

2015 ANNUAL REPORT
Border Environment Cooperation Commission

C O N T E N T

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General Manager's Message

The success of an organization is directly linked not only to its ability to efficiently perform its work, but also to its willingness to evolve and continuously improve the manner in which it delivers its services in fulfillment of its mission.

For BECC, 2015 was a year of great success, both in terms of its core work, as well as in its advancement toward full integration with its sister organization, the North American Development Bank (NADB).

In meeting its mandate to help preserve, protect and enhance the environment of the U.S.-Mexico border region, in 2015 BECC achieved the certification of 14 environmental infrastructure projects, including seven related to improved water and wastewater services, five to clean and efficient energy, one to improving basic urban infrastructure and one related to improving air quality.

Through the BECC's joint technical assistance program with NADB, almost US\$2 million in grants was approved to support the development of 35 technical studies and other project development and capacity-building activities. In addition, BECC continued to work with the U.S. Environmental Protection Agency (EPA) to advance projects under the Border 2020 U.S.-Mexico Environmental Program and the Project Development Assistance Program (PDAP). In 2015, US\$1.72 million was awarded through these programs.

During the year, BECC further refined the project closeout and impact assessment processes, aimed respectively at tracking the progress of a certified project in reaching the expected outcomes and measuring the overall results achieved from the investment in that particular project. The results of the impact assessment conducted for communities in the Valle de Juarez region of Chihuahua was published, while the assessment for Baja California projects was completed in 2015.

BECC continued to strengthen its partnerships with several government and non-governmental stakeholders to support environmental initiatives and programs in the border region. One initiative that continues to show significant potential is related to green infrastructure. To date, BECC has hosted six events featuring green infrastructure training and demonstrations reaching more than 900 participants, including 200 via webinar. These events included two pilot projects that were completed in 2015, one in the state of Sonora and one in the state of Coahuila.

Finally, BECC continued to work with NADB towards achieving the full legal and operational integration of both institutions, consistent with the resolution adopted by their Board of Directors in late 2014.

We are pleased to present the BECC's 2015 annual report, which highlights the institution's key accomplishments for the year. We hope you find the information useful.

Institutional Performance and Results Highlights (1995-2015)

US\$

From 1995 to December 31, 2015, BECC's most notable project-related accomplishments include the following:

- As of December 31, 2015, BECC has certified **257** environmental infrastructure projects - **140** located in Mexico and **117** in the United States - with a total estimated cost of approximately US\$9.181 billion.
- Of these projects which were completed, 147 are related to water and wastewater, 23 to municipal solid waste, 26 with water conservation, 31 with clean and efficient energy, 24 with air quality, five with basic urban infrastructure and one with public transport.
- NADB is participating or has participated in 218 BECC-certified projects with US\$2.59 billion in loans and grants, of which 97% has been disbursed for project implementation.
- To date, 172 projects certified by BECC and funded by NADB have been completed and are in operation, and have benefited an estimated 9.58 million border residents.

Results:

- 141 Water and Wastewater projects providing new or improved services to more than 13 million border residents with a capacity to adequately treat more than 468 million gallons per day (MGD) of wastewater discharges, equivalent to the wastewater discharge of nearly 12.8 million people.
- 23 Solid Waste projects accommodating approximately 1,550 tons/day of waste previously disposed of in open or uncontrolled sites, benefiting 2.9 million people.
- 12 Air Quality projects related to paving and urban mobility, which eliminate approximately 170,000 tons/year of PM10, caused by vehicular traffic on unpaved roadways.
- 26 Water Conservation projects estimated to save energy and to decrease water losses by approximately 330 MGD; enough to serve the average demands of some four million people.
- 29 Clean and Efficient Energy projects generating 1,761 megawatts (MW) that is anticipated to offset demands of traditional fossil-fuel based energy production, avoiding nearly 2.86 metric tons of carbon dioxide (CO₂)/year. Annual generation of 5,417 gigawatt hours (GWh) of energy from renewable sources.

Details regarding all BECC-certified projects can be found on BECC's website, www.becc.org.

Certified Projects (1995-2015)

US\$

US	117	\$3.35b	Mexico	140	\$5.8b
California	26	\$1.22b	Baja California	38	\$1.60b
Arizona	22	\$371.12m	Sonora	30	\$647.33m
New Mexico	12	\$80.95m	Chihuahua	31	\$590.90m
Texas	57	\$1.67b	Coahuila	8	\$593.71m
			Nuevo Leon	10	\$871.68m
			Tamaulipas	23	\$1.52b

Technical Assistance (1995-2015)

US\$

	PDAP (1995-2015)	BECC (1995-2014)	JTAP (2015)	Border 2020 (1995-2015)
US	\$28,482,432	\$1,884,638	\$633,730	\$4,530,247
California	\$3,438,680	\$209,917	-----	\$1,024,918
Arizona	\$6,139,100	\$316,387	\$220,000	\$1,343,172
New Mexico	\$4,520,547	\$146,705	\$120,000	\$576,515
Texas	\$14,384,105	\$1,030,930	\$293,730	\$1,584,907
Mexico	\$11,799,231	\$4,855,061	\$931,300	\$6,878,692
Baja California	\$1,812,220	\$994,327	\$231,300	\$3,068,638
Sonora	\$3,120,050	\$820,870	\$90,000	\$1,752,232
Chihuahua	\$2,250,031	\$1,101,632	\$97,343	\$935,926
Coahuila	\$852,446	\$553,150	\$340,656	\$397,715
Nuevo Leon	\$153,752	\$354,150	\$14,000	\$82,995
Tamaulipas	\$3,610,732	\$1,030,930	\$158,001	\$641,186
NADB Border			\$365,000	
Total	\$40,281,663	\$6,739,699	\$1,930,030	\$11,408,204
Overall Total				\$60,359,596



2015 Certified Projects Report

BECC and NADB were established to help address critical environmental and human health needs in the border region related to the lack of adequate environmental infrastructure.

