, the sponsor estimates that during the construction of the farm, 150 to 250 full –time jobs will be created, depending on the construction cycle and nearly 100 of those will be hired locally for 12 months of construction. Also, it is estimated that 25 to 35 permanent jobs will be created by the projects, Los Vientos 1A and 1B⁹.

Finally, the landowners leasing their land to the Project will maintain the beneficial use of much of the property and receive additional benefits beyond the lease price including an additional payment related to the generation of power.

⁷ Based on the projected generation provided by the project sponsor and emission factors taken from the U.S. Energy Information Administration for Texas. <http://www.eia.gov/electricity/state/texas/>

⁸ Energy Efficiency and Renewable Energy. Energy consumption in Texas homes. <http://apps1.eere.energy.gov/states/residential.cfm/state=TX>

⁹ Los Vientos 1B is an independent Project being considered under separate action for certification and financing by BECC/NADB.

Project Map:

The following figure shows the site layout of the Project:

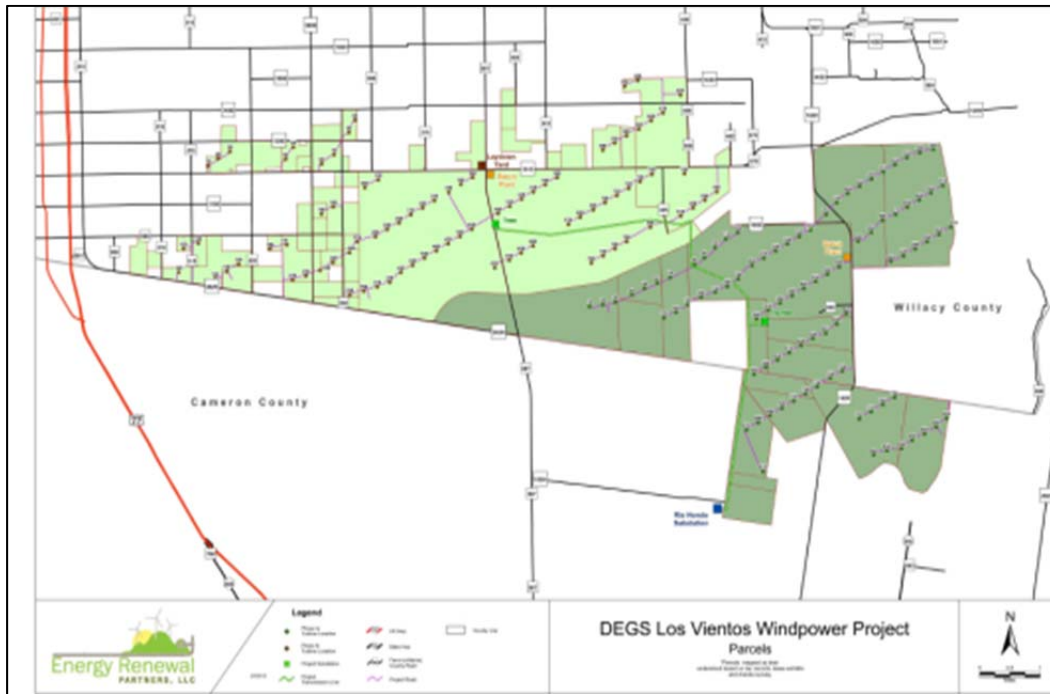


Figure 7. Project Site

Project Justification:

There is a need for affordable and environmentally beneficial alternatives to conventional fossil fuel-derived energy sources. Additionally, renewable energy projects create an opportunity to generate electricity without the same atmospheric emissions generated by fossil fuel fired plants.

Wind energy is a renewable energy which means it can be produced continuously and without depletion of natural resources. It is a clean form of renewable energy and is currently used in many leading developed and developing nations to fulfill their demand for electricity. Wind energy does not generate any greenhouse gas emissions or criteria pollutants (NO_x and SO₂). According to the anticipated generation performance provided by the sponsor, the aggregated environmental impact for the expected life of the project over the next 25 years is estimated to be equivalent to a reduction of nearly 11.6 million metric tons of CO₂.

