

2014 YEAR IN REVIEW

NORTH AMERICAN DEVELOPMENT BANK &
BORDER ENVIRONMENT COOPERATION COMMISSION





CONTENT

- 3 Message from Management
- 4 Institutional Integration
- 5 2014 Activity and Results Overview
- 6 Projects Approved in 2014
- 7 Water
- 11 Air Quality
- 11 Clean and Efficient Energy
- 14 New Projects Featured
- 16 Project Activity in the Border Region in 2014
- 18 Infrastructure Completed in 2014
- 18 Water
- 22 Clean and Efficient Energy
- 24 Completed Projects Featured
- 26 Building Strong Communities Through Technical Assistance
- 28 Technical Assistance Featured
- 33 Institutional Overview
- 34 Summary of Annual Activity 2014-2010

MESSAGE FROM MANAGEMENT

2014 was a momentous year for the North American Development Bank (NADB) and the Border Environment Cooperation Commission (BECC) as their Board of Directors approved integrating the two institutions into a single entity, in order to fully merge the work that each institution has been carrying out in pursuit of their shared environmental mission.

Having recently celebrated the results of their first 20 years of operation, this integration effort marks a new era for the institutions of even greater operational efficiency, a more consolidated project development process and better results in the closeout and assessment of completed projects.

In light of this forthcoming transition and given the fact that the achievements of both institutions have always been inherently intertwined, we are pleased to present the first joint annual review highlighting the activities and performance of BECC and NADB in 2014. This publication consolidates the project development information that each institution had previously presented separately. The financial reports of each institution will continue to be published separately until the integration is finalized.

In 2014, project development and implementation continued with the certification and financing of 16 new environmental infrastructure projects, representing a total estimated investment of US\$1.31 billion. NADB financing totaled approximately US \$349 million, including additional funding for four projects previously certified. Moreover, 20 projects completed construction and are now benefiting more than 425,000 residents on both sides of the border.

Additionally, NADB and BECC jointly financed several technical assistance studies in 2014. Even before approval of full integration, the two institutions were working towards establishing a joint technical assistance program to better coordinate available resources for project development, sector-related studies and community capacity-building initiatives. During 2014, progress was made to align the operational guidelines of the institutions' separate programs with the goal of having the joint program fully operational by the end of 2015.

Finally, we are pleased to highlight the progress made in assessing the environmental impact of completed projects. Approximately five years ago a results measurement framework was established for projects certified and financed by the two institutions. At the close of 2014 the first impact assessment was presented to our Board of Directors regarding four wastewater collection and treatment projects that began operations in 2010. The results are being disseminated in various ways on the border.

As we move forward with the integration, we will continue to support efforts to preserve, protect and enhance the environment of the border region and advance the well-being of its communities, and look forward to the opportunities and challenges ahead.



Gerónimo Gutiérrez
Managing Director, NADB



María Elena Giner
General Manager, BECC



INSTITUTIONAL INTEGRATION

BECC and NADB were established in 1994 by the Governments of the United States and Mexico as two separate yet interdependent institutions with the common mission of facilitating the development of environmental infrastructure in the U.S.-Mexico border region in order to preserve, protect and enhance the environment. While BECC focuses on certifying the technical viability and environmental/health impacts of projects, NADB concentrates on project financing and oversight for project implementation.

In 2004, both governments agreed to establish a single board of directors to govern BECC and NADB, thereby unifying the policy and strategic guidance of the institutions. Over the last ten years, BECC and NADB have continued to enhance their coordination with respect to policies and procedures, particularly those relating to technical assistance and project certification and development, and recognized the importance of achieving the same improvements in the project administration, close-out and results measurement processes.

In December 2014, the Board of Directors approved a resolution recommending that the two governments integrate BECC and NADB into a single entity. The recommendation for institutional integration comes as the result of a joint initiative presented by the institutions in July 2011 to streamline their processes and improve coordination of their respective activities, which will maximize their service to border communities and make more efficient use of their available resources.

Under the integration, the mission, purposes and functions of the institutions will be preserved, and their geographic jurisdiction and environmental mandate will remain unchanged. A strong technical assistance and grant management program will also be maintained, and public participation, transparency and access to information in all aspects of operation will continue to be central to BECC-NADB operations. The current offices located in Ciudad Juarez, Chihuahua, and San Antonio, Texas, will continue to serve the border region.

As of the date of this report, the two governments were in the process of negotiating the corresponding amendments to their Charter.

2014 ACTIVITY AND RESULTS OVERVIEW

NEW PROJECTS **16** new certified projects, to benefit more than **1.55 MILLION RESIDENTS**

10 WATER • 4 CLEAN AND EFFICIENT ENERGY • 2 AIR QUALITY

\$1.3 BILLION DOLLARS TOTAL ESTIMATED INVESTMENT COST

NEW FINANCING **\$349.37** million dollars in new financing approved

\$323.67 MILLION IN LOANS • \$25.70 MILLION IN GRANTS*

\$316.68 million contracted for the financing of 16 projects, including 8 of the new projects.

\$270.03 million disbursed in grant and loans

\$4.03 million in technical assistance for 58 studies

COMPLETED PROJECTS **20** projects finished construction, benefiting **425,400** residents

3 WATER • 12 WASTEWATER • 5 CLEAN AND EFFICIENT ENERGY

4,244 new sewer connections

7.29 million gallons a day of wastewater collected and treated

114 megawatts of new renewable energy capacity

210,094 metric tons of CO₂ emissions displaced annually

* Grant programs for project financing:

Border Environment Infrastructure Fund (BEIF): Grant program funded by the U.S. Environmental Protection Agency (EPA) for the implementation of high-priority municipal drinking water and wastewater infrastructure projects located within 100 kilometers of the U.S.-Mexico border.

Community Assistance Program (CAP): Funded with NADB retained earnings, this program offers grant financing to support the implementation of projects sponsored by public entities in all environmental sectors eligible for NADB financing.

PROJECTS APPROVED IN 2014

Highlights:

16 new projects certified:

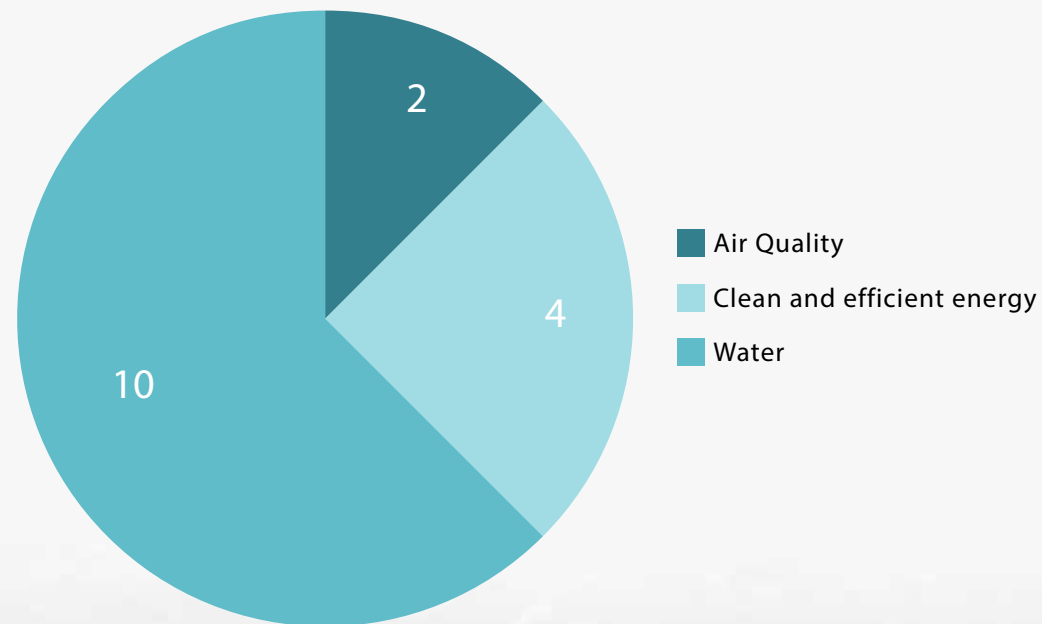
- 10 water/wastewater, 2 air quality, 4 clean and efficient energy

