



2018 GREEN BOND IMPACT REPORT



CONTENT >>

Message from Management	1
About NADB	2
Board of directors	
Management	
Capitalization and finances	
Our impact	
NADB Green Bond	5
Use of proceeds	
Project evaluation and selection	
Management of proceeds	
Total portfolio impact	
Case studies	9
Puerto Libertad solar park	
El Mezquite wind energy project	
EDPR wind project	
Appendix	16
References	17

MESSAGE FROM MANAGEMENT >>

The North American Development Bank has a successful 25-year track record helping public and private sponsors develop, finance and implement environmental infrastructure projects that help preserve, protect and enhance the environment and well-being of the people along the U.S.-Mexico border region.

Since 1994, NADB has financed 250 projects that are helping more than 17 million people in the region achieve a better quality of life in a variety of ways, whether it's connecting homes to basic utility services, providing for the safe disposal of waste, preventing raw sewage discharges or recurrent flooding from storm water, or reducing air pollution through paved roads, less polluting buses or cleaner renewable energy sources.

NADB has leveraged its capital contributions from the governments of Mexico and the United States, as well as its very strong credit quality, to issue debt in international markets to support our lending operations. The issuance of our first Green Bond in 2018 represents a logical step in our evolution and our motivation to be at the forefront of innovation.

This 2018 Green Bond Impact Report is presented a year after the issuance of the bond and after full allocation of its proceeds to fund six renewable wind and solar energy projects in Mexico and the United States. The report adheres to the Green Bond Principles and to our own standards and commitments for transparency in the approval and financing of projects.

We are proud to present the results of the first green bond issued by the North American Development Bank.

ABOUT NADB

The North American Development Bank (NADB) is a binational financial institution established and capitalized by the Governments of the United States and Mexico for the purpose of financing infrastructure projects that preserve, protect or enhance the environment in order to advance the well-being of border residents, as well as providing technical and other assistance to support the development of such projects.

NADB was established in San Antonio, Texas, and began operations on November 10, 1994, with the initial capital subscriptions of the U.S. and Mexican governments. The scope of the Bank’s mandate—including the geographic jurisdiction and infrastructure sectors in which it may operate—as well as its functions and limitations, are defined in an agreement between the two governments ([the Charter](#)).

Projects that qualify as eligible infrastructure are those that will prevent, control or reduce environmental pollutants, improve the drinking water supply or protect flora and fauna, provided that such projects also improve human health, promote sustainable development or contribute to a higher quality of life. In addition, eligible projects must be located within 100 kilometers (about 62 miles) north of the U.S.-Mexico international boundary in the U.S. states of Texas, New Mexico, Arizona and California and within 300 kilometers (about 186 miles) south of the border in the Mexican states of Tamaulipas, Nuevo Leon, Coahuila, Chihuahua, Sonora and Baja California.

Eligible Sectors

» WATER

Potable water supply, treatment and distribution; wastewater collection, treatment and reuse; water conservation; storm drainage and flood control

» WASTE MANAGEMENT

Sanitary landfills, dumpsite closure, collection and disposal equipment, recycling and waste reduction, hazardous waste treatment & disposal facilities, industrial site remediation

» AIR QUALITY

Street paving and other roadway improvements; public transportation; ports of entry, reduction of industrial emissions; methane capture

» CLEAN AND EFFICIENT ENERGY

Solar, wind, hydroelectric, geothermal, biogas & biofuels; equipment replacement, building retrofits

» BASIC URBAN INFRASTRUCTURE

Projects that consist of a mix of works from various sectors, such as street paving, installation of water and sewer lines, storm drainage and public lighting



BOARD OF DIRECTORS

NADB is governed by a ten-member Board of Directors with equal representation from each member country. The chairmanship alternates between the United States and Mexico each year. All powers of NADB are vested in the Board of Directors, which determines policy within the framework of the Charter and approves all programs and project proposals of the Bank.