Project Need or Consequences of No Action or Alternative:

In 1999, Texas produced a Renewable Portfolio Standard (RPS), as part of the state's electricity industry restructuring legislation, which was designed to increase the delivery of renewable electricity with associated environmental benefits to the people of Texas. The RPS initially mandated that electricity providers collectively generate 2,000 MW of additional renewable energy

by 2009¹⁰. In 2005, the Texas Legislature approved a new RPS to increase the state's total renewable energy mandate to 5,880 MW by 2015 and 10,000 MW in 2025¹¹. Additionally, the Public Utility Commission of Texas ("PUCT") established a Renewable Energy Credit ("REC") trading program that allows any retail electric provider, municipally-owned utility, or electric cooperative to satisfy its RPS requirement via the purchase of RECs if it is unable to reach its mandated RPS requirement in any given year. The State RPS target is allocated to competitive retail entities following a protocol based on their market share of retail sales.¹²

Municipally owned utilities, like CPS, are not subject to the State RPS; however, combined with CPS' efforts in solar power and other renewable projects, CPS has instituted a more aggressive goal for itself and hopes to achieve 1,500 MW of renewable energy power, or 20 percent of their total generation capacity, by 2020. This project will contribute to the accomplishment of this target as well as to the continued fulfillment of Texas' RPS, and specifically CPS' requirement to comply with the renewable energy supply percentage.

Additionally, under the REC trading program, although CPS may not be subject to the State RPS, the credits associated with the generated renewable energy can be sold to retail utilities that need them.¹³ CPS' investment in projects, such as Los Vientos, may provide sufficient RECs to support the compliance of the RPS for other utilities, which may not have the same financial strength, to comply with the RPS requirements and may have an opportunity to avoid an administrative penalty by purchasing RECs from CPS.

Finally, the no action alternative to the development of renewable energy sources creates greater demands for conventional fossil-fuel based energy production, further depleting natural resources for purposes of meeting an ever growing demand on energy as well as a lost opportunity to generate emission-free energy, such as that derived from wind energy.

¹⁰ State Energy Conservation Office. Texas Renewable Portfolio Standard.

¹¹ State Energy Conservation Office. Texas Renewable Portfolio Standard.

¹² ERCOT Protocols Section 14: Renewable Energy Credit Trading Program, August 1, 2009

¹³ <http://www.window.state.tx.us/specialrpt/energy/renewable/>

Pending Issues:

None.

Criterion Summary:

The Project meets all of the general requirements of the criterion.

2. Human Health and Environment

2.a Compliance with Applicable Environmental and Cultural Resource Laws and Regulations

Environmental and Public Health needs addressed by the proposed project:

Wind power does not produce waste by-products that require disposal or gas emissions that contribute to air pollution. It does not consume or pollute water.

Historically the United States has depended to a great extent on fossil fuels for the generation of energy. This conventional energy development can affect the natural environment due to the harmful emissions related to the generation process, including the release of greenhouse gases (GHG) as well as other pollutants such as sulfur dioxide (SO₂) and nitrogen oxides (NO_x). **According to the 2010 Greenhouse Gas Reporting Program Data of the United States Environmental Protection Agency (USEPA), power plants contributed to 63.5% of Texas' greenhouse gas emissions as reported for large facilities.**

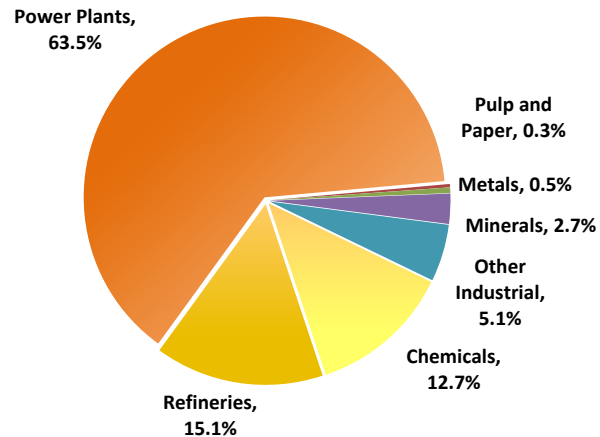


Figure 8. Texas Greenhouse Gas Emissions by Source, 2010.

As referenced in the table below, the current generation of electricity for the residents of Texas relies on a mix of energy production technologies including coal (36%), natural gas (45%), nuclear (10%), renewables (7%), and others (2%). Based on nearly 411.7 million MWh net generation of electricity for 2010 in Texas, 429,892 metric tons of SO₂, and 205,601 metric tons of NO_x were emitted.

Total Electric Industry (MWh)	NOx (metric tons in 2010)	SOx (metric tons in 2010)	CO ₂ (millions of metric tons in 2010)
411,695,046	205,601	429,892	252
Energy Source			
2010 (MWh)			
Coal	150,172,832		
Petroleum	708,481		
Natural Gas	186,882,238		
Other Gases ³	3,290,570		
Nuclear	41,335,248		
Hydroelectric	1,262,832		
Other Renewables ¹	27,704,828		
Other ²	339,017		
<small>¹Other Renewables includes biogenic municipal solid waste, wood, black liquor, other wood waste, landfill gas, sludge waste, agricultural byproducts, other biomass, geothermal, solar, photovoltaic energy, and wind</small>			
<small>²Other includes non-biogenic municipal solid waste, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, tire-derived fuels, and miscellaneous technologies</small>			
<small>³Other gases include blast furnace gas, propane gas, and other manufactured and waste gases, derived from fossil fuels.</small>			
<small>Note: Totals may not equal sum of components because of independent rounding.</small>			
<small>Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report" and predecessor forms.</small>			