Estimated population benefited: 1.55 million

These new projects are expected to provide:

- 51 new water connections
- 6,917 new wastewater connections
- 7.8 million gallons a day of wastewater collected and treated
- 420.5 megawatts of new generation capacity
- Estimated reduction of at least 1,700 metric tons/year of PM₁₀
- Greenhouse Gas (GHG) displacement of 825,296 metric tons of CO₂ per year
- Help increase water delivery efficiency to 60% in an irrigation district in Mexico

New Projects by Sector



WATER

Holtville, California Wastewater Treatment Plant Improvements

BECC Certification: February 2014
NADB Approved Financing: US\$3.56 million BEIF grant
Funding Partner(s): Clean Water State Revolving Fund (CWSRF)

Objective: Rehabilitate and upgrade the wastewater treatment plant to reduce ammonia and other pollutants in order to meet effluent discharge requirements and improve the quality of the receiving water body.

Expected Outcomes:

- Improve wastewater treatment of 0.85 million gallons per day (mgd)
- Improve wastewater treatment service for 100% of the system's 1,279 existing residential connections
- Reduce ammonia and biochemical oxygen demand to below or equal to permit limits

Mexicali, Baja California Rehabilitation of the Wastewater Collection System in Colonias Loma Linda and Esperanza

BECC Certification: December 2014
NADB Approved Financing: US\$0.59 million BEIF grant
Funding Partner(s): The Mexican national water agency, Comisión Nacional del Agua (CONAGUA); the local water utility, Comisión Estatal de Servicios Públicos de Mexicali (CESPM)

Objective: Rehabilitate the wastewater collection infrastructure, which experiences frequent collapses resulting in surface pooling of untreated discharges and creating a threat to human health and risk to water quality in shared bodies of water such as the New River. The project will eliminate exposure to untreated discharges and improve the quality of the receiving water body.

Expected Outcomes:

- Install 16,004 ft of pipelines that will benefit 466 residential connections in Colonia Esperanza
- Install 6,503 ft of pipelines that will benefit 171 residential connections in Colonia Loma Linda

Palmview, Texas Agua SUD Wastewater Collection and Treatment (East) *

BECC Certification: May 2014
NADB Approved Financing: US\$8 million BEIF grant
Funding Partner(s): Texas Water Development Board

Objective: Provide access to wastewater Collection and treatment services in an unserved area of the Agua Special Utility District (Agua SUD), where residents currently use septic tanks and drain fields.

*On February 27, 2015, AguaSUD informed BECC and NADB of their decision not to proceed with construction of the certified project. The utility is pursuing different options.

**Piedras Negras,
Coahuila**
Wastewater System
Rehabilitation Project

BECC Certification: May 2014
 NADB Approved Financing: US\$0.25 million CAP grant
 Funding Partner(s): Local water utility, Sistema Municipal de Agua y Saneamiento de Piedras Negras, Coahuila (SIMAS)
 Objective: Repair damage within two sections of the Rio Bravo Collector caused by abnormally heavy rainfall in June 2013, which interrupted wastewater conveyance to the treatment plant and caused approximately 2.3 mgd of untreated wastewater to be discharged directly into the Rio Grande.

- Expected Outcomes:
- Rehabilitate 476 ft of wastewater collection lines
 - Eliminate an estimated 2.3 mgd of untreated wastewater overflows

**San Luis Rio
Colorado, Sonora**
Expansion of the
Wastewater Collection
System in Avenidas B

BECC Certification: May 2014
 NADB Approved Financing: US\$3.45 million BEIF grant
 Funding Partner(s): CONAGUA
 Objective: Increase access to wastewater collection infrastructure for the city's population, thereby eliminating a potential source of groundwater contamination from inadequate on-site disposal systems

- Expected Outcomes:
- Install 253,179 linear feet of sewer lines and 4,369 new connections, providing first-time service to an estimated 16,122 residents
 - Collect and adequately treat an estimated 1.07 mgd of wastewater

**Socorro, El Paso
County, Texas**
Cotton Valley Wastewater
Collection Project

BECC Certification: December 2014
 NADB Approved Financing: US\$1.29 million BEIF grant
 Objective: Provide first-time wastewater collection and treatment services to Cotton Valley residents who currently must rely on on-site disposal systems, such as septic tanks.

- Expected Outcomes:
- Install a sewer system with 5,640 ft of pipeline
 - Connect 78 households to the new sewer system and decommission their septic systems
 - Collect and adequately treat approximately 30,000 gallons per day of wastewater



Tecate, Baja California
Expansion of Water and
Wastewater Services to
Unserved Areas of Colonia
Piedra Angular

BECC Certification: December 2014
 NADB Approved Financing: US\$0.45 million CAP grant
 Funding Partner(s): Local water utility, Comisión Estatal de Servicios Públicos de Tecate (CESPTE)
 Objective: Provide wastewater collection and treatment service to the entire subdivision, where residents currently use substandard, on-site disposal systems or discharge their wastewater directly onto the street; as well as extend drinking water service to households not connected to the existing distribution system.

- Expected Outcomes:
- Construct a sewer system for the entire subdivision with 7,858 ft of pipeline and install 174 connections
 - Collect and treat an estimated 34,000 gallons a day of wastewater
 - Extend the water distribution system with 1,339 ft of pipeline providing access to safe and reliable drinking water service for 51 households

Tijuana, Baja California
Rehabilitation of
Wastewater Collection
Main Lines and Residential
Wastewater Connections