MEXICO

- » Secretary of Finance and Public Credit (SHCP)
- » Secretary of Foreign Relations (SRE)
- » Secretary of Environment and Natural Resources (SEMARNAT)
- » Mexican border state representative
- » Mexican border resident representative

UNITED STATES

- » Secretary of the Treasury
- » Secretary of State
- » Administrator of the Environmental Protection Agency (EPA)
- » U.S. border state representative
- » U.S. border resident representative

MANAGEMENT TEAM

The Managing Director, Deputy Managing Director and the Chief Environmental Officer are appointed by the Board. The Managing Director, as Chief Executive Officer and legal representative of NADB, reports to the Board and is responsible for carrying out its directives, as well as for the organization and day-to-day operations of the Bank. The Deputy Managing Director serves as the Bank’s Chief Operating Officer and supports the Managing Director in fulfilling his/her duties. The Chief Executive Environmental Officer is responsible for verifying the environmental integrity of all operations of the Bank.



Alex Hinojosa
Managing Director



Calixto Mateos-Hanel
Deputy Managing Director



Salvador López-Córdova
Chief Environmental Officer

CAPITALIZATION AND FINANCES

NADB was initially capitalized in equal parts by the governments of the United States and Mexico for a total of US\$3 billion, consisting of US\$450 million in paid-in capital and US\$2.55 billion in callable capital. After the funding by the governments of two domestic programs with 10% of the original funding, US\$405 million of paid-in capital was received, with corresponding callable capital of US\$2.30 billion.¹

In 2016, both governments submitted letters of subscription for additional shares equivalent to US\$3 billion, including additional US\$450 million in paid-in capital and US\$2.55 billion of callable capital. As of today, Mexico has made a first payment toward the paid-in capital of US\$10 million.

Partner Contributions

Country	Paid-in Capital (USD Million)	Callable Capital (USD Million)	Total (USD Million)
Mexico	\$212.50	\$1,204.17	\$1,416.67
United States	202.50	1,147.50	1,350.00
Total	\$415.00	\$2,351.67	\$2,766.67

NADB leverages its funds by issuing debt in international capital markets or with other financial institutions for the purpose of financing its lending operations or refinancing existing borrowings. Its financial strength is based on its strong liquidity policy, prudent risk management and rigorous lending and oversight processes. NADB current ratings are AA/F1+ STABLE from Fitch Ratings and AA1/PRIME-1 STABLE from Moody's Investors Service. Up to now, US\$1 from NADB leverages US\$21 dollars.

At the end of Fiscal Year 2018, NADB has leveraged its paid-in capital of \$415 million into investments totaling US\$8.65 billion in sustainable infrastructure. NADB has also managed \$660.2 million in EPA grants, bringing the total number of projects funded to 250 and total investment to \$9.8 billion.



¹ Paid-in capital consists of cash funds contributed to NADB by the two governments. Callable capital is composed of funds that are pledged to be provided to NADB from the two countries only if required to meet the bank's obligations on borrowings of funds for inclusion in its capital resources as specified in the Charter.

NADB GREEN BOND

In June 2018, the North American Development Bank (NADB) issued its first Green Bond in the amount of CHF 125 million (equivalent to USD 126.4 million). This document presents the use and environmental benefits of this bond proceeds.

The proceeds of the Green Bond are used and managed in accordance with the Bank's [Green Bond Framework](#), which is consistent with the rules established by the International Capital Market Association (ICMA) in the [Green Bond Principles](#) (GBP). The NADB follows the GBP and provides transparency, accuracy and integrity of information that is disclosed and reported to stakeholders. The Green Bond Framework was reviewed by an independent third party, who issued a positive [Second-party opinion](#).

USE OF PROCEEDS

The net proceeds from the issuance of this bond were used to finance and refinance eligible projects. To date, the totality of the proceeds of the Green Bond have been allocated. This includes the reimbursement to the Bank of USD \$53.06 million for the EDPR wind energy project in Mexico funded within 24 months prior to the bond issuance, as well as USD \$73.36 million in five new wind and solar projects in Mexico and the U.S. The projects selected for the Green Bond support NADB's mission to finance environmental infrastructure projects that help preserve, protect, and enhance the environment of the U.S.-Mexico border region to advance the well-being of its residents.

PROJECT EVALUATION AND SELECTION

NADB finances projects that will prevent, control or reduce environmental pollutants, improve the drinking water supply or protect flora and fauna, so as to improve health, promote sustainable development or contribute to a higher quality of life.