Table 1. 2010 Texas Electric Power Industry Emissions Estimates

As shown in the above table, 82% of the electricity in Texas is generated by coal and natural gas power plants. The project will reduce the demand for fossil fuel fired electricity, and thus displace related harmful emissions. Additionally, because wind power has zero fuel cost, zero emissions and zero water use, the project will not contribute to new sources of emissions. For the next 25 years, the production of 763,377 MWh/year of zero-carbon generation will contribute to avoid CO₂ emissions of nearly 11.6 million metric tons into the atmosphere as compared to the current CO₂ intensity of the Texas electricity mix.

Public Health

The project will positively impact by reducing pollutants which may help contain the severity of respiratory and other diseases aggravated or caused by air pollution. In addition, the reduction of GHG emissions is expected to mitigate climate effects that create more vulnerable conditions for human health.

The project meets the following applicable environmental laws and regulations:

Neither the State of Texas nor local level governments have specific environmental regulations regarding the siting of wind energy projects. However, the Texas Parks and Wildlife Department (TPWD) will review a wind energy project based on its wildlife protection guidelines, as requested. Consistent with best management practices in the industry, the sponsor voluntarily conducted environmental studies, including avian and wildlife studies which are described in environmental impact sections below.

2.b Human Health and Environmental Impacts

Health statistics:

Epidemiological research has shown that both, chronic and acute exposure to harmful emissions associated with fossil-fuel based energy production, can lead to serious respiratory problems. It is estimated that, at very least, prolonged exposure to excessive levels of pollutants can deteriorate the respiratory capacity of humans and greatly contribute to the increase incidence of cardiopulmonary diseases such as asthma, heart ailments, and lung cancer. The following table lists some of the human health and environmental impacts associated with pollutant emissions.

Emmision	Problems	Impacts
SO ₂ , NO _x	Fine Particulates	- Regional haze - Lung and heart diseases
NO _x , COV	Ozone Smog	- Respiratory diseases - Permanent lung damage
CO ₂	Climate Change	- Increase in global temperature - Extreme weather
Mercury, Selenium	Air Toxics	- Damage to central nervous system - Contaminated lakes
SO ₂ , NO _x	Acid Rain	- Degradation of soil, foliage and water bodies
Nuclear Waste	Radioactive Waste	- Health risks - Dangerous to store, transport

Table 2. Health and Environmental Impacts Associated with pollutants.

In summary, by substituting the demands of electrical power generation from conventional fossil fuel sources with renewable resources, the Project could help improve air quality and the general environmental conditions affecting the health of residents, not just in the specific project location, but within the region and beyond.

Direct and Indirect Benefits:

Wind power is an abundant, widely distributed energy resource that has zero fuel cost, zero emissions and zero water use. The Project will provide a clean energy alternative to the area by constructing a wind farm, displacing emissions associated with conventional electricity generation to meet existing or future demands. The electricity provider for the region and project off-taker is working toward increasing the share of energy derived from renewable sources; the energy added by the project would further reduce the carbon intensity of the fuel mix, increase the diversity of renewable sources, and lessen the strain on production and transmission as demand grows during peak and non-peak hours.

In the State of Texas, greenhouse gas emissions are significantly associated with the combustion of fossil fuels in energy production. Energy-related carbon dioxide (CO₂) emissions,

resulting from the combustion of coal and natural gas, for 2010 were measured at a total of 206 million metric tons of CO₂eq emissions.

Environmental Impacts:

The environmental impact resulting from the project will be positive overall; since the project will aid in the reduction of harmful atmospheric emissions generated by fossil fuel fired electrical plants. Since wind energy produces negligible carbon dioxide emissions, when compared to conventional fossil fuel derived methods, and since wind-generated electricity is accomplished without the effects of NO_x and SO_x emissions during its production, the project can help reduce the associated harmful effects of these emissions by providing clean power.

Climate Change

When power plants burn fossil fuels to generate energy, emitted CO₂ accumulates in the atmosphere, trapping increasing amounts of heat on the earth. Consequently, this contributes to potential climate warming conditions. In computer-based models, rising concentrations of GHGs produce an increase in the average surface temperature of the earth over time. Rising temperatures may, in turn, produce changes in precipitation patterns, storm severity, and sea level commonly referred to as “climate change.” The proposed project is expected to displace the amount of CO₂ emissions.