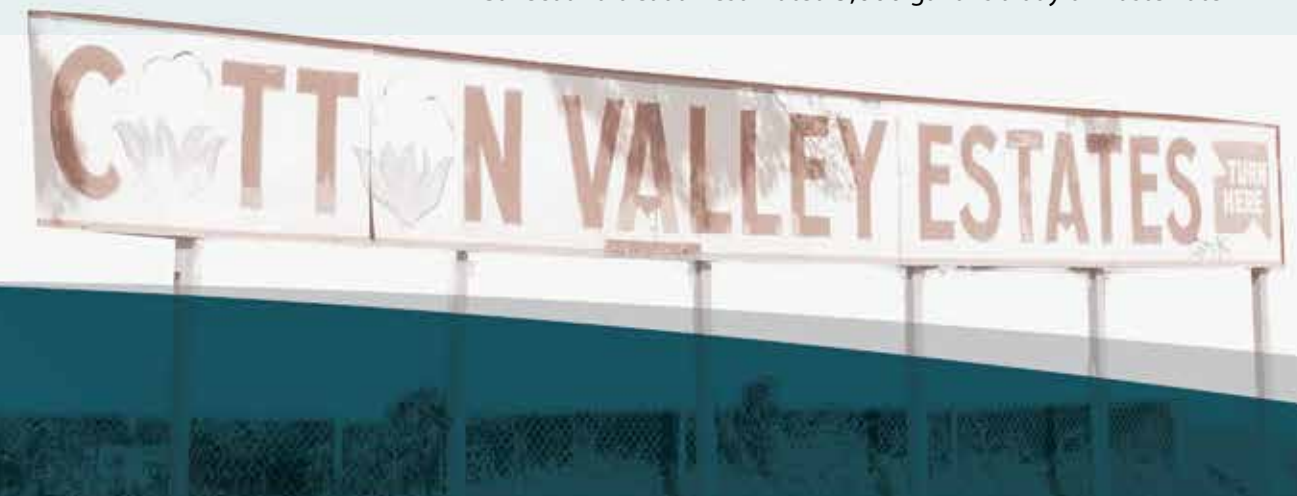
BECC Certification: December 2014
 NADB Approved Financing: US\$3 million BEIF grant; US\$1.04 million loan
 Funding Partner(s): Local water utility, Comisión Estatal de Servicios Públicos de Tijuana (CESPT)
 Objective: Replace deteriorated wastewater collection lines requiring major rehabilitation to prevent frequent line collapses and negative consequences for Tijuana's environment, including damage to the Tijuana River.

- Expected Outcomes:
- Improve wastewater collection and conveyance infrastructure for up to 141,342 existing residential wastewater connections
 - Provide wastewater collection service for up to 525 new residential wastewater connections
 - Collect and treat an estimated 0.09 mgd of additional wastewater currently discharged to open drains

Tornillo, Texas
Arsenic Treatment and
Wastewater Collection
Project

BECC Certification: August 2014
 NADB Approved Financing: US\$3.25 million BEIF grant
 Objective: Improve drinking water quality by reducing naturally occurring arsenic concentrations in the well water from the Hueco Bolson Aquifer to comply with regulatory requirements, as well as connect 19 neighboring homes to the facility's wastewater line, providing first-time wastewater collection and treatment services.

- Expected Outcomes:
- Construction of an arsenic treatment facility (ATF) with the capacity to treat 600 gallons per minute of water from Wells 2 and 3
 - Provide first-time sewer service to 19 households
 - Collect and treat an estimated 5,600 gallons a day of wastewater



Anahuac, Nuevo Leon
Modernization and
Improvements to Don
Martin Irrigation District
004

BECC Certification: December 2014

NADB Approved Financing: an estimated US\$30.77 million loan (part of US\$76.92 million loan that will also fund an air quality project)

Funding Partner(s): Federal and state funds, irrigation district users

Objective: Reduce the volume of water pumped from the reservoir to a sustainable level through improvements aimed at reducing water losses in the conveyance systems caused by obsolete and deteriorated infrastructure, as well as inefficient operation of the canal systems and irrigation techniques.

Expected Outcomes:

- Reduction of water losses from evaporation and filtration, as well as from inefficient use through traditional surface or flood irrigation techniques
- A decrease in water extraction from the reservoir to reach a sustainable water volume of 146.2 million cubic meters
- Increase water use efficiency in the district to an estimated 60%

AIR QUALITY

Mexican Border States
Border-wide
Public Transportation
Improvement Program in
Mexico

BECC Certification: June 2014

NADB Approved Financing: US\$9.12 million loan

Funding Partner(s): Mercader Financiam, S.A. de C.V., SOFOM, E.N.R. (Mercader)

Objective: Improve public transportation fleets through a vehicle purchase program by facilitating the financing of low-emission technology vehicles, contributing to the displacement of greenhouse gases and other pollutants in urban areas throughout the northern border region of Mexico.

Expected Outcomes:

- New diesel vehicles that comply with EPA 2004 standards will lower nitrogen oxides (NOx)
- Displacement of an estimated 192 metric tons/year of carbon dioxide (CO₂), 30 metric tons/year of nitrogen oxides (NOx) and 1.2 metric tons/year of hydrocarbons (HC).

Monterrey, Nuevo Leon
Air Quality
Improvements through
Street Paving for the
Monterrey Metropolitan
Area

BECC Certification: December 2014

NADB Approved Financing: an estimated US\$46.15 million loan (part of a US\$76.92 million loan that will also fund a water conservation project).

Funding Partner(s): Federal, state and municipal funds

Objective: Increase street paving coverage road in neighborhoods or areas located within the municipalities of El Carmen, Garcia, General Escobedo, Guadalupe, Juarez, Monterrey, Pesqueria and Salinas Victoria.

Expected Outcomes:

- Pave between 844,000 and 928,000 square meters of dirt roads
- Reduce harmful PM₁₀ emissions by an estimated 1,700 metric tons/year

CLEAN AND EFFICIENT ENERGY

General Bravo, Nuevo Leon
Ventika Wind Energy
Project

BECC Certification: February 2014

NADB Approved Financing: US\$70.00 million loan

Funding Partner(s): TEG Energía, S.A. de C.V. (TEG), a subsidiary of Cemex, S.A. de C.V., and Fistera Energy, among others.

Objective: Design, construction, and operation of a 126 MW wind farm to increase the installed capacity of renewable energy and reduce the demand on fossil-fuel energy. The energy produced will be purchased by several private companies including FEMSA, DEACERO, Tecnológico de Monterrey and CEMEX through self-supply schemes.

Expected Outcomes:

- Generate approximately 512.7 gigawatt-hours (GWh) of electricity during the first year of operation
- Displace approximately 303,518 metric tons/year of (CO₂), 1 metric ton/year; of sulfur dioxide (SO₂), and 751 metric tons/year of nitrogen oxides (NOx)

**General Bravo,
Nuevo Leon
Ventika II Wind
Energy Project**

BECC Certification: February 2014
NADB Approved Financing: US\$70.00 million loan
Funding Partner(s): TEG Energía, S.A. de C.V. (TEG), a subsidiary of Cemex, S.A. de C.V., and Fistera Energy, among others.
Objective: Design, construction, and operation of a 126 MW wind farm to increase the installed capacity of renewable energy and reduce the demand on fossil-fuel energy. The energy produced will be purchased by several private companies including FEMSA, DEACERO, Tecnológico de Monterrey and CEMEX through self-supply schemes.

Expected Outcomes:

- Generate approximately 521.0 GWh of electricity during the first year of operation
- Displace approximately 308,431 metric tons/year of CO₂, 1 metric ton/year of SO₂, and 763 metric tons/year of NO_x

**Llera de Canales,
Tamaulipas
Tres Mesas Wind Energy
Project**

BECC Certification: June 2014
NADB Approved Financing: US\$55.00 million loan
Funding Partner(s): Oak Creek Energy Systems, Inc. (OCE), through its wholly owned Mexican subsidiary Frontera Renovable, S. de R.L. de C.V.
Objective: Design, construction, and operation of 148.5-MW wind farm. The electricity generated will be purchased by Sigma Alimentos, S.A. de C.V., and other subsidiaries of Alfa S.A.B. de C.V., as well as by subsidiaries of Walmart de México S.A.B. de C.V., through self-supply schemes.