NADB's Green Bond Framework identifies eligible projects that may be financed with the proceeds of green bonds. These projects fall into one of four sectors: sustainable water and wastewater management, pollution prevention and control, renewable energy, and energy efficiency.

Sustainable Water and Wastewater Management

- Water supply, treatment and distribution
- Wastewater collection, treatment and reuse
- Water conservation
- Storm drainage & flood control

Energy Efficiency

- Municipal and commercial building upgrades
- Retrofitting
- Efficiency upgrades

Pollution Prevention and Control

- Industrial emission reduction
- Waste treatment & disposal
- Site remediation

Renewable Energy

- Wind
- Utility-scale solar
- Distributed solar

All projects selected for financing by NADB must go through a certification process based on technical, financial and environmental criteria, as well as public access to information, and must be approved by the Bank's Board of Directors. As part of the environmental criteria, a project must demonstrate not only compliance with applicable environmental regulations and clearance processes but must also demonstrate a positive impact on the environment. The Green Bond was allocated entirely to renewable energy that avoid emissions of greenhouse gases and criteria pollutants. The table below summarizes the use of proceeds to date.

MANAGEMENT OF PROCEEDS

As of December 31, 2018, The Green Bond has been fully disbursed as shown in the following chart.

Project	Type	State	Country	Type of Financing	Green Bond Share of Project Costs (%)	Green Bond Proceeds Disbursed (USD Million)
EDPR	Wind	Coahuila	Mexico	Refinance	15.13	\$ 53.06
Puerto Libertad	Solar	Sonora	Mexico	Finance	8.52	32.99
El Mezquite	Wind	Nuevo Leon	Mexico	Finance	5.53	17.45
Santa María	Solar	Chihuahua	Mexico	Finance	6.44	9.98
Orejana	Solar	Sonora	Mexico	Finance	6.11	8.49
SEPV	Solar	California	USA	Finance	26.01	4.42
TOTAL					9.26	\$ 126.42

TOTAL PORTFOLIO IMPACT

NADB estimates the anticipated impacts of the projects to be financed before certification and approval. Furthermore, NADB routinely verifies project impact, particularly one year after the initiation of operation. The anticipated benefit of the projects partly financed by the proceeds of the Green Bond are summarized below. Please observe the Certified Documents in the References section for further description of the projects.

Project	Green Bond Share of Project Costs	Expected Impacts upon completion ²						
		Installed Capacity	Annual renewable energy generation	Annual Equivalent Household Energy Use ³	Annual Emissions Avoided			
Units ⁴	%	MW	GWh/year	households/year	Greenhouse Gases CO ₂ e	NO _x	SO ₂	PM ₁₀
					(tons/year)			
EDPR ⁵	15.13	199.5	699	89,791	337,680	2,312	1,696	160
Puerto Libertad	8.52	317.5	961.55	130,575	441,435	1,325	3,492	207
El Mezquite	5.53	250	890	114,326	343,777	1,488	711	17
Santa María	6.44	148	393.6	55,021	169,033	577	661	38
Orejana	6.11	125	353.5	48,004	162,287	487	1,284	76
SEPV	26.01	5	15.1	485	3,249	5	-	-
TOTAL	9.26	1,118	3,312	438,201	1,457,461	6,194	7,844	498

² Expected impacts of entire project. Greenhouse gases and criteria pollutants calculated with 2017 state emission factors and expected generation at year of project certification. Only EDPR has been in operation for more than a year and expected impacts are based on actual energy produced. See appendix and Certification Documents in references

³ Electricity consumption of electricity per capita in 2017: SIE for Mexico establishes 2,103.995 kWh and EIA for the USA establishes: 10,521.251 kWh. See appendix for average household size per state. See references for sources.