To achieve this objective, BECC works with local, state, federal and private-sector sponsors to develop projects through a process consistent with its certification criteria, NADB financing prerequisites, and other applicable regulatory or funding requirements. This well-balanced process evaluates the environmental, technical, social and financial feasibility of the proposed infrastructure investment and seeks long-term project sustainability for the sponsor, investors and the intended beneficiaries. Once a project satisfies these elements, BECC and NADB prepare a certification and financing proposal for each project to be presented to the Board of Directors for consideration and approval.

In 2015, the Board of Directors approved 14 environmental infrastructure projects for BECC certification and NADB financing. Each of these projects is expected to achieve project-specific outcomes related to improving environmental and human health conditions.

2015 Project Overview

- **First cogeneration project to convert biogas from wastewater treatment to energy located in Ciudad Juarez, Chihuahua.**
- **First wastewater treatment system for Delicias, Chihuahua, a community of 130,900 residents.**
- **First project to address industrial emissions for a steel mill in Mexico.**

	Water/Wastewater Total Population	7 149,442		Clean and Efficient Energy Total Population	5 588,935
	Air Quality Total Population	1 216,206		Basic Urban Infrastructure Total Population	1 90,688
	US	5		Mexico	9
	Arizona	2		Baja California	1
	New Mexico	2		Chihuahua	3
	Texas	1		Coahuila	3
				Tamaulipas	2

Water/Wastewater Projects

Infrastructure reducing the risk of water-borne disease and water pollution

Water Main Replacement, Nogales, Arizona

Benefited Population: 1,178
Project Cost: US\$0.65 million
Funding Partners: NADB Community Assistance program (CAP) grant;
City of Nogales funds

Existing Condition: The existing 4" cast iron main with lead fittings and 6" asbestos-cement water distribution main on Crawford Street was installed in 1918 and has experienced frequent breaks over the last few decades, which are now occurring at an increased rate.

Anticipated Outcome: The City is installing approximately 2,982 linear feet of 8" PVC and ductile iron pipe to replace the existing pipeline. Additionally, 49 water connections and flow meters will be replaced requiring approximately 1,076 linear feet of service line. The replacement of the pipeline will improve service, prevent water losses and reduce maintenance costs, as well as costs of replacing asphalt.

Measurement:

- Provide access to safe and reliable drinking water services, directly benefiting 330 residential connections
- Reduce service interruptions and water loss

Wastewater Treatment Plant (WWTP) Improvements, Willcox, Arizona

Benefited Population: 3,900
Project Cost: US\$11.33 million
Funding Partners: EPA-Border Environment Infrastructure Fund (BEIF) grant,
US Department of Agriculture-Rural Development grant and loan

Existing Condition: Willcox was issued a Consent Order from Arizona Department of Environmental Quality (ADEQ) for being in violation of state discharge permits for fecal coliforms, pH, total suspended solids and biochemical oxygen demand. The WWTP effluent is discharged into Cochise Lake, an impaired water body, and a public golf course.

Anticipated Outcome: Upgrade the WWTP from a lagoon system to an oxidation ditch facility to meet Willcox's current needs. The WWTP effluent will meet reclaimed water standards as provided by ADEQ.

Measurement:

- Improved wastewater effluent quality
- Improved wastewater treatment service for 100% of the system's existing wastewater connections, including 1,032 residential connections
- A wastewater treatment facility in full compliance with all applicable laws, rules and regulations

Water System Improvements, Mesilla, New Mexico

Benefited Population: 1,450
Project Cost: US\$0.76 million
Funding Partners: New Mexico Environment Department grant,
EPA-BEIF grant

Existing Condition: Residents along Valle Grande, Los Arenales, and off of Snow Road in Mesilla currently rely on private wells that do not produce sufficient water supply during periods of extended drought. The new water lines will also create new loops, and eliminate the need to flush stagnant water from the dead ends.

Anticipated Outcome: This project will provide 12 residences with access to safe and reliable drinking water, and improve water quality by eliminating stagnant water.

Measurement:

- Provide first-time water connections to 12 residences

Camino Real Regional Authority Wastewater Treatment Project, Sunland Park, New Mexico

Benefited Population: 6,438

Project Cost: US\$11.70 million

Funding Partners: State of New Mexico grant/EPA- BEIF grant

Existing Condition: The Camino Real Rural Authority's existing North WWTP is under an EPA administrative order. The plant is unable to comply with its discharge permit requirements, due to age, capacity, and high organic loading in the of influent. Currently wastewater from the North WWTP is pumped to the South WWTP, which regularly runs at full capacity and is also at risk of failure.

Anticipated Outcome: Eliminate the risks of discharges of untreated or inadequately treated wastewater, increase wastewater treatment capacity, and bring the utility into full regulatory compliance for wastewater discharges.

Measurement:

- Increase treatment capacity by 1 MGD to the Utility's capacity, and improve wastewater effluent quality to comply with current permit requirements, benefiting 1,981 residential connections.

Wastewater Collection System Project, Brownsville, Texas

Benefited Population: 2,630

Project Cost: US\$29.74 million

Funding Partners: Texas Water Development Board grant & loan, Brownsville Public Utility Board equity, EPA-BEIF grant

Existing Condition: Residents within the project area currently use septic tank/drain field systems with a few dwellings being served by other types of on-site systems. Due to population density, small lot sizes, high water tables, and poor storm water drainage, the majority of these systems are not in compliance with regulatory requirements and a health hazard likely exists in the project area, particularly during wet weather.

Anticipated Outcome: Provide access to and use of first-time wastewater services in unserved areas and eliminate exposure to untreated or inadequately treated wastewater discharges by connecting the homes to new wastewater collection infrastructure, contributing to the reduction of water pollution and the risk of waterborne diseases.