Environmental Assessment

In Texas, there are no state guidelines for wind turbine siting. Counties can discourage but cannot prohibit power plant development. As described previously, TPWD will review a wind energy project against a set of guidelines for wildlife protection, if asked. TPWD Code §12.0011 states that TPWD will review projects that impact fish and wildlife resources and make recommendations to minimize those impacts, which would include recommendations for appropriate mitigation.

The project includes a transmission line to span the International Border and Water Commission (IBWC) North Floodway Levee, which requires a license from IBWC. This component of the project qualified for a categorical exclusion and therefore, did not require the preparation of an environmental assessment. However, the sponsor consulted with U.S. Fish and Wildlife Service in connection with the application for and issuance of the license by IBWC.

The following is a list of analysis and results related to environmental considerations developed for the project:

1. The sponsor developed a stormwater pollution prevention plan to identify Best Management Practices (BMP) to meet the conditions and terms of the TCEQ

General Permit to Discharge Wastes (TXR 150000). The plan identifies potential sources of pollutants which may be reasonably expected to affect the storm water discharges associated with construction activity. The plan describes the actions which shall be used to reduce pollutants in storm water discharges.

2. Consultants hired by the sponsor conducted a project site assessment to identify possible threatened or endangered species within the Project limits. The assessment included a visual survey of the site and a review of the Texas Parks and Wildlife Department (TPWD) Natural Diversity Database (05-04-2010). No evidence of federally listed endangered species within the project limits was noted.
3. The Aplomado Falcon has been generally known to be found in the area. Therefore, the sponsor conducted an avian survey and risk assessment where no federally listed species were observed.
4. There are no known ocelot or jaguarondi reports within the Project area. Use of the area by the ocelot or jaguarondi is anticipated to be transient at best. In coordination with USFWS Ecological Services – the sponsor determined potential cat corridors within the Project area which will be avoided.
5. A Waters of the U.S. delineation study identified several water features that are considered isolated and are not expected to be under the jurisdiction of the U.S. Army Corps of Engineers. No further action is required at this time.
6. TPWD offered recommendations on rare and protected species; as well as for construction techniques and applicable best management practices to be considered during the project:
 - a. The transmission line route should be surveyed for rare plants. Onsite investigation of the Project area determined that a significant majority of the area had been cleared of native vegetation and converted to farmland.
 - b. If during construction rare species are found, precautions should be taken to minimize and compensate for impacts to them. Specifically, the Avian and Bat Protection Plan provides instruction for any incidents that may occur with this wildlife.
 - c. In order to minimize potential negative avian impacts, TPWD recommended the transmission line should utilize avian safety features described in “Suggested Practices for Avian Protection on Power Lines” issued by the Avian Power Line Interaction Committee (APLIC),

which is sponsored by the Edison Electric Institute and the California Energy Commission, which have been considered in the design of the project.

- d. During the installation of poles, BMP for controlling erosion and sedimentation from disturbed areas should be used.
7. For the transmission line component of the project, an archaeological survey was conducted and finished in May 2010. Impacts to cultural resources are anticipated to be low.
8. A hydraulic analysis was conducted and finished in September 2010 to analyze water surface impacts and scour potential that may occur from the Project. Positioning turbines upland away from the floodway and Arroyo Colorado will also help to reduce the potential flooding hazard.
9. The project sponsor initiated a "Phase I Environmental Site Assessment for Identifying Recognized Environmental Conditions" in December 2011, which is expected to be completed by the end of February. The Phase I Environmental Site Assessment evaluates the property for releases of hazardous substances.

Mitigation Measures:

Some temporary impacts will be produced during the construction of the Project including noise levels, vibration, visual intrusion, and dust. The impacts will be managed according to best construction practices. Additionally, the following specific mitigation tactics will be employed to reduce any anticipated environmental effects:

1. According to the Texas Commission on Environmental Quality (TCEQ) Texas Pollutant Discharge Elimination System (TPDES) requirements, the sponsor developed a Storm Water Pollution Prevention Plan which includes best management practices for the construction of the Project as well as survey of existing vegetation, soil conditions, location of potential pollution sources and the findings of endangered species within the site.
2. The sponsor has developed the "Los Vientos Avian and Bat Protection Plan." This plan is intended to comply with the requirements of wildlife protection laws, manage wildlife interactions with wind turbines and associated facilities¹⁴, reduce regulatory risk and conserve wildlife resources. A Post Construction Mortality Monitoring Plan is also being developed. It includes avian and bat mortality monitoring and will be

¹⁴ Avian Power Line Interaction Committee. *Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006*. Edison Electric Institute and the California Energy Commission.

completed for the first two years of operations, starting at the beginning of a season following commercial operations. An evaluation of an additional year of monitoring will be done following the first two years of surveys.

3. The sponsor is preparing a separate assessment of the potential presence of the Aplomado falcon, expected impact, if any, of the Project on the falcon's habitat.