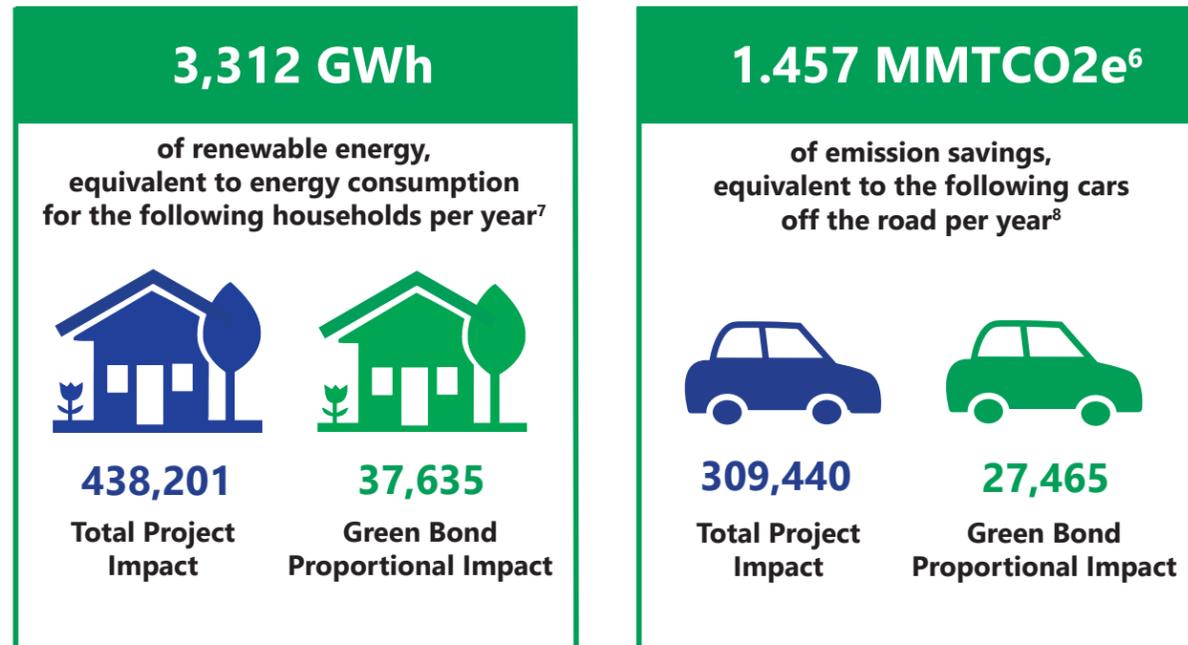
⁴ MW = Megawatts; GWh = gigawatt-hours; CO₂e = carbon dioxide equivalent; NO_x = nitrogen oxides; SO₂ = sulfur dioxide; PM₁₀ = particulate matter 10 micrometers or less in diameter.

⁵ Only project that has been in operation for more than a year. This project started operations on September 2017, thus expected impacts are based on the actual energy produced (699 GWh) on the first year of operation.

The projects financed by the NADB Green Bond have been specifically selected to minimize the associated emissions arising from energy use and to displace electricity generated from the burning of fossil fuels. moreover, these projects help to foster a cleaner energy mix in each state.

The Green Bond portfolio of renewable projects (solar parks and wind farms) account for a total installed capacity of 1,118 MW, it will avoid **1,457,461 tons of CO₂ per year**, while providing clean energy for **1,568,763 people** or **438,201 households**.

The 6 projects financed in part by the NADB generated:



⁶ Million metric tons of carbon dioxide equivalent.

⁷ Electricity consumption of electricity per capita in 2017: SIE for Mexico establishes 2,103.995 kWh and EIA for the USA establishes: 10,521.251 kWh. See appendix for average household size per state. See references for sources.