Measurement:

- Provide access to wastewater collection and treatment services for 685 homes, of which up to 465 new residential connections will be installed through EPA-BEIF funding
- Eliminate untreated or inadequately treated wastewater discharges of approximately 0.21 MGD

Wastewater Treatment Infrastructure, Delicias, Chihuahua

Benefited Population: 130,962

Project Cost: US\$17.17 million

Funding Partners: NADB loan, municipal and state funds, Mexico's National Infrastructure Fund (Fondo Nacional de Infraestructura (FONADIN), equity

Existing Condition: The City of Delicias does not have wastewater treatment facilities, which results in the discharge of untreated wastewater in receiving water bodies.

Anticipated Outcome: The installation of wastewater treatment facilities, including a treatment plant, a lift station, a force main and a cogeneration facility to provide a portion of the energy required by the new facilities.

Measurement:

- Provide 8.4 MGD of wastewater treatment capacity
- Eliminate 7.3 MGD of untreated or inadequately treated wastewater discharges
- Install 763 kilowatt (kW) of renewable energy generation capacity
- Displace approximately 1,461 metric tons/year of carbon dioxide equivalent (CO₂e), 0.16 metric tons/year of sulfur dioxide (SO₂), and 2.68 metric tons/year of nitrogen oxides (NO_x)

Rehabilitation of the Wastewater System, Sabinas, Coahuila

- Benefited Population:** 3,027
- Project Cost:** US\$0.73 million
- Funding Partners:** Municipality of Sabinas, through the local water utility, Sistema Municipal de Aguas y Saneamiento (SIMAS); NADB CAP grant
- Existing Condition:** The wastewater collection system in the downtown area of the community was built in 1954, and has exceeded its useful life. Several sections of sewer pipeline are completely deteriorated. Consequently, collapsing lines and sewage spills are a frequent occurrence, posing an immediate environmental and health threat for local residents.
- Anticipated Outcome:** Reduce the risk of exposure to untreated wastewater discharges, as well as eliminate septic conditions caused by aged and deteriorated infrastructure. Improved services will directly impact 462 wastewater system connections.
- Measurement:**
- Improve wastewater service to 462 connections

Air Quality Project

Improve air quality, reduce risks of respiratory diseases, and reduce demand on fossil fuels

Particle Emissions Control System for a Steel Mill, Monclova, Coahuila

- Benefited Population:** 216,206
- Project Cost:** Reserved information
- Funding Partners:** Equity, NADB loan
- Existing Condition:** The production processes in the steel and iron industry are a significant source of total suspended particulate that must be controlled in order to comply with the environmental regulations. The control of particulate matter in the production areas requires cost-effective systems with high collection efficiency, such as the baghouses.
- Anticipated Outcome:** Reduce harmful particulate emissions released to the atmosphere in the basic oxygen furnace 2 (BOF2) process, improving the air quality in the facilities and surrounding areas.
- Measurement:**
- Installation of an emission control system with a collection capacity of up to 29,333 cubic meters (m³)/minute of particulate matter
 - Reduction of approximately 30,070 tons/year of particulate matter in the air
 - Stack exhaust concentration of less than 60 milligrams/m³ of particulate matter



Clean and Efficient Energy Projects



In 2015, five projects in this sector were approved for certification and financing: three wind farms with the capacity to generate nearly 300 MW, thereby avoiding more than 500,000 tons/year of greenhouse gases; the first utility-scale solar park in Mexico; and a cogeneration project at the South Wastewater Treatment Plant in Juarez Chihuahua, which is expected to supply between 40-50 % of the electricity required to operate the plant.

EDPR Wind Energy, General Cepeda, Coahuila

Benefited Population: 384,147
Project Cost: Reserved Information
Funding Partners: NADB loan, commercial & other development banks, equity

Measurement:

- Installation of 199.5 MW of new renewable energy generation capacity
- Approximately 763 GWh of electricity during the first year of operation, and an expected displacement of approximately 9.6 million metric tons/year of CO₂e

La Mesa Wind Energy, Güemez, Tamaulipas

Benefited Population: 91,128
Project Cost: Reserved Information
Funding Partners: Equity, other banks, NADB loan

Measurement:

- Installation of 49.5 MW of new renewable energy generation capacity
- Generation of approximately 181 GWh during the first year of operation
- Displacement of more than 71,165 metric tons/year of CO₂, 0.4 metric ton/year of SO₂ and 248 metric tons/year of NOx

Victoria Wind Energy, Güemez, Tamaulipas

Benefited Population: 92,639
Project Cost: Reserved Information
Funding Partners: Equity, other banks, NADB loan

Measurement:

- Installation of 49.5 MW of new renewable energy generation capacity
- Generation of approximately 184 GWh during the first year of operation
- Displacement of more than 72,345 metric tons/year of CO₂, 0.4 metric ton/year of SO₂ and 252 metric tons/year of NOx

Renewable Energy Projects Anticipated Outcomes

These projects create an opportunity to generate electricity without the atmospheric emissions produced by fossil-fuel-based plants. Increasing the installed capacity of renewable energy resources will reduce the demand on traditional fossil-fuel-based energy production, thus helping to displace the greenhouse gas emissions and other pollutants generated by fossil fuels.

Los Santos Solar I, Ahumada, Chihuahua

Benefited Population: 21,016
Project Cost: Reserved Information
Funding Partners: Equity, NADB Loan,
and other lenders

Impact: The energy generated will be purchased by private off-takers pursuant to two or more long-term power purchase agreements executed with the special purpose company created to carry out the Project.

Anticipated Outcome: The Project will increase installed capacity of renewable energy resources in the region.

Measurement:

- Installation of 13.7 MWAC of new renewable energy generation capacity, producing approximately 40.1 GWh of electricity during the first year of operation
- Displacement of approximately 16,509 metric tons/year of CO₂, 0.1 metric tons/year of SO₂ and 57.6 metric tons/year of NOx



South Wastewater Treatment Plant Cogeneration and Improvements, Cd. Juarez, Chihuahua

Project Cost: US\$4.11 million
Funding Partners: NADB loan, other lenders

Impact: Biogas generated from the sludge digestion process is currently captured and stored on-site to generate heat for the digestion process or burned off in a flare. After the digestion process, biosolids are transported to a landfill for disposal. The project consists of the construction of a cogeneration facility, as well as the acquisition of equipment and improvements to the sludge management system.