Transboundary impacts:

No negative transboundary impacts are anticipated as a result of the development of the wind energy project. On the contrary, a beneficial effect is anticipated on the air quality due to the decreased demand on fossil fuel fired electrical plants. The project could benefit the communities contiguous to the project area, as the potential reduction in pollutants made possible by the project helps to improve the air quality. Furthermore, the Project will aid in addressing and solving the larger environmental concerns related to greenhouse gases and global warming targeted by international agendas.

IBWC has reviewed the project in its process of granting a license to the project (Number LSF/G-1789) to install the electrical power transmission line in the Willacy County.

Formal Environmental Authorization:

The following formal authorizations have been obtained for the project:

1. Texas Commission on Environmental Quality. Permit TXR150000, General Permit to Discharge Wastes. Issued on February 15th, 2008.
2. Department of the Army. Corps of Engineers. Approved determination number SWG-2010-00267.
3. International Boundary and Water Commission. License to Construct Electrical Power Transmission Line Phase IB number LSF/G-1789.
4. U.S. Fish and Wildlife Service (USFWS). 21410-2010-10292.
5. Federal Aviation Administration. Determination of No Hazard to Air Navigation¹⁵

There are no formal environmental authorizations pending.

Assessment of Project Benefits: Project Results Matrix. Factor 3

Measurement of Project Results:

1. **Reduce demands on traditional fossil-fuel based energy generation**

Objectives and Indicators

Capacity RE installed/generated
 (Target = 200.1 MW)
 (Target = 763,377 MWh – year one)

¹⁵ Determinations granted on 12/02/2011.

2. Reduce harmful emissions

Displacement of CO₂
(Target ≥ 466,488 metric tons/year)
(Baseline¹⁶: 252 million metric tons)

Displacement of SO₂
(Target ≥ 797 metric tons/year)
(Baseline: 429,892 metric tons)

Displacement of NO_x
(Target ≥ 381 metric tons/year)
(Baseline: 205,601 metric tons)

Pending Issues:

None.

Criterion Summary:

The Project addresses human health and environmental issues.

¹⁶ Baseline reflects the emissions related to the coal generated power in 2010 as reported by the U.S. Energy Information Administration for Texas. Emission factors for carbon dioxide, sulfur oxides, and nitrogen oxides were obtained from the same source.

3. Technical Feasibility

3.a Technical Aspects

Project Development Criteria

Design Criteria:

The Los Vientos 1A wind farm project plans to install 87 wind turbines with a nominal capacity of 2.3MW on a 98 meter hub height tower each, to achieve 200.1 MW of installed capacity. The electricity will be purchased by CPS Energy and delivered from the wind farm through American Electric Power Texas' ("AEP") transmission lines at 138/345kV Rio Hondo Substation. The turbines deliver power at 690 V, which is then stepped up to 34.5 kV, before transmitting the electricity generated to the farm's substation.

The wind farm has been designed to maximize the use of available wind resources. The design conforms to current national and international standards and applicable laws. As described in the Avian and Bat Protection Plan, the sponsor has also committed to consider best practices related to design criteria provided the Avian Power Line Interaction Committee - *Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006*.

Project Components:

The main function of a wind farm is to produce electricity through the use of wind which will be made possible with the construction of necessary infrastructure to help supply and transfer the power produced to the existing grid.



Figure 9. Los Vientos 1A and 1B Wind Farm Layout

Turbines

The project includes 87 Wind Turbines, each one with the next characteristics:

- 2.3MW nominal power
- 108m rotor diameter
- 98m hub height
- 3-4 m/sec wind speed self-starting
- 25 m/sec automatic shut down

Monitoring and Control System

The project will include the installation of a SCADA system for the turbine array, which will be used for supervision, data acquisition, control, and reporting of wind farm performance. The system will allow for on-line supervision and control accessibility via internet; storage of historical data; local storage in case of communication interruption; remote fast alarm response; monitoring integrated with the turbine controller; power curve calculations; and voltage, frequency or MW controls. The system will be interconnected through a fiber optic network from the turbines to the server panel.

Foundations

The project site is predominantly farmland; the topsoil thickness at the site is approximately 1 to 3 feet. Topsoil removed during site stripping will be graded into existing site topography and may be used in grading non-structural fill such as fields, or service areas in which compressibility of the material does not have an impact on structures. Compaction of in situ soils intended for support of the foundation base is not required at turbine locations where clayey soils are present in the excavation base.

The results of the geotechnical investigation indicated that the site is suitable for a spread footing foundation system. Some of the turbine locations will require shallow soil remediation generally limited to the upper 15 feet.