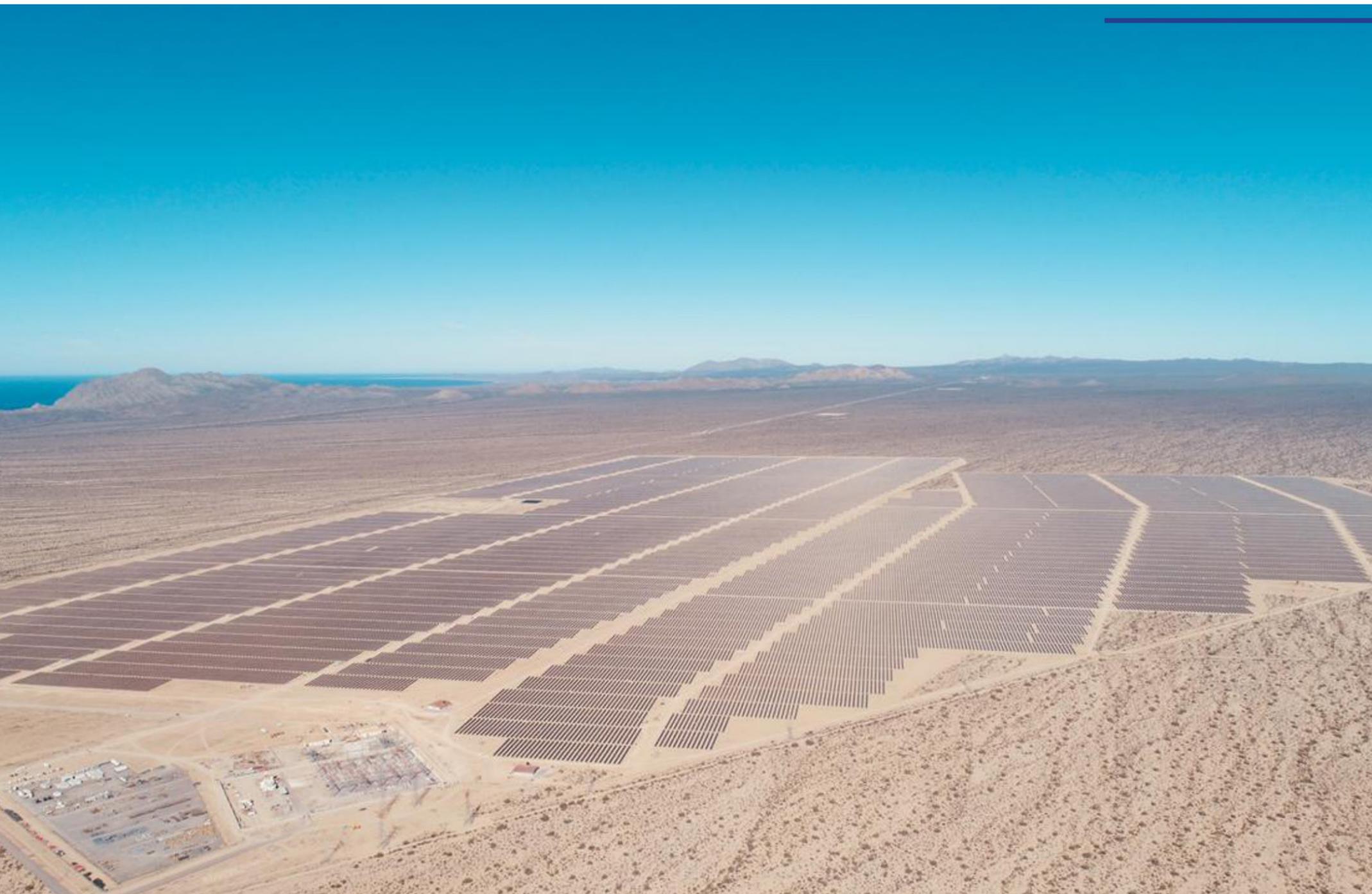
⁸ U.S. EPA Greenhouse gas equivalencies calculator. See reference section

CASE STUDIES



PUERTO LIBERTAD SOLAR PARK

PITIQUITO, SONORA



In 2015, Mexico enacted the Energy Transition Law to regulate the sustainable use of energy and obligations regarding clean energy and the reduction of pollution from the power industry, while preserving the competitiveness of the productive sectors. The law specifies that the Mexican Ministry of Energy (SENER), in coordination with the Mexican Electricity Commission (CFE) and the Mexican Energy Regulatory Commission (CRE), must increase the use of clean technologies in power generation to at least 35% by 2024. Moreover, in 2016 the Mexican National Center of Energy Control (CENACE) auctioned long-term renewable energy contracts and received 23 bids to build 2,871 MW of new renewable capacity. Component 1 of the Puerto Libertad project was selected in the auction.