Expected Outcomes:

- Generate approximately 510 GWh of electricity during the first year of operation
- Displace approximately 200,599 metric tons/year of CO₂, 1 metric ton/year of SO₂, and 700 metric tons/year of NO_x.

**Niland, California
SunPeak Solar Park 2**

BECC Certification: March 2014
NADB Approved Financing: US\$41.08 million loan
Funding Partner(s): Imperial Valley Solar Company 2, LLC (IVSC 2), a wholly-owned subsidiary of SunPeak Solar, LLC.
Objective: Construction and operation of a 20-MW_{AC} photovoltaic solar park, which will generate electricity to be purchased by the Imperial Irrigation District (IID), pursuant to a long-term power purchase agreement.

Expected Outcomes:

- Generate approximately 47,000 MWh during the first year of operation
- Displace more than 12,748 metric tons/year of CO₂ and 19 metric tons/year of NO_x.



NEW PROJECTS FEATURED

ARSENIC TREATMENT & WASTEWATER COLLECTION PROJECT, TORNILLO, TEXAS

For families living in Tornillo, Texas the certification and financing of this project means improved water quality and for some, first-time wastewater service. The project consists of the construction of an arsenic treatment facility (ATF), and the addition of 19 new wastewater connections to the ATF waste line. The town of 3,500 residents relies on well water from the Hueco Bolson Aquifer, which contains naturally occurring arsenic in excess of primary water standards. The project will reduce arsenic concentrations to allowable levels. Since the ATF system will require the construction of a sanitary sewer line, it will allow for 19 nearby homes to receive first-time wastewater services, eliminating the risks of exposure to untreated or inadequately treated wastewater discharges. The new connections will prevent discharges of approximately 5,600 gallons per day of inadequately treated wastewater.

“The ATF project will lower the arsenic to a level acceptable by the required standards of the Texas Commission on Environmental Quality and will also remove iron and manganese content. The improved water quality is something that the community is anxiously looking forward to.”

-Francelia Vega, Business Manager, El Paso County Tornillo Water Improvement District

MODERNIZATION AND IMPROVEMENTS TO DON MARTIN IRRIGATION DISTRICT 004

The 004 Don Martin Irrigation District (DMID), one of the oldest irrigation districts in Mexico, comprises a total surface area of 73,190 acres, 93.5% of which is located in the state of Nuevo Leon and the remaining 6.5% in the state of Coahuila. Currently, it sustains water losses caused by obsolete and deteriorated infrastructure along its 470 miles of irrigations canals, and the inefficient operation of the main and secondary canal systems. CONAGUA estimated that the average efficiency in the District is 41.8%.

The modernization and improvements will line or enclose the distribution infrastructure and irrigation systems that will reduce water lost to evaporation and filtration due to unlined canals, increasing the system's efficiency to 60%. It will also increase water management efficiency and improve water distribution infrastructure, resulting in a decrease in water extraction from the reservoir to reach a

sustainable water level, representing savings of approximately 40 million cubic meters annually. Investments related to the proposed improvements began in 2012 and by 2013, close to 4.7 miles of the main canal had been rehabilitated and 37.9 miles of pipeline had been installed to enclose the secondary canal system. An estimated 18,480 residents in Anahuac, NL will benefit from this project which is also expected to trigger economic development activities in the region.

“This is a project that we have been needing and wanting for a while. It will help us conserve water which will facilitate or will provide the water necessary for our crops for a long time. This will help make water available throughout the year and for more consecutive years.”

-Abel Guajardo, Don Martin Irrigation District producer and District 004 President

BORDER-WIDE PUBLIC TRANSPORTATION IMPROVEMENT PROGRAM IN MEXICO, NORTHERN MEXICAN BORDER

In Mexico, the public transportation sector has a complex structure with service providers ranging from a single bus and route, to those with large fleets and multiple routes. The program will provide access to affordable financing for the purchase or lease of low-emission vehicles for all types of service providers, whether wanting to purchase one vehicle or a fleet of vehicles. The project will help reduce greenhouse gases and other pollutants in urban areas throughout the northern border region of Mexico.

By offering a safe and accessible public transportation option for the existing market, the project aims at reducing vehicle congestion and emissions, which serves a broader environmental and human health benefit. With nearly 30% of total CO₂ equivalent emissions in Mexico being attributed to the transportation sector, the project is expected to prevent an estimated 192 metric tons/year of CO₂, 30 metric tons/year of nitrogen oxides (NO_x) and 1.2 metric tons/year of hydrocarbons (HC). The vehicles will have to comply with EPA 2004 emission standards and are expected to lower NO_x and emissions by approximately 50% and will achieve nearly 24% lower CO₂ emissions. The vehicles available for purchase will be manufactured by DINA Camiones, one of the largest bus and truck manufacturers in Mexico.

“The project will have huge benefits on the respiratory health of people who live on the border, as well as enhance urban mobility to support daily activities like employment, school, access to health care and other necessities, that rely on public transport.”

-Elizabeth Rodríguez Aguirre, GRUPO DINA Project Manager



PROJECT ACTIVITY IN THE BORDER REGION IN 2014



INFRASTRUCTURE COMPLETED IN 2014

Highlights:

20 projects completed

- 3 water, 12 wastewater; 5 clean energy

Outcomes:

- 4,244 new sewer connections
- 7.29 MGD of wastewater collected and treated
- 114 MW of new renewable energy capacity
- 149,800 residents in three communities benefiting from improved water services

WATER

Anthony, New Mexico Water Improvements Project

BECC Certification: May 2011
NADB Financing: US\$2.76 million BEIF grant
Completed: February 2014

Improvements to the city's water system, including the installation of a reverse osmosis water treatment system, has reduced arsenic levels in compliance with federal regulations and allowed access to all available wells, lessening the local burden on the aquifer and ensuring a reliable and sustainable water supply.

El Paso, Texas Paisano Valley Water Project

BECC Certification: July 2010
NADB Financing: US\$15 million loan
Completed: August 2014

Replacing about 4.3 miles of deteriorated 36-inch waterline with a 48-inch bi-directional pipeline has reduced the risk of pipeline breaks, service interruptions, water losses, drinking water contamination, and damage from excessive water spills. The improvements ensure reliable service during drought conditions due to increased distribution capacity and bi-directional flows.

San Luis, Arizona New Water Transmission Line Project

BECC Certification: March 2013
NADB Financing: US\$0.50 million CAP grant
Completed: April 2014

The new water transmission main connects the city's two water distribution systems, improving water management, increasing system reliability and reducing health risks associated with inadequate water pressure. In particular, it reduces the potential for water shortages during periods of peak usage in the summer.

Brawley, California Wastewater System Improvements

BECC Certification: March 2013
NADB Financing: US\$0.45 million CAP grant
Completed: December 2014

The improvements to the city's wastewater conveyance system included the installation of two new pumps in Lift Station No. 2 and a back-up generator in Lift Station No. 1. Lift Station No. 2 is the city's primary station and its rehabilitation ensures reliable service for the hospital, other medical facilities and approximately 2,000 residences.