Roads

Two traffic conditions were evaluated and analyzed for use of the road: Conditions during construction of the project and long term maintenance traffic consisting of light duty trucks during operation. Existing roads will be refurbished to support the use of heavy equipment. New roads will be also constructed in the project area. Gravel access roads for the facilities will be approximately 16 feet wide. Compacted shoulders for the roads (approximately 10 feet wide) may be included for crane travel. Construction access roads will follow the existing terrain as much as possible to help limit grading and land disturbance.

Medium Voltage Grid

Each wind turbine includes a transformer whose function is to raise the voltage of electricity generated in order to reduce losses in the conductors that transmit it to the Wind Farm's substation. The power generated at 690V will be stepped up to the 34.5 kV for collection within the park.

138/34.5 kV Transformer Substation

A substation will be constructed within the park which will step up the voltage to 138 kV. The general layout of the plant facility has been planned so that incoming lines will be on medium voltage at 34.5 kV and outgoing lines will be 138 kV aerial cables.

High Voltage Transmission Line

The electricity produced by the wind farm will be delivered through a 138 kV transmission line to the interconnection point located at the Rio Hondo substation which is part of the Rio Grande Valley area also known as the East Valley area load.

Los Vientos 1A substation (The Palm) interconnects to the Rio Hondo substation via an 8.5 mile (13.6 km) line.

Appropriate Technology Assessment of Alternatives:

For this project, different types of technologies available in the wind turbine market were evaluated. The evaluation of the technology considered the site requirements, wind resource, projected total costs of energy and performance opportunities. Current technologies allow for more efficient and reliable power generation, as well as more production at average wind speeds; this is partly due to an increase in size and improved blade designs.

Resource Assessment

Six 60 meter meteorological towers were installed to study the resources available in the project area. Data have been collected, including wind speed, wind direction, and ambient temperature, with the purpose of reviewing and modeling wind resources available. With more than 3 years of data plus 7 months of Sodar¹⁷ data, the resource assessment from the project area supports the installation and adequate performance of the project.

Prior to the Project being constructed, the technology selections will be vetted by an Independent Engineer for accuracy and related risks and the estimated energy production will be confirmed by an independent wind resource consultant.

¹⁷ SODAR (Sonic Detection and Ranging) http://www.sodar.com/about_sodar.htm developed 7 months of data acquisition for the project.

Property and Right of Way Requirements

An analysis was developed in order to comply with federal, state and local property and right of ways regulations for wind farms and construction. A list of applicable regulations is shown below:

Federal Permits:

- International Boundary and Water Commission (IBWC)
- Federal Aviation Administration (FAA)

State Permits:

- Texas Department of Transportation (TXDOT)
- Texas Commission on Environmental Quality (TCEQ)
- Public Utility Commission of Texas (due December 2012)

Local Permits:

- Construction Permits

A Real Property Rights Limitation document was also developed with land proprietaries. The Project itself will be located on a 12,800 acres of property. Sponsor has secured all the parcels under separate lease agreements with the various landholders (11 companies, families and particulars).¹⁸ The property owner does maintain the ability to continue agriculture or other beneficial use of the property not in conflict with wind site operations.

Project Tasks and Timelines

Project Timeline

The Project is well-advanced in its development and contracting. The anticipated Commercial Operation Date (“COD”) is December 2012. Table 1 presents a non-exhaustive list of the status of key tasks, permits, and contracts:

Key Milestones	Status
Balance of Plant Initiates	Contracted: Dec 2011
Turbine Supply Agreement	Signed: Sept 2011
Service Maintenance Agreement	Signed: Sept 2011
PPA with CPS Energy	Signed: July 2011
Interconnection Agreement with AEP	Signed: March 2011
Determination of No Hazard to Air Navigation by FAA	Received Final

¹⁸ Los Vientos financing presentation (Slide 19)

Leasing of land	100% Executed
Environmental studies/permits	Completed
Independent engineer	Contracted: Jan 2012
Scheduled Trial Operation Date	September 2012
Commercial Operation Date	December 2012

3.d4 Tcancement and Operations

ProjectTcancement

Resources: The projectTmanagement is being developed by Duke Energy Corporation through Duke Energy Renewables. The projectT will be owned by a subsidiary of Duke Energy Corporation created for the project. Duke Energy Corporation is one of the largest electric power holding companies in the United States.

Operation and Maintenance

Organization: The ProjectTwill be directly operated by an on-site projectTteam hired by DER. Duke will continue to provide expertise, advisory, supervision and control during the life of the Project.

Operation Plan:

The ProjectTwill have an O&Mservice agreement signed with Duke for the long-term operation and maintenance of the ProjectTincluding management, coordination, and supervision of operation tasks; coordination of scheduled maintenance tasks with the vendor; compliance with guaranteed availability; and the development of monthly operation reports.