The Puerto Libertad Solar Park project consists of the design, construction and operation of a solar park on approximately 1,194 hectares of rural land, providing a total installed capacity of 317.5 MW in the municipality of Pitiquito, in the Mexican state of Sonora, approximately 191 km northwest of the city of Hermosillo and 196 km southwest of the US-Mexico border. The project includes the installation of approximately 1.2 million solar modules mounted on single-axis tracker arrays and the construction of a collector substation and a switchyard.

The electricity, Clean Energy Certificates (CECs) and generation capacity produced will be purchased by CFE pursuant to three long-term power purchase agreements and by a private off-taker and CFE Calificados S.A. de C.V., pursuant to two long-term power purchases, as well as sold on the spot market.

The project is anticipated to produce 961.55 GWh of electricity during the first year of operation, equivalent to the annual energy consumption of 130,575 households. The project is expected to help prevent the following emissions: 441,435 metric tons/year of CO₂, 1,325 tons/year of NO_x, 3,492 tons/year of SO₂ and 207 tons/year of PM₁₀. The project will also promote the social and economic development of Pitiquito by generating approximately 500 temporary jobs during construction, as well as close to 50 permanent jobs during operation.

EL MEZQUITE WIND PROJECT

MINA, NUEVO LEON



In September 2016, CENACE selected “El Mezquite Wind project” as part of the second auction conducted to build 2,871 MW of new renewable capacity worth US\$4.0 billion.

El Mezquite Wind Energy Project is located in the municipality of Mina, Nuevo Leon, about 60 km northwest of the city of Monterrey. The wind project was developed by Cubico Sustainable Investments Limited and has an installed capacity of 250 MW with 100 turbines on approximately 4,893 hectares of privately-owned land.

The project is expected to produce approximately 890 GWh of zero- carbon electricity per year, equivalent to the demand of 114,325 households, while simultaneously preventing emissions of 343,777 metric tons of carbon dioxide (CO₂) per year, 711 metric tons of sulfur dioxide (SO₂) per year and 1,488 metric tons of nitrogen oxides (NO_x) per year, and 17 tons of particulate matter (PM₁₀) per year.

As a result of this project, wind energy will account for nearly 5.5% of electricity generation in Nuevo Leon.

EDPR WIND ENERGY PROJECT

GENERAL CEPEDA, COAHUILA



Industrias Peñoles, the second largest Mexican mining company, follows a strategy of self-sufficiency through renewable energy. For this reason, they supported the EDPR wind energy farm that would provide clean energy for Peñoles operations in the state of Coahuila, Mexico. In 2013, according to the Mexican Ministry of Energy (SENER), the generation capacity in Coahuila was 2,989.5 mega-watts (MW), with 90% generated from coal. As a result of the EDPR wind project, renewable energy will account for almost 4% of gross power production in Coahuila, while the percentage of coal-fired power generation will drop from 90% to 87%.

The project comprises the design, construction and operation of a 199.5 MW wind farm with 95 turbines that will be developed in an area of approximately 4,753 hectares.

This project is expected to displace approximately 337,680 metric tons/year of carbon dioxide CO₂ and improve air quality by avoiding 2,312 metric tons per year of NO_x, 1,696 metric tons per year of SO₂ and 160 metric tons/year of PM₁₀.

The production of electricity will be provided to the industrial, commercial and domestic sectors in the region. The wind farm has already produced in its first year 699 GWh of zero-carbon electricity, equivalent to the annual energy consumption of 89,791 households.

APPENDIX

EMISSION FACTORS

State	Source	Emission factors in 2017 (tons/year)			
		CO ₂	NO _x	SO ₂	PM ₁₀
Coahuila	Based on PRODESEN 2018	483.09	3.31	2.43	0.23
Chihuahua		429.45	1.47	1.68	0.10
Nuevo Leon		386.27	1.67	0.80	0.02
Sonora		459.09	1.38	3.63	0.22
California	Based on EIA Electricity	215.2	0.32	Reported as 0.0	Not reported

AVERAGE HOUSEHOLD SIZE

State	Persons per household in 2015	Source
Coahuila	3.7	INEGI
Chihuahua	3.4	
Nuevo Leon	3.7	
Sonora	3.5	
California	2.96	U.S. Census Bureau

REFERENCES

INFRASTRUCTURE PROJECTS CERTIFICATION DOCUMENTS

EDPR Wind Energy Project in General Cepeda Coahuila. Nov 05, 2015.