Anticipated Outcome: In addition to the typical benefits achieved by renewable energy projects, the project will also improve sludge and biosolid management by reducing the volume of waste generated for transportation and final disposal.

Measurement:

- Installation of 1.35 MW of new renewable energy generation capacity
- Generation of approximately 7.43 GWh of electricity during the first year of operation and the displacement of approximately 11,563 metric tons/year of CO₂e, 3.72 metric tons/year of SO₂, and 12.4 metric tons/year of NOx
- Reduction in the volume of sludge, from 93,258 m³/year to 79,934 m³/year

Basic Urban Infrastructure Project

Encompassing various environmental sectors, implementation of these projects helps reduce water, soil and air pollution that affect the health and quality of life of local residents.



Basic Urban Infrastructure Project, Playas de Rosarito, Baja California

Benefited Population: 90,688

Project Cost: US\$5.10 million

Funding Partners: Federal funds, NADB loan

Existing Condition: Currently, the city has high-traffic streets in poor condition, dirt roads in residential neighborhoods and minimum connectivity to main roads. There is also aging water and wastewater infrastructure, an inefficient street lighting system and insufficient operation and maintenance equipment to support the urban infrastructure.

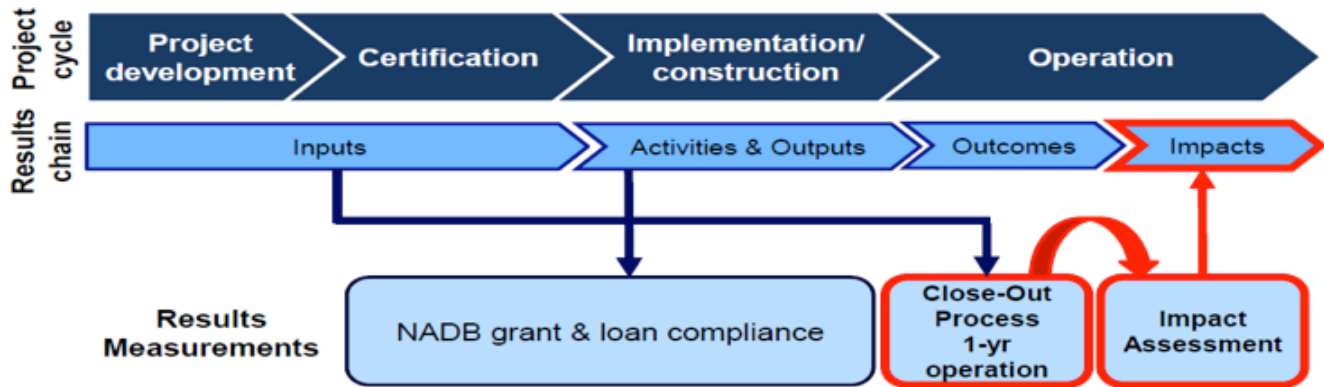
Anticipated Outcome: Promote efficient urban mobility by increasing and improving street paving coverage and roadway infrastructure in the city, as well as improve water distribution and wastewater collection systems and the energy efficiency of the public lighting system.

Measurement:

- First-time paving of approximately 34,518 square meters of dirt roads, rehabilitation of approximately 39,676 square meters of paved roads in poor conditions, and other works to improve and maintain sufficient mobility which will contribute to the reduction of 32.8 metric tons/year of PM10, 77.43 kilogram (kg)/year of volatile organic compounds (VOC), 491 kg/year of carbon monoxide (CO) and 157.54 kg/years of NOx
- Replacement of approximately 627 meters of water pipelines and 11 water hook-ups, ensuring reliable water service
- Replacement of approximately 412 meters of sewer lines and 30 wastewater connections, reducing the likelihood of sewer breaks and spills, and the risk of exposure to untreated wastewater discharges
- Replacement of street lighting equipment will reduce electricity consumption by approximately 64,014 kilowatt hour (kWh)/year and displace 33 metric tons/year of CO₂ and 0.05 metric tons/year of NOx

Results Measurements

BECC and NADB have implemented a results measurement framework as a systematic approach for establishing, monitoring and documenting results related to the investments in environmental infrastructure projects. The process includes development of a results matrix by BECC and NADB, in consultation with the project sponsor, which identifies the project objective, anticipated outcomes and related indicators, outputs as well as inputs and implementation activities.



Close-Out Process

As part of post-certification activities, a close-out assessment is performed once construction is completed to determine if the project meets the results and expectations established at the time of project certification and financing approval. These efforts are conducted between 6-12 months after the project has initiated operations. The Close-Out Process provides a review of physical facilities constructed, facility performance and achievement of objectives, as reflected in the results measurement matrix. The project sponsor provides the BECC and NADB with all information, documents and input necessary.

Information could include infrastructure performance (i.e., connections, installed capacity, traffic counts), regulatory compliance, and financial statements.

2015 Total Close-out Reports:

BEIF 12

Non BEIF 6

Overall Close-out Reports:

BEIF 38

Non BEIF 14



Impact Assessments

In 2015, BECC published a retrospective analysis to assess the impact of wastewater infrastructure in the Valle de Juarez region. This effort was partially funded by the Pan-American Health Organization (PAHO) and by EPA through the Border 2012 Program. The objective was to complement institutional assessment from a vision based on implementation and results, which not only assesses whether the projects were implemented according to the anticipated outcomes, but also evaluates whether the expected results had met the fundamental objectives.