El Millon, Jesus Carranza, and Tres Jacales, Chihuahua Wastewater Collection and Treatments Projects

BECC Certification: May 2010
NADB Financing: US\$1.05 million BEIF grant
Completed: July 2014

A new sewer system was built in each community, along with a general collector and regional treatment plant to serve all three communities, providing first-time wastewater collection and treatment service to 1,656 residents. The 3 projects are reducing the environmental and health risks associated with untreated sewage.

Holtville, California
Wastewater Collection System

BECC Certification: May 2013
NADB Financing: US\$0.25 million BEIF grant
Completed: June 2014

The expanded and improved wastewater collection system for first-time sewer service to 20 homes collects approximately 7,044 gallons per day of wastewater and eliminates overflows from the failing septic systems previously used in these households.

Mexicali Baja California
Wastewater Collection and Treatment Project (IV)

BECC Certification: October 2007
NADB Financing: US\$18.95 million loan
Completed: September 2014

Extended wastewater services to the eastern area of the city provided nine subdivisions and more than 20,000 residents with first-time access to sewer services, reducing the potential for surface and groundwater contamination and the health risks associated with raw sewage flows.

Miguel Aleman, Tamaulipas
Wastewater Collection System Improvements

BECC Certification: July 2012
NADB Financing: US\$1.98 million BEIF grant
Completed: December 2014

Rehabilitation of the aging wastewater collection system in the downtown area is preventing sewer collapses and overflows in the urban area, with runoff eventually flowing into the Rio Grande and Buey Creek. The improvements also included 1,888 new residential sewer connections, benefiting more than 19,200 residents.

Playas de Rosarito, Baja California
Expansion of the Wastewater Collection System for the Unserved Area of Ejido Plan Libertador and Ampliación

BECC Certification: May 2011
NADB Financing: US\$1.50 million BEIF grant, US\$0.40 million loan
Completed: September 2014

First-time access to sewer services for approximately 1,832 individuals in the Plan Libertador subdivision on the east side of the city is now available thanks to a new wastewater collection system with the capacity to collect more than 1 mgd.

Playas de Rosarito, Baja California
Expansion of the Wastewater Collection System for the Unserved Area Ampliación Lucio Blanco (Phase II)

BECC Certification: May 2012
NADB Financing: US\$0.86 million BEIF grant
Completed: September 2014

Approximately 2,729 individuals in the Lucio Blanco subdivision on the north side of the city now have first-time access to sewer services thanks to a new wastewater collection system with the capacity to collect more than 170,000 gallons a day of wastewater.

Sierra Vista, Arizona
Wastewater Collection System Expansion to the Sulger Subdivision

BECC Certification: April 2013
NADB Financing: US\$3.97 million BEIF grant
Completed: September 2014

With the newly constructed gravity sewer system, including 154 household connections, residents of the Sulger subdivision are now enjoying access to a reliable centralized wastewater collection and treatment system, which has replaced the substandard and deteriorating septic tanks that they had to rely on previously.

Tijuana, Baja California
Expansion of the Wastewater Collection System for the Unserved Area of Colonia Alcatrazes

BECC Certification: May 2011
NADB Financing: US\$0.43 million BEIF grant, US\$0.25 million loan
Completed: September 2014

A newly built wastewater collection system is providing 3,020 residents in the Alcatrazes subdivision with first-time access to sewer services. A total of 174 homes, representing an estimated 644 residents, have already been connected to the new system. Once all the homes are connected to the system, the project is expected to collect and treat more than 30,270 gallons a day of wastewater.

Tijuana, Baja California
La Cuesta, Farallon and SEDUE-SAAS Wastewater Collection System Improvements

BECC Certification: October 2012
NADB Financing: US\$1.56 million loan
Completed: February 2014

Rehabilitation of the Farallon collector and the SEDUE-SAAS force main have reduced the risk of line breaks and leaks, preventing up to 5.3 mgd of untreated sewage discharges from contaminating beaches along the Pacific coast. In addition, the construction of a new sewer system has provided first-time access to wastewater collection and treatment services to an estimated 309 households in the La Cuesta subdivision on the southeast side of the city.



CLEAN AND EFFICIENT ENERGY

Brackettville, Texas Alamo 4 Solar Park

BECC Certification: October 2013
NADB Financing: US\$40.00 million loan
Completed: December 2014

The 39.6 MW_{AC} solar park, capable of generating electricity equivalent to the annual consumption of approximately 5,200 households, displaces over 52,965 metric tons/year of CO₂ and other greenhouse gases, thereby improving air quality, while providing a safe, reliable energy alternative. The energy produced is being purchased by CPS Energy.

Brawley, California IID Solar Park

BECC Certification: March 2013
NADB Financing: US\$19.20 million loan
Completed: October 2014

The 6 MW_{AC} solar park is projected to generate enough electricity to supply the equivalent of approximately 1,935 households. The Imperial Irrigation District (IID) is purchasing the electricity generated. Additionally, as the park sits on 40 acres of San Diego State University, the institution has access to the facility for research and educational purposes.

Reynosa, Tamaulipas El Porvenir Wind Project

BECC Certification: February 2012
NADB Financing: US\$51.00 million loan
Completed: March 2014

The 54-MW wind farm with 30 wind turbines, each with a nominal capacity of 1.8 MW, is the first major utility-scale project to be built in the northern border region of Mexico. The electricity is being purchased by the Mexican retailer Soriana through a self-supply scheme and will be credited against consumption in its stores nationwide.

Saltillo, Coahuila Lorean Landfill Gas-to-Energy Project

BECC Certification: May 2013
NADB Financing: US\$2.61 million loan
Completed: November 2014

This biogas project, which became operational in late 2013, extracts methane gas from the municipal landfill to generate electricity. With a capacity of 1.6 MW, it supplies electricity to Saltillo under a self-supply permit.

Tucson, Arizona Davis-Monthan AFB Solar Park

BECC Certification: November 2012
NADB Financing: US\$27.59 million loan
Completed: January 2014

The 12.6-MW_{AC} solar plant serves the air force base and is expected to meet approximately 35 % of its electrical needs. This facility is helping displace over 16,964 metric tons of CO₂.



COMPLETED PROJECTS FEATURED

PAISANO VALLEY WATER PROJECT, EL PASO COUNTY, TX

In September 2014, the El Paso Water Utilities Public Service Board (PBS) completed the replacement of the Paisano Valley water transmission line, a critical component of El Paso's water distribution system, providing service to the downtown area, as well as the lower portion of the Upper Valley in El Paso, Texas. The project entailed the installation of more than four miles of new 48-inch bi-directional pipeline from Racetrack Drive and Torres Street to the University of Texas at El Paso (UTEP) South campus. The deteriorated 36-inch waterline had been in operation for over 50 years. In addition to reducing the risk of pipeline breaks, service interruptions, water losses, and drinking water contamination, the increased distribution capacity and bi-directional flows will also help ensure reliable service to residents during drought conditions.

"The added capacity will allow EPWU to deliver up to seven times more water in both directions, improving the ability to move well water during drought situations and to move river water when it is plentiful."