The ProjectThas also signed a 5-year Service Maintenance Agreement with the turbine supplier to provide maintenance of the turbines and includes scheduled maintenance and warranties for the wind turbines and their components, as well as unscheduled maintenance tasks.¹⁹

Permits, licenses, and other regulatory requirements:

An analysis was developed in order to comply with federal, state and local permits, licenses and other regulatory requirements for wind farmsTand construction. A list of applicable permits related to projectTimplementation is shown below:

Federal Permits and Consultations:

- FAA. Granted²⁰
- International Boundary and Water Commission. Granted LSF/G-1789

¹⁹ LV1A SMA Document specifies all the Service and Maintenance Agreements with the supplier

²⁰ Determinations granted on 12/02/2011

State Permits:

- Texas Department of Transportation.
- Public Utility Commission of Texas (due December 2012)

Local Permits:

- Willacy and Cameron Counties building permits

Reviewing Agencies:

- U.S. Army Corps of Engineers (USACE).
- U.S. Fish and Wildlife Service (USFWS)
- FAA
- Federal Communication Commission
- IBWC
- TCEQ
- TPWD
- TXDOT
- Willacy and Cameron County building permits
- Project Certification Review – BECC/NADB

Pending Issues:

None.

Criterion Summary:

The Project design and equipment complies with all applicable regulations and meets the technical requirements of the certification criteria.

4. Financial Feasibility

4.a Proof of Financial Feasibility

Financial Conditions

Information submitted: CPS Energy Financial Statements and Project's cash flow forecasts.

Financial Analysis Results: The Project's expected revenue from the sale of electricity, based on the credit risk analysis performed by NADB, will be sufficient to cover: a) scheduled O&M expenses, b) funding of any Debt Service Reserve, c) payment of senior loans debt service and, d) retain cash for Debt Service Coverage Ratio covenants requirements, if necessary.

Item: The scope of the Project is to design, build and operate a 200.1 MW wind farm. The electricity generated will be bought by CPS Energy through a Power Purchase Agreement with Los Vientos Windpower 1A LLC.

NADB Loan Amount: Up to \$110.0 million

Dedicated Revenue Source

Source of Income: Revenues from the sale of electricity to CPS Energy through a Power Purchase Agreement, including the monetization of tax incentives associated with the generation of renewable energy.

4.b Legal Considerations

Project Management: Los Vientos Windpower 1A LLC will be the Borrower for the Project. Los Vientos Windpower 1A LLC, has the legal authority to contract loan obligations and will implement and operate the Project through a contract signed with a third party with ample experience and expertise in these types of projects.

Pending Issues:

None.

Criterion Summary:

The Project meets all applicable financial feasibility criteria.

5. Public Participation

5.a Private-sector Environmental Infrastructure Project

Project Classification:

The project is classified as a private sector environmental infrastructure project with exclusive impact. This category includes projects that intend to provide an environmental service. The impact of these projects is generally exclusive to the facilities, processes or services of the Sponsor, although an indirect benefit for the community may exist. These projects are not expected to require increased revenue generation to be supported by the community-at-large for project implementation or operation and maintenance.

Public access to project information:

For this project category, the *General Public Comment Period* shall apply as a minimum requirement to satisfy this criterion. BECC will release the Project Certification Document (PCD) for a 30-day public comment period beginning February 17, 2012.

Additional outreach activities:

Although a broad public participation effort was not required for the Project, various opportunities to provide formal public access to Project information occurred during the development of the Project including the following:

- Governing body meetings in 2010 and 2011 to discuss issues such as access roads and tax abatement agreements. Such meetings were conducted with the Willacy County Commissioners Court.
- Duke Energy met with the following local organizations:
 - Willacy and Cameron Counties
 - Willacy County Drainage District
 - Lyford and Rio Hondo School Districts
 - USFWS
 - IBWC, and
 - Army Corp of Engineers
- Duke Energy is currently working with Willacy County to set up a fund to bring a Boys and Girls Club to the county. Also, the taxing agreements Los Vientos project worked out with the State of Texas and school districts will allow for the school districts to retain more dollars per student thus providing greater benefits to the schools and students.
- A local job fair was conducted in Raymondville, Willacy County in January 2012. Up to 100 local workers will receive employment through the construction of the Los Vientos 1A and 1B projects. Many local suppliers are providing materials, trucking, steel, concrete, aggregate, hotels, motels, campgrounds, restaurants and other services further boosting the local economy. Once the

project goes into commercial operations community tours and sponsorships will be held to broaden the understanding of the zero emission project.

The Project received attention in local newspaper publications and local radio, such as the Valley Morning Star, The Brownsville Herald, and several internet articles, including CPS's website. Overall the content of the available media search was positive with the only statement of concern reported from a local environmental organization that considered wind turbines as posing "a threat to the environment and migratory birds." The statement explicitly noted that "the environmental group does not directly oppose the 30,000-acre wind farm."