Dr. Porfirio Parra

	2000 Initial Environmental Condition	2015 Impacts Projects By BECC-NADB
Population connected to the wastewater collection system	78%	95%
-Latrines	5%	0%
-Cesspools	14%	4%
Population with wastewater treatment	0%	100%
Flow of untreated raw wastewater liters per second (lps)	4	0
Discharge points of raw wastewater adjacent to the community	9	Eliminated
Homes exposed to raw sewage in adjacent agriculture drain	80	0

Outputs	
Wastewater collection lines (km)	11.4
137,000 gallons per day (GPD)/6 lps WWTP	1
Outcomes	
Access to wastewater collection infrastructure	100%
Access to wastewater treatment infrastructure	100%

Guadalupe

	2000 Initial Environmental Conditions	2015 Impacts Projects by BECC-NADB
Population connected to the wastewater collection system	49%	88%
-Latrines	26%	8%
-Cesspools	13%	13%
Population with wastewater treatment	0%	100%
Flow of untreated raw wastewater (lps)	4	0
Discharge points of raw wastewater adjacent to the community	4	Eliminated
Homes exposed to raw sewage in adjacent agriculture drain	30	0

Outputs	
Wastewater collection lines (km)	37.0
410,000 GPD/18 lps WWTP	1
Outcomes	
Access to wastewater collection infrastructure	100%
Access to wastewater treatment infrastructure	100%

Following the construction and completion of the BECC-certified projects, the four communities surveyed demonstrated that at least 88% of the residents have connected their homes to the wastewater system, and therefore receive compliant wastewater treatment. Consequently, cesspools, latrines and raw sewage discharge points have been eradicated, eliminating the risk of exposure during the rainy season.

The Valle de Juarez Impact Assessment focused on:

- Four communities in the Valle de Juarez: Dr. Porfirio Parra, Guadalupe, Praxedis G. Guerrero and El Porvenir
- All wastewater projects certified in 2007
- Construction completed between July 2009 and June 2010

Praxedis G. Guerrero

	2000 Initial Environmental Condition	2015 Impacts Projects by BECC-NADB
Population connected to the wastewater collection system	70%	95%
-Latrines	11%	0%
-Cesspools	19%	3%
Population with wastewater treatment	0%	100%
Flow of untreated raw wastewater (lps)	8	0
Discharge points of raw wastewater adjacent to the community	2	Eliminated
Residents subject to exposure to raw sewage during rainy season	100%	Eliminated

Outputs	
Wastewater collection lines (km)	22.3
340,000 GPD/15 lps WWTP	1
Outcomes	
Access to wastewater collection infrastructure	100%
Access to wastewater treatment infrastructure	100%



El Porvenir

	2000 Initial Environmental Condition	2015 Impacts Projects by BECC-NADB
Population connected to the wastewater collection system	15%	97%
-Latrines	22%	3%
-Cesspools	54%	0%
Population with wastewater treatment	0%	100%
Flow of untreated raw wastewater (lps)	10	0
Discharge points of raw wastewater adjacent to the community	1	Eliminated
Residents subject to exposure to raw sewage during rainy season	100%	Eliminated

Outputs	
Wastewater collection lines (km)	27.5
340,000 GPD/15 lps WWTP	1
Outputs	
Access to wastewater collection infrastructure	100%
Access to wastewater treatment infrastructure	100%



2015 Technical Assistance

BECC and NADB work closely with project sponsors and other funding agencies to achieve the greatest level of project development possible prior to certification, as well as to provide ongoing support during project execution.

To that end, both institutions offer technical assistance through the Joint Technical Assistance Program (JTAP) as well as through EPA's PDAP and Border 2020 Program.

Through JTAP, BECC and NADB established a set of strategic objectives and topics that technical assistance should focus on while coordinating efforts for maximum results and greater outreach. JTAP supports three key areas:

1. Project development studies directly linked to a specific project and intended to help the project achieve certification within a year or help develop a specific project within three years after completion of the study;
2. Sector studies aimed at identifying environmental infrastructure needs, promoting sound public policy or generating knowledge about a new sector or technology for example through pilot projects; and
3. Institutional capacity-building through training seminars.

PDAP grant funds are available for public water and wastewater infrastructure projects identified through a program-specific prioritization process. BECC, in close coordination with EPA and NADB, conducts a public and transparent process to handle the application, evaluation and ranking of projects applying for technical assistance through PDAP and construction funding through the BEIF administered by NADB.

2015 Activity		
Fund	Communities	Amount (US\$ million)
JTAP	35	\$1.93
PDAP	7	\$1.03

2015 JTAP Grants By Type	
Project Development	15
Capacity Building	17
Sector Studies	3

2015 PDAP Grants By Project Type	
Water	1
Wastewater	1
Water/Wastewater	5

Border 2020: Juarez Scrap Tire Collection Center A Successful Example of Bi-national Cooperation

For a long time, Cd. Juarez was the city with the largest scrap tire stockpile in Mexico. In 2004, it was estimated that more than six million used tires had been dumped, causing a permanent risk of fire and death. Through bi-national environmental cooperation supported by EPA and Mexico's Ministry of the Environment and Natural Resources (SEMARNAT) through the U.S.-Mexico Border 2012 and Border 2020 programs, in addition to the participation and support of BECC, NADB, and Grupo Cementos de Chihuahua (GCC), among other organizations, the stockpile has been reduced to less than one million.

This site is virtually clean as a result of a coordinated effort by the Municipality of Juarez and other stakeholders.





Border 2020

Border 2020: U.S.-Mexico Environmental Program is a collaborative effort of the United States and Mexico to improve the environment and protect the health of the millions of residents living in the region served by this

program which is defined as 100 km on each side of the border. The bi-national program focuses on cleaning the air, providing safe drinking water, reducing the risk of exposure to hazardous waste, and ensuring emergency preparedness along the U.S.-Mexico border. To support EPA and SEMARNAT in their efforts to achieve results, BECC provides its services to facilitate stakeholder meetings, as well as to identify, contract, and manage projects. In 2015, EPA authorized approximately US\$713,799 in grant funding for 14 BECC-managed Border 2020 projects. As of December 31, 2015, EPA had authorized a total of 269 projects, of which 220 projects have been completed, 27 were canceled and 22 are under development.