-Christina Montoya, Vice president of Public Affairs, El Paso Water Utilities (EPWU)

NEW WATER TRANSMISSION LINE, SAN LUIS, AZ

The new 16-inch water transmission main to interconnect the two water distribution systems is already improving water resource management and increasing system reliability for the City of San Luis, Arizona. In summer months, the central water system was operating at maximum capacity and subject to incidents of low pressure, while the newer East Mesa system was underutilized with 90% of its capacity available. The interconnection of the two systems is reducing water shortages during periods of peak usage, as well as the health risks associated with inadequate water pressure.

"This project increased the capacity of the central system from 4 million to 7 million gallons per day, improving the environmental water supply and the sustainability of our future development."

-Jenny Torres, Community Development Director, City of San Luis

WASTEWATER COLLECTION AND TREATMENT PROJECT, MIGUEL ALEMAN, TAMPS

More than 19,230 residents are benefiting from the rehabilitation of the downtown sewer system, which included the construction of a new lift station and force main, replacement of 63,066 ft. of deteriorated sewer lines and installation of 1,888 new residential sewer connections. Completed in December 2014, the new system has the capacity to collect and convey up to 1.8 MGD of sewage to the wastewater treatment plant and is reducing the risk of line breaks and sewage spills from contaminating the Rio Grande and El Buey Creek. Additionally, residents living near the old lift station are breathing fresher, healthier air. The treated effluent is being discharged to the Guardados irrigation canal for agriculture reuse.



"For as long as I can remember, I always had problems with bad odors and sometimes respiratory illnesses. Now it's very comfortable to come out and play with my grandchildren and feel the fresh air and no more bad smells."

-Ms. Sanjuana García García, resident of the Barrera subdivision, Miguel Alemán



EL PORVENIR WIND PROJECT, REYNOSA, TAMPS

Located on farmland southeast of Reynosa, the 54-MW wind farm is fully operational and has been supplying electricity to the Mexican grid since March 2014, generating over 140,000 MWh. The electricity produced by the wind farm is being purchased by the Mexican retailer Soriana through a self-supply scheme and will be credited against consumption in its stores nationwide. Anticipated environmental benefits include the displacement of more than 90,976 metric tons/year of CO2 and other greenhouse gas emissions.

The farm community has also benefitted directly from the installation of the wind farm. During construction, the sponsor improved public infrastructure within the community, including roadways and a bridge expansion and, with its own funds, also refurbished the public meeting rooms where priority medical attention is provided to women, children and the elderly. Additionally, the project sponsor secured the land through a long-term lease agreement with 30 landowners, who receive a percentage of the revenue from the sale of energy produced by the wind farm. The landowners can continue to farm their property as long as agricultural activity does not interfere with electricity production.

LOREAN LANDFILL GAS-TO-ENERGY PROJECT SALTILLO, COAH

In November 2014, construction was completed on the final components of a 1.6-MW biogas project to generate electricity by capturing the methane gas from the municipal landfill in Saltillo, Coahuila. Lorean Energy Group, S.A.P.I. de C.V. was awarded the concession in 2011 to develop the project and operate the facility within the landfill. The biogas plant, which became operational in August 2013, currently extracts gas from landfill cells 1, 2 and 3. The electricity produced is purchased by the Municipality of Saltillo under a self-supply permit, saving the city around \$150,000 pesos monthly of the total energy bill. Benefits include the adequate closure of the landfill cells no longer in use in order to capture the biogas from the decomposing waste, thus eliminating odors and breeding grounds for disease-carrying vectors. The extraction and burning of the methane gas is preventing its potential release into the atmosphere. Additionally, the clean energy generated by the facility is expected to displace an estimated 45,015 metric tons/year of carbon dioxide equivalent (CO2e).

"At the close of 2014, the plant had produced 9,393 gigawatts (GW) of electricity, of which 6,600 GW were generated during the first year. For 2015, it is expected to generate more than 11,400 GW!"

- Aristóteles Israel Alvarado Saucedo, General Manager, Grupo Lorean



BUILDING STRONG COMMUNITIES THROUGH TECHNICAL ASSISTANCE

HIGHLIGHTS:

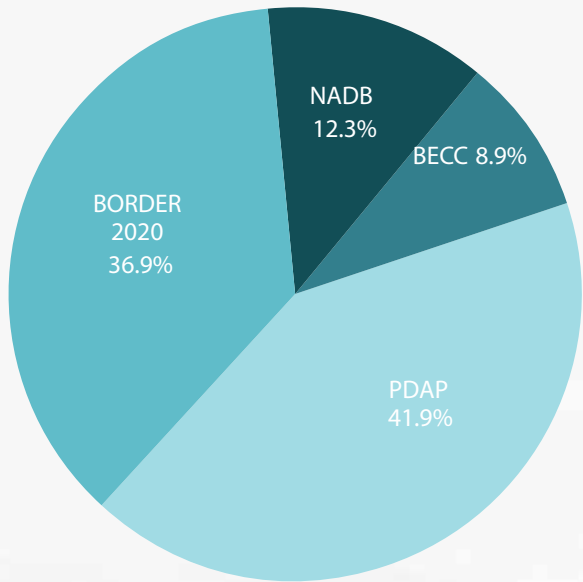
\$4.03 million dollars in technical assistance grants for approved 58 studies in 2014

- \$494,132 – NADB for 7 studies
- \$358,406 – BECC for 8 studies
- \$1,689,716 – PDAP for 14 studies
- \$1,487,498 – Border 2020 for 29 studies

NADB training program: seven seminars attended by 177 participants

BECC training program: four workshops attended by 120 participants

2014 Funding Approval



BECC and NADB offer technical assistance (TA) through various programs aimed at helping communities prepare projects for certification and implementation. In addition to funding project development studies, they also partner with other organizations to provide training in a variety of areas, as well as for capacity-building measures aimed at achieving the effective and efficient operation of public services. In addition to using its own resources for TA, BECC also administers the Project Development Assistance Program (PDAP), which is funded by the U.S. Environmental Protection Agency (EPA) for the development and design of water and wastewater projects.

Having historically administered separate technical assistance programs, BECC and NADB in 2014 determined that they could better serve communities and optimize resources by merging their two programs, resulting in the identification of four master plans, a border crossing study and a water management program under the first joint work plan. The joint program will continue to develop high-quality environmental infrastructure projects and promote institutional strengthening. Both organizations continued to support the Border Energy Forum held this year in Monterrey, NL, and delivered the first Border Green Infrastructure Forum held in Cd. Juarez, CHIH. Under the joint program, technical assistance will be provided in three categories: project development, studies by sector, and institutional capacity-building.

Since 2005, BECC has also partnered with the U.S.-Mexico Border 2012/2020 program, a collaborative effort developed by EPA and the Mexican Ministry of Environment and Natural Resources (SEMARNAT), in several key programs and initiatives aimed at reducing air pollution, improving access to clean and safe water and increasing environmental stewardship, which have had a great impact along the border region. In 2014, 29 projects are authorized and are in various stages of development.

TECHNICAL ASSISTANCE FEATURED

Building Capacity in Renewable Energy Hospital Infantil de las Californias, Tijuana, B.C.