<https://www.nadb.org/our-projects/infrastructure-projects/edpr-wind-energy-project-in-general-cepeda-coahuila>

"El Mezquite" Wind Energy Project in the Municipality of Mina in Nuevo Leon. Jun 07, 2017.

<https://www.nadb.org/our-projects/infrastructure-projects/el-mezquite-wind-energy-project-in-the-municipality-of-mina-in-nuevo-leon>

Orejana Solar Park Project in the municipality of Hermosillo, Sonora. Jul 07, 2017.

<https://www.nadb.org/our-projects/infrastructure-projects/orejana-solar-park-project-in-the-municipality-of-hermosillo-sonora>

Puerto Libertad Solar Park Project in the Municipality of Pitiquito, Sonora. Mar 08, 2018

<https://www.nadb.org/our-projects/infrastructure-projects/puerto-libertad-solar-park-project-in-the-municipality-of-pitiquito-sonora>

Santa Maria Solar Project in the Municipality of Galeana, Chihuahua. Jun 22, 2017.

<https://www.nadb.org/our-projects/infrastructure-projects/santa-maria-solar-project-in-the-municipality-of-galeana-chihuahua>

SEPV Imperial Solar Project. Nov 15, 2016.

<https://www.nadb.org/our-projects/infrastructure-projects/sepv-imperial-solar-project>

EXTERNAL SOURCES

EIA U.S. Energy Information Administration. Energy Consumption Estimates per Capita by End-Use Sector Ranked by State, 2017

https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_sum/html/rank_use_capita.html&sid=US

EIA U.S. Energy Information Administration. State Electricity Profiles. California Electricity Profile 2017.

<https://www.eia.gov/electricity/state/california/>

Instituto Nacional de Estadística, Geografía e Informática (INEGI). Total Estatal. Indicadores: Hogares, Vivienda y Urbanización: Vivienda: Promedio de ocupantes en viviendas particulares habitadas (Promedio), 2015.

<https://www.inegi.org.mx/app/areasgeograficas/?ag=26#tabMCcollapse-Indicadores>

Secretaría de Energía (SENER). PRODESEN Programa de Desarrollo del Sistema Eléctrico Nacional 2018 2032.

<https://base.energia.gob.mx/prodesen/PRODESEN2018/PRODESEN18.pdf>

Sistema de Información Energética (SIE). Secretaría de Energía. Dirección General de Planeación e Información Energéticas. Balance Nacional de Energía: Indicadores económicos y energéticos. Consumo de electricidad per cápita (kWh/hab).

<http://sie.energia.gob.mx/bdiController.do?action=cuadro&cvequa=IE0C01>

United States Census Bureau. American Fact Finder. Average Household Size State. 2015. <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

United States Environmental Protection Agency (EPA). Energy and the Environment. Greenhouse Gas Equivalencies Calculator.

<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

World Health Organization (WHO), Ambient Air Pollution: A Global Assessment of Exposure and Burden of Disease, 2016 (p.68)

<http://www.who.int/phe/publications/air-pollution-global-assessment/en/>

© A publication of the North American Development Bank

For further information about NADB Green Bond, please contact the Public Affairs department:

Jesse Hereford, Director of Public Affairs. Ph: +1 210.231.8000, E: jhereford@nadb.org

Photography: Cover and page 16: Courtesy of Acciona. All other photos: NADB

Design: Ildeliza Antonares

DISCLAIMERS

Background information only

The material in this document is general background information about the Bank's activities current at the date of the document. It is information given in summary form and does not intend to be complete for analytical purposes.

No reliance

The material in this document is not intended to be relied upon as advice to investors or potential investors and does not take into consideration the investment objectives, financial situation or needs of any particular investor. These should be considered with professional advice when deciding if an investment is appropriate. This document does not constitute financial product advice.



NORTH AMERICAN DEVELOPMENT BANK

San Antonio, Texas

Tel. (210) 231-8000

Ciudad Juarez, Chihuahua

Tel. (877) 277-1703

<http://www.nadb.org>

Follow us on twitter: @NADB_BDAN