Projects selected for the Border 2020: US-Mexico Environmental Program are focused on five objectives:

Goal 1: Reduce Air Pollution

Goal 2: Improve Access to Clean and Safe Water

Goal 3: Promote Materials Management, Waste Management, and Clean Sites

Goal 4: Enhance Joint Preparedness for Environmental Response

Goal 5: Enhance Compliance Assurance and Environmental Stewardship

In 2015, EPA authorized approximately US\$713,799 in grant funding for the following 14 BECC-managed B2020 projects:

California

Goal 1

- *Providing Environmental Health Information to Healthcare Providers along the Region 9 U.S.-Mexico Border*

Goal 4

- *Imperial Valley Child Asthma Program*

- *Environmental Health and Asthma Awareness in Low-Income Housing Communities of Imperial County (El Centro, Calexico and Brawley)*

Arizona

Goal 4

- *HAZMAT Emergency Response Training Institute Pilot Program*

Goal 5

- *Evaluation of the Environmental Health Status along the Arizona-Sonora Border*

- *Region 9 Toxic Release Inventory RETC Fact Sheets*

Texas

Goal 4

- *Hazardous Railcar Leak Mitigation El Paso/Juarez/Dona Ana Region*

- *McAllen-Mission-Pharr, TX/Reynosa, TAMPS Hazards in Transportation Bi-national Training and Exercise*

Baja California

Goal 3

- *Baseline study and market analysis for e-waste in the Baja California Region*

- *Ocean Friendly Restaurants Campaign project, Tijuana, BC*

- *Pilot program for Solid Waste Composting in Tijuana, BC*

Sonora

Goal 1

- *Air Quality Improvement Management Program for Nogales, Sonora*

Goal 3

- *Electronic waste management in laboratories in Nogales, Sonora*

Fundamental Strategy: Green Infrastructure

Strengthening local capacity in Nogales, Sonora to integrate green infrastructure for sediment control

The Municipality of Juarez had been trying to solve this problem for several years, including a program to transfer 100,000 scrap tires to a cement plant in Colima that was stopped due to the complexity of the process.

However, other proposals were implemented that have helped reduce the stockpile:

- Co-processing at the GCC cement plant in Samalayuca - The cement plant has processed about 10 million used tires in the last 11 years. Between 2004 and 2008, Border 2012 provided more than US\$217,000 to support the transfer of scrap tires.

- Tire recycling by pulverization - Two scrap tire grinding and pulverization facilities were established at the Juarez landfill.

- Shredding to dispose of unusable tires and tire fragments - Installing a shredding machine that will facilitate the transfer of shredded tires to a cement facility owned by the firm Holcim de Mexico. This system is expected to leave the landfill completely clean of scrap tires within a 12-month period.

- Awareness programs - The "Recyart" program reuses tires as art and educational supplies and shows students the negative impacts of failing to properly dispose of scrap tires, while stimulating their creativity and challenging them to give an innovative use to this raw material.

2015 Stakeholder Collaboration

To continue supporting border communities, BECC works on building relationships and partnerships with stakeholders in federal, state and local agencies, international organizations, academia, and the private and public sectors. These associations have resulted in environmental initiatives, greater project and program coordination, and consistent information exchange and strategy development that have created a positive impact for communities.

Supporting Climate Strategies

United States Agency for International Development (USAID)
State of Baja California
State of Chihuahua
State of Coahuila
State of Tamaulipas
Latin America Regional Climate Initiative (LARCI)/Climate Works Foundation
Colegio de la Frontera Norte (COLEF)
With support from USAID, LARCI and COLEF, BECC continued to work with the Mexican border states of Baja California, Chihuahua, Coahuila and Tamaulipas in developing state climate action plans (SCAP).

USAID approved funding from its Mexico Low Emissions Development Program (MLED) to match BECC funding for development of Phase 2 of the SCAP for Baja California and Coahuila, and agreed to support the identification of specific projects related to climate change mitigation based on those plans. Phase 2 includes socioeconomic micro and macro analyses of mitigation of public policies as well as the quantification of reduction and costs, and initial savings of Greenhouse Gases Inventory among others.

In 2015, BECC and USAID presented the Phase 2 scope and results, which will help identify future investments, to the Governor of Baja California. BECC also completed the mitigation public policies quantification options for the State of Coahuila, with the microeconomic analysis funded through USAID and the macro analysis supported by COLEF.

BECC contracted COLEF to finalize Phase 2 of the SCAP for the State of Chihuahua, which involved the quantification of public policies using an econometric model developed specifically for conditions in the Mexican border states. This effort was co-funded by the Climate Works Foundation, through its Latin America Regional Climate Initiative. The study was completed in December 2015.

Also completed in 2015 was Phase 1 of the SCAP for the State of Tamaulipas, which identified 25 mitigation public policies and prioritized public policies for further quantification, and organized local capacities for Advisory and Technical Groups.

Reducing e-waste in Baja California

Multilateral Investment Fund (MIF)/Inter-American Development Bank (IDB)
EPA Border 2020
In 2015, BECC began to develop a sustainable e-waste management and recycling system in Mexicali, Baja California under the framework of a cooperative agreement with MIF administered by the IDB. The Massachusetts Institute of Technology (MIT), SEMARNAT, EPA, the Baja California Ministry of Environmental Protection and the Universidad Autónoma de Baja California (UABC) also collaborated with this initiative, which is intended to promote the safe and efficient recycling of used electronic devices by training around 60 micro-businesses in the e-waste management industry to serve as collection points for workers in the field. The total project cost is estimated at US\$790,000, with IDB contributing around US\$462,000 and EPA, through the Border 2020 Program, up to US\$100,000. On June 24, 2015 BECC launched the comprehensive Waste Electric and Electronic Equipment (WEEE) management project for this municipality.

Improving energy efficiency in Coahuila

KfW Bankengruppe
GITEC Consult GmbH (GITEC)
Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, México (GIZ)
Under the framework of the US\$50 million line of credit from the German development bank, KfW, to NADB for water and wastewater projects in Mexico, BECC received funding from KfW for accompanying measures, including program marketing, climate screening of projects and results measurement. In 2015, through this agreement, BECC and KfW worked with GITEC to assist utilities in the State of Coahuila to implement or improve energy efficiency measures.