NADB and BECC jointly provided technical assistance funding to the State of Baja California for a 150-kW pilot solar plant to supply the Hospital Infantil de las Californias in Tijuana with a clean and reliable source of electricity. NADB successfully negotiated the donation of the solar panels from the manufacturer, Astronergy, two 100-kW inverters from KACO New Energy, Inc., and the panel mounting structures from VERSOL. Thus, through grants and donated materials, the entire project was executed at no cost to the children's hospital, a private not-for-profit institution. Moreover, to maximize the use of the solar panels and keep them in top condition, the hospital is working with students from the Renewable Energy Engineering program at the Universidad Autónoma de Baja California. Since the system initiated operations six months ago, the 528 panels installed in the hospital parking lot are supplying an average of 50 percent of the hospital's electricity needs. The energy savings is allowing the hospital to channel more resources to its efforts to increase the number of children served each year.

"The idea is to become a national model, not just in the medical sense or within the concept of social responsibility. We are working to become a green hospital distinguished for its use of renewable energy."

-Dr. José Antonio Loaiza Martínez,
Director del Hospital Infantil

MONTHLY CONSUMPTION COMPARISON (kWh)				
Month	Total Consumption		Reduction	Percentage reduced
	2013	2014		
July	33,696	18,552	15,144	45%
August	33,824	15,303	18,521	55%
September	32,944	20,603	12,341	37%
October	27,056	20,859	6,197	23%
November	24,416	12,993	11,423	47%
December	22,976	14,170	8,806	38%

Source: Hospital de las Californias

Presidio Water System Improvements Benefit from Technical Assistance

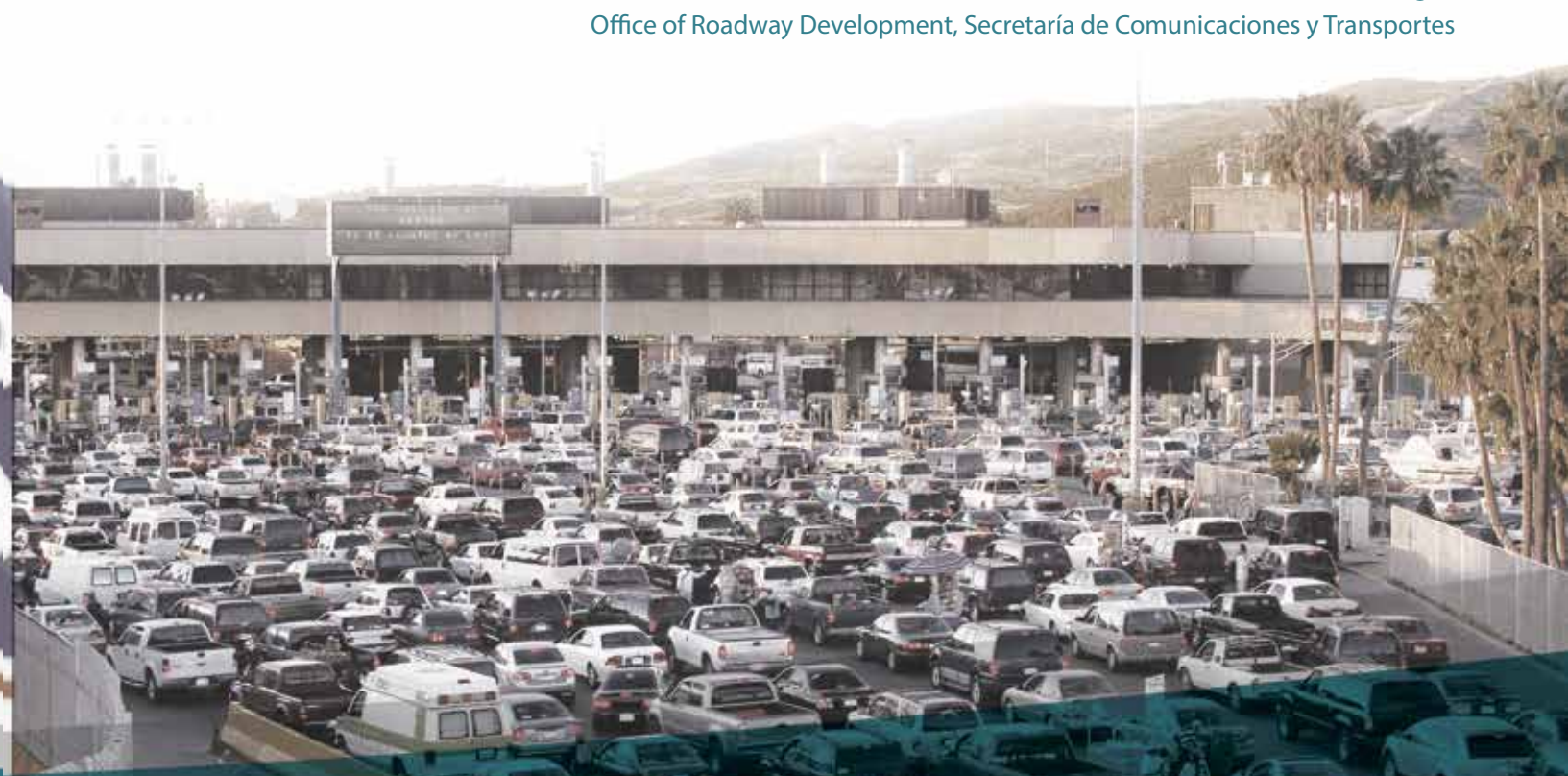
Through a PDAP technical assistance grant, an audit of the water system in Presidio, Texas revealed unknown deficiencies that impact its water service and was a significant factor in re-scoping the system improvement project currently under development. Prior to the audit, the proposed project included increasing water storage capacity. While the preliminary engineering report indicated that water storage should be adequate, the audit revealed unidentified leakage. The utility crew estimates repairing line breaks at least once a week, with most breaks occurring in high-pressure zones. Based on the water audit, the preliminary engineering report recommended creating new pressure zones throughout the city to reduce water pressure and the potential for ruptures. The water audit is also a tool that can be used to implement other improvements and develop conservation programs to minimize consumption and improve operational efficiency. The City has already begun a comprehensive meter replacement program based on the audit recommendations.

U.S.-Mexico International Crossing Study

At the request of the Mexican Government and with the full support of the U.S. Government, NADB and BECC commissioned an analysis of international port-of-entry projects on the U.S.-Mexico border within the framework of the U.S.-Mexico High-Level Economic Dialogue (HLED). The study will help the two governments map priority border crossings, review governmental agencies' processes associated with implementing ports of entry, and evaluate mechanisms for financing them. The study scope covers all existing and proposed border crossings, as well as those currently under implementation. The consortium FOA Consultores/Texas A&M Transportation Institute was contracted in June 2014 to perform the study, which has been developed in coordination with several federal agencies from both countries. In particular, NADB has been working closely with the Mexican Ministry of Communication and Transportation (SCT) through an interagency agreement, whereby each entity is contributing equally to the study's financing. The final report is expected to be delivered in April 2015.

"Given the diverse number of institutions from both sides of the border involved in developing and modernizing border crossings, it has been a challenge to keep information updated on all existing projects. This study will give us a clear picture of what each country is doing, what phase the projects are in and the financing provided for each one."