Based on this publicly available documentation along with activities conducted for the project in the local community and County Commissioners Court, information about the project has been accessible to the community and interested stakeholders in the project area.

Pending Issues:

30-day public comment period.

Criterion Summary:

The Project meets the Public Participation requirements for certification of a private sector environmental infrastructure project.

6. Sustainable Development

6.a Human and Institutional Capacity Building

Project Operation and Maintenance:

Duke Energy Corporation is one of the largest electric power holding companies in the United States. The company serves approximately 4 million customers located in five states in the Southeast and Midwest, representing a population of approximately 12 million. Duke Energy Corporation entered the wind sector in 2007 through Duke Energy Renewables with the purchase of more than 1,000 megawatts of wind assets under development in the Western and Southwestern United States. In 2008, Duke acquired an additional 283 MW. Since 2007, Duke Energy Renewables (DER) has continued to invest in its wind business and it currently owns or has partial ownership in 15 wind farms scattered across the US. DER's operating portfolio of wind farms includes four facilities in Wyoming, three in Texas, one in Colorado.

Human and Institutional Capacity Building :

This vast experience in wind energy project development and operation supports the success of the current project proposal.

The sponsor estimates that during the construction of the farm, it is expected that 150 to 250 full-time jobs will be created, nearly 100 of those hired locally for 12 months of construction. It is estimated that 25 to 35 permanent jobs will be created through the implementation of Los Vientos 1A and 1B.

6.b Conformance to applicable Local, State, and Regional Regulations and Conservation and Development Plans

Local and Regional Plans addressed by the project:

The project has received approval of a tax-abatement period by the Willacy County Commissioners Court, reflecting the project's compatibility with local plans for land use and economic development opportunities.

The project also supports CPS Energy's strategy known as Vision 2020, which includes actions to address carbon constraints and the environment. These actions include a focus on promoting energy efficiency, clean energy production and better managing water resources for energy generation.

Laws and Regulations addressed by the project:

As described above, neither the State of Texas nor the local governing body require environmental authorizations for the project. Important studies and mitigation efforts associated with wildlife protection as well as other on-site and operational requirements have been completed and all environmental permits have been received. The project supports the Texas Renewable Portfolio Standard (RPS).

Impacts to neighboring communities in the U.S. and/or Mexico:

The project will benefit neighboring communities in the U.S. and Mexico by improving regional air quality and avoiding GHG emissions which cause broader effects to the region and beyond.

6.c Natural Resource Conservation

In 2002, CPS joined the Department of Energy's Climate Challenge program and began voluntarily reporting greenhouse gas reductions. CPS has a diverse mix of fuels and emission-free power resources. Nuclear and wind power account for about 39 percent of the utilities energy-generating capacity.

The project will displace the atmospheric emissions generated by fossil fuel fired electrical plants since wind electricity is generated without the emissions of CO₂, NO_x, and SO_x. In addition, wind energy requires no water for energy production, while fossil fuel-fired generation is generally more water intensive; thus, supporting the preservation of scarce water resources.

6.d Community Development

In an August 2011 article, *Duke Energy Announces Wind Farm for Willacy County in Texas*, Willacy County Precinct 1 Commissioner Eliberto "Beto" Guerra is quoted as saying, "the wind farm is a "win-win" for the county," commenting that taxes from the wind farm will benefit local school districts and create jobs. Demonstrating the sponsor's efforts to implement this, a local job fair was conducted in Raymondville, Willacy County in January 2012.

Duke Energy is currently working with Willacy County to set up a fund to bring a Boys and Girls Club to the county. Also, the taxing agreements. Los Vientos project worked out with the State of Texas and school districts will allow for the school districts to retain more dollars per student thus providing greater benefits to the schools and students. Many local suppliers are providing materials, trucking, steel, concrete, aggregate, hotels, motels, campgrounds, restaurants and other services further boosting the local economy. Once the project goes into commercial operations community tours and sponsorships will be held to broaden the understanding of the zero emission project.

Additionally, the landowners leasing their land to the Project will maintain the beneficial use of much of the property and receive additional benefits beyond the lease price including a revenue share related to the generation of power.

Pending Issues:

None.

Criterion Summary:

The Project meets sustainable development principles for certification.

Available Project Documentation:

- *Consultation Correspondence: TX Parks and Wildlife Department*
- *Consultation Correspondence: US Army Corp of Engineers*
- *Consultation Correspondence: US Fish and Wildlife Service*
- *Texas Commission on Environmental Quality. Permit TXR150000, General Permit to Discharge Wastes*
- *FAA Determinations - Phase 1A*
- *Los Vientos Phase 1A and 1B Storm Water Pollution Prevention Plan*
- *US IBWC Crossing License*