In December, GITEC initiated water audits under the Coahuila Energy Efficiency Network, which includes 14 water utilities, conducting field visits and collecting data from each participant. The objective is to assist the participating utilities in setting up an energy efficiency education network and implementing several measures to reduce the energy costs associated with the operation of their facilities. In addition, BECC executed a cooperative agreement with GIZ, a non-profit corporation funded by the German government, to provide technical assistance to Coahuila municipalities for activities related to sustainable development and environmental awareness.



"This is a priority activity for us, as it will allow us to see, in the short or medium term, the benefits of cost savings realized as a result of the appropriate management of our systems and help us invest in other energy efficient methods to continue improving our quality and enhancing our technology."

- Juan Carlos Ayub
Comisión Estatal de Agua y Saneamiento (CEAS)
General Director

2015 Institutional Capacity Building

BECC is focused on developing and fostering collaborations and partnerships by facilitating involvement in capacity-building initiatives and working to identify potential project opportunities. In 2015, BECC conducted nine workshops and training seminars throughout the U.S.-Mexico border. Among the year's events were the XXII Border Energy Forum held in San Diego and the Green Infrastructure Forum and workshops in Tucson, Arizona, San Luis Rio Colorado, Sonora and Ramos Arizpe, Coahuila. BECC's Green Infrastructure Initiative continued to build capacities among local authorities and private consultants, while helping cities develop projects that contribute to the environmental regeneration of public spaces, improve the urban landscape and reinstate native flora.



Border Green Infrastructure Forum II - Tucson, Arizona

Participants 200 and 113 via webinar

On May 20-21, BECC in coordination with NADB and EPA, hosted a two-day forum at the University of Arizona. The main purpose of the event was to provide training to municipal government officials, consultants, and professionals interested in green infrastructure strategies, technologies and approaches, and show them how to gradually incorporate these concepts into public and private urban infrastructure projects. With funding support from EPA's Border 2020 Program, the forum consisted of three panel discussions led by experts on localized flood control, legal and regulatory factors, and road design, including permeable paving and sidewalks. A portion of the forum included a tour of Tucson's neighborhoods that featured green infrastructure elements — a parking lot with permeable paving, an urban development and the large-scale Kino Basin environmental restoration project.

Green Infrastructure Demonstration Project- San Luis Rio Colorado, Sonora

Participants: 45

On September 9 -11, BECC and NADB, in coordination with the City of San Luis Rio Colorado, Sonora, launched a Green Infrastructure Demonstration Project. The volunteer work management exercise provided training for a pilot project using native plants on a 500 foot-long median along a local boulevard. Training was provided the first day to municipal officials, professionals, high school and university students, and members of the community, regarding the incorporation of green infrastructure components in existing urban infrastructure through the implementation of a project as a case study. This project is intended to demonstrate that rainwater harvesting in arid regions, such as the selected area, ensures the continuity of naturally occurring ecological processes and directly improves the quality of life of area residents.



Green Infrastructure Training and Demonstration Project - Ramos Arizpe, Coahuila

Participants: 73

On November 9-10, BECC and NADB, in coordination with the City of Ramos Arizpe, Coahuila, and the state's Ministry of the Environment (SEMA), launched the second Green Infrastructure Demonstration Project, which included training on passive rainwater harvesting systems and the importance of native vegetation for restoring local ecosystems and retaining storm water. The workshop was held in Saltillo for environmental and public works officials from 25 municipalities in Coahuila, as well as participants from Nuevo Leon who are involved in urban infrastructure. During the second day, the Ramos Arizpe Alameda Park was planted with native species, such as mesquite, acacia/vinorama, huisache, and cacti. This effort was intended to demonstrate that rainwater harvesting in arid regions ensures the continuity of ecological processes that take place naturally. With the passage of time and the rainwater collected, these plants will continue to grow without needing watering from city and will also prevent water runoff and thus street flooding, as these green areas will soak up more than 150,000 liters of water.



Bi-national Mandate and Structure

BECC-NADB Board of Directors

- U.S. Secretary of the Treasury
- U.S. Secretary of State
- U.S. Environmental Protection Agency
- U.S. Border States Representative
- U.S. Border Resident Representative
- Mexico Secretary of Finance and Public Credit
- Mexico Secretary of Foreign Relations
- Mexico Secretary of the Environment and Natural Resources
- Mexican Border States Representative
- Mexican Border Resident Representative



BECC, headquartered in Cd. Juarez, Chihuahua, Mexico, is a bi-national institution created in 1993 through an agreement between the Governments of the United States and Mexico.

Together with its sister institution NADB, established by the same agreement and headquartered in San Antonio, Texas, BECC is charged with helping improve the environmental conditions of the U.S.-Mexico border region in order to advance the well-being of residents in both nations. The mandate and the specific functions of BECC and NADB are defined in the agreement between the two governments (the "Charter"), as amended in August 2004.

BECC works in close coordination with NADB and other border stakeholders, including federal, state, and local agencies, the private-sector and the general public, to identify, develop, certify and implement environmental infrastructure projects primarily in six key sectors: water, waste management, industrial/hazardous waste, air quality, clean and renewable energy and energy efficiency. BECC focuses on the technical, environmental, and social aspects of project development, while NADB concentrates on project financing and oversight for project implementation. Both entities offer various types of technical assistance to support the development and long-term sustainability of these projects.

The Charter also establishes a single, ten-member Board of Directors to govern the two institutions. The bi-national Board is comprised of three representatives from each government, a representative of a border state from each country, and a representative of the general public who resides in the border region from each country.