- Marco Antonio Frías Galván, Associate General Manager,
Office of Roadway Development, Secretaría de Comunicaciones y Transportes



Current and Future Outlook of Desalination

In June, NADB and BECC hosted a seminar on desalination as an alternative means of ensuring the availability of drinking water. Developed by the Latin American and Caribbean water center, Centro del Agua para América Latina y el Caribe (CDA) of the Monterrey Technological Institute (ITESM) and presented in Los Cabos, Baja California Sur, the three-day seminar provided an overview of available technologies, best practices, and recommendations for promoting and structuring projects. In addition, attendees had the opportunity to tour the Los Cabos desalination plant. The seminar was attended by 35 representatives from various water agencies and utilities, as well as technical personnel from both NADB and BECC in order to broaden their knowledge of this water supply method. The two institutions certified and financed their first desalination project in Ensenada, Baja California, and other communities are expected to develop this type of project in the near future given the arid conditions and ongoing drought in much of the region.

Border Green Infrastructure Forum

The first Border Green Infrastructure Forum: Resilience and Competitiveness for Cities of the U.S.-Mexico Border was jointly hosted by BECC, NADB and EPA on September 18-19 in Juarez, Chihuahua. The forum focused on providing training on green infrastructure strategies and approaches to officials from all three levels of government, as well as to consultants, scholars and professionals in the field. The ultimate goal is to gradually incorporate these concepts into public and private urban infrastructure projects. The forum convened about 200 professionals involved in the areas of sustainability, environment and urban development. Incorporating these green concepts can be cost-effective and beneficial for the surrounding environment and the health of local residents, as well as enhance economic development and community building.

Building Capacity in Energy Efficiency

BECC and NADB build capacity among stakeholders through training, sharing information and addressing emerging issues that will help local and state agencies implement cost saving techniques and energy saving strategies. The highest operating cost for most water utilities is energy. On a local and state level, both institutions have supported water utility operators in Arizona, Baja California, Chihuahua, Coahuila and Texas. Some of the resulting recommendations have been implemented directly by utilities and others will require further technical development.

Additionally, BECC provided hands-on training through its Energy Management Workshops, geared toward smaller utilities, which often have limited resources. In 2014, workshop sessions were held in Chihuahua, Coahuila and Texas to share alternatives available to improve, modify and streamline both technical and administrative processes and how other border cities manage water distribution and wastewater treatment systems.

On border-wide basis, BECC and NADB continue to partner with the Texas General Land Office to host the Border Energy Forum to exchange ideas and strategies for efficient and sustainable energy production along the border region. The 2014 forum held in Monterrey, NL featured key speakers such as the U.S. Ambassador to Mexico, E. Anthony Wayne, and Mexico's Ministry of Energy Undersecretary of Planning and Energy Transition, Leonardo Beltran.

"The City's wastewater treatment plant has been in operation for decades and many of its components need to be upgraded, and what is presented in these workshops can help us improve many aspects, especially because we are learning how to finance new projects."

-Domingo Cortez, Brownsville Public Utilities Board operator





INSTITUTIONAL OVERVIEW

BECC and NADB were created by the governments of the United States and Mexico in a joint effort to preserve and promote the health and welfare of border residents and their environment. BECC, located in Ciudad Juarez, Chihuahua, and NADB, located in San Antonio, Texas, constitute an innovative, binational approach to environmental infrastructure development and financing in the U.S.-Mexico border region.

Within this partnership, the two institutions work as a team, with BECC focusing on the technical and environmental aspects of project development, while NADB concentrates on project financing and oversight for project implementation. Specifically, BECC is charged with verifying the technical viability and environmental/health impacts of projects through a certification process that ensures transparency and public participation. NADB assures the financial feasibility of the projects and provides funding to public and private entities for projects certified by BECC, through loan and grant programs designed to address different needs. Both entities offer various types of technical assistance to build institutional capacity and support the development and long-term sustainability of infrastructure projects.

For the annual reports and audited financial statements of the institutions, you can go the respective websites of each institution. www.nadb.org and www.cocef.org

Board of Directors

United States

- Secretary of the Treasury*
- Secretary of State
- Administrator of the Environmental Protection Agency
- U.S. border state representative
- U.S. border resident representative

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

* Board chair, 2014



SUMMARY OF ANNUAL ACTIVITY 2014-2010

(US\$ Millions)

	2014	2013	2012	2011	2010
Project Certification					
Total number approved	16	19	19	14	8
Water ¹	10	8	8	8	6
Solid waste management	-	-	1	-	-
Air quality ²	1	1	1	3	1
Basic urban infrastructure ³	1	1	1	1	1
Clean and efficient energy ⁴	4	9	8	2	-
Estimated project costs	\$1,312.82	\$709.88	\$1,797.40	\$568.58	\$276.40
Project Implementation					
Construction start-up	11	17	5	2	9
Construction completion	20	12	12	8	18
Project Financing					
Loans					
Approvals	\$323.67	\$273.24	\$660.12	\$289.83	\$283.38
Commitments	304.32	349.88	559.12	105.91	129.01
Disbursements	254.16	214.96	501.50	80.35	171.80
NADB-funded grants⁵					
Approvals	\$0.77	\$2.18	\$0.45	\$ -	\$ -
Commitments	0.32	2.18	0.45	-	1.00
Disbursements	1.20	0.46	1.75	0.40	1.42
Border Environment Infrastructure Fund⁶					
Approvals	\$24.94	\$6.10	\$23.30	\$7.38	\$11.75
Commitments	12.05	7.66	24.22	4.90	35.31
Disbursements	14.67	17.46	11.74	16.77	23.09
Technical Assistance					
NADB					
No. of studies approved	7	5	4	8	2
Funding approved	\$0.49	\$0.57	\$0.44	\$0.89	\$0.22
BECC					
No. of studies approved	8	10	7	6	9
Funding approved	\$0.35	\$0.35	\$0.45	\$0.18	\$0.21
Project Development Assistance Program⁶					
No. of studies approved	19	15	11	17	20
Funding approved	\$1.69	\$2.36	\$1.08	\$0.85	\$1.24
Border 2012/2020^{6,7}					
No. of studies approved	29	-	9	25	-
Funding approved	\$1.49	-	\$0.44	\$1.14	-

¹ Includes drinking water, wastewater, storm drainage and water conservation projects.

² Includes street paving and other roadway improvements, public transportation and international crossings.

³ These projects consist of a mix of works from different sectors, such as water, wastewater, storm drainage and roadway improvements.

⁴ Includes solar, wind and landfill gas-to-energy projects, as well as public lighting.

⁵ Includes the Solid Waste Environment Program (SWEP), the Water Conservation Investment Fund (WCIF) and the Community Assistance Program (CAP).

⁶ Programs fully funded by the U.S. Environmental Protection Agency (EPA) and administered by NADB or BECC.

⁷ B2012/B2020 program runs on a two-year grant cycle with grants awarded in 2011 and 2014.



CREDITS

Photography:

page 3: Jonathan Alonzo
page 9: City of San Luis Río Colorado, Sonora
page 12: Courtesy of GEMEX
page 15: Courtesy of Juan Torres/El Diario de El Paso
pages 23-24: SunEd DM, LLC
page 29: Courtesy of the Government of Baja California
All other photos by BECC and NADB

Design:

The DeBerry Group

Printing:

Lopez Printing

A joint publication of the
North American Development Bank
and the Border Environment
Cooperation Commission