(L to R) U.S. Border Public Representative Denise Moreno Ducheny, U.S. Border States Representative Texas State Senator Jose Rodriguez, from U.S. Environmental Protection Agency Randy Hill, from the U.S. Department of State Sue Saario, from the U.S. Department of Treasury Charles Moravec, Board Chair and Head of the International Affairs Unit at Mexico's Ministry of Finance Maria de los Angeles Gonzalez, from Mexico's Ministry of Exterior Relations Mauricio Ibarra Ponce de Leon, from Mexico's Ministry of Environment and Natural Resources Armando Yanez, Homero Soto Vargas in representation of the Mexican Border States Representative C. P. Marcela Andrade Martinez, BECC General Manager Maria Elena Giner and NADB Managing Director Geronimo Gutierrez at the December 2015 Board of Directors Public Meeting in San Antonio, Texas.

Budget and Financial Statements

Based on its charter, BECC's operating budget is funded by contributions from Mexico, through SEMARNAT, and from the United States, through the Department of State.

In addition to its operating budget, BECC manages the PDAP, which is funded by EPA's U.S.-Mexico Border Program, as well as several environmental management initiatives funded by EPA through the Border 2012 and Border 2020 Programs. To offset the resources required for managing these important border programs, EPA provides an administrative subsidy to BECC, which supplements its operating budget.

Seventy-two percent of BECC's funds are allocated to productive activities developed under the four operating programs, with significant emphasis placed on the Technical Assistance and Certification Programs, which receive 57% of the funds. In contrast, BECC's general support and performance improvement activities require 28% of the total funding.

The annual operating budget is developed by BECC administration and reviewed and approved by the Board of Directors. For fiscal year 2015, the Board authorized a budget of US\$5.67 million, which included US\$4.87 million to support administrative expenses and US\$750,000 for JTAP. The operating budget was subsidized by EPA funds, with US\$960,000 to offset expenses related to administering PDAP and nearly US\$270,000 for Border 2012 and Border 2020. Additionally, during 2015, BECC expended US\$1.25 million of EPA funds through PDAP and US\$785,000 through Border 2012 and Border 2020 grants to support projects, technical studies, and related activities.

Audited Financial Reports

BECC's consolidated financial statements as of December 31, 2015, were audited by the accounting firm of KPMG Cárdenas Dosal, S.C. in conformity with generally accepted auditing standards in Mexico. A summary of the financial statements is presented on the next page. A copy of the auditor's report with the consolidated financial statements and accompanying notes is available at www.becc.org.

Under the direction of the joint BECC-NADB Board of Directors, day-to-day operations at BECC are overseen by an Executive Team, which consists of a General Manager and four directors. BECC staff is organized into four primary work groups or directorates charged with facilitating projects, implementing programs and coordinating initiatives related to its mission. The multidisciplinary talents within each group allow for intra- and inter-directorate teams, resulting in effective synergies for responding to new demands posed by emerging environmental issues, such as mitigating climate change and developing sustainable energy resources.

BECC Management

Maria Elena Giner, P.E.

General Manager

BECC Directors

Renata Manning-Gbogbo

Projects

Mario Vazquez

Environmental Programs

Gloria Melendez

Administrative

Donald Hobbs

General Counsel

Statement of Financial Position

As of December 31, 2015 and 2014 (US\$)

Assets	2015	2014
Current Assets		
Cash and cash equivalents	\$ 5,334,912	3,518,246
Recoverable value-added tax	72,930	33,519
Other accounts receivable	17,867	11,151
Prepaid expenses	3,135	9,912
Contributions receivable	<u>2,052,773</u>	<u>4,742,245</u>
Total Current Assets	7,481,617	8,315,073
Contributions receivable	6,910,002	7,111,562
Machinery, furniture and equipment, net	95,403	155,545
Intangible assets	<u>78,201</u>	<u>138,003</u>
	<u>\$14,565,223</u>	<u>\$15,720,183</u>
Liabilities and Fund Balance		
Current Liabilities:		
Accrued expenses	<u>\$2,464,485</u>	<u>445,527</u>
Total current liabilities	2,464,485	445,527
Employee benefits	<u>19,721</u>	<u>19,721</u>
Total liabilities	<u>2,484,206</u>	<u>465,248</u>
Fund balance:		
Unrestricted fund balance	<u>12,081,017</u>	<u>15,254,935</u>
Total fund balance	12,081,017	15,254,935
Commitment and contingent liabilities	-----	-----
	<u>\$14,565,223</u>	<u>\$15,720,183</u>

Statement of Activities

Year ended December 31, 2015 and 2014 (US\$)

Changes in unrestricted fund balance:		
Contributions - U.S. Department of State	\$ 2,373,000	2,386,000
Contributions - Mexico - Secretariat of Environment and Natural Resources	1,792,650	1,793,750
Contributions - U.S. Environmental Protection Agency	647,252	785,500
Contributions - North American Development Bank	<u>725,000</u>	<u>600,000</u>
	<u>5,537,902</u>	<u>5,565,250</u>
Administrative expenses and project related costs:		
Salaries and benefits	4,161,446	4,034,768
Travel and transportation expenses	378,064	401,565
Public events	149,729	305,380
Technical assistance and fees	2,879,475	3,500,369
Other expenses	<u>1,154,019</u>	<u>1,087,205</u>
	<u>8,722,733</u>	<u>9,329,287</u>
Interest income, net	<u>10,913</u>	<u>13,158</u>
Decrease in unrestricted fund balance	(3,173,918)	(3,750,879)
Unrestricted fund balance at the beginning of the year	<u>15,254,935</u>	<u>19,005,814</u>
Unrestricted fund balance at the end of the year	<u>\$12,081,017</u>	<u>15,254,935</u>

BECC's Institutional Vision

BECC is a strategic, visionary and innovative organization capable of leading the efforts of border communities to accomplish their environmental and public health goals. Our leadership arises from technical excellence, team work and effective program and project management.

BECC's Mission

To preserve, protect and enhance human health and the environment of the U.S.-Mexico border region by strengthening cooperation among interested parties and supporting sustainable projects through a transparent bi-national process in close coordination with NADB; federal, state and local agencies; the private sector; and the general public.

Border Environment Cooperation Commission
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