CERTIFICATION AND FINANCING PROPOSAL

SOUTH WASTEWATER TREATMENT PLANT COGENERATION AND IMPROVEMENTS PROJECT CIUDAD JUAREZ, CHIHUAHUA

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EXECUTIVE SUMMARY

SOUTH WASTEWATER TREATMENT PLANT COGENERATION AND IMPROVEMENTS PROJECT CIUDAD JUAREZ, CHIHUAHUA

Project: The project consists of the design, construction and operation of a 1.35-MW cogeneration facility and the acquisition of equipment and improvements to the sludge management system, in the South Wastewater Treatment Plant in Ciudad Juarez, Chihuahua (the "Project").

Project Objective: The main objectives of the Project are:

i. Increase the installed capacity for power generation based on renewable energy resources, reducing the demand on traditional fossil fuel-based energy production and contributing to the displacement of greenhouse gas emissions and other pollutants produced by fossil fuel-based processes.

ii. Improve sludge and biosolids management by reducing the volume of waste generated for transportation and final disposal.

Expected Project Outcomes: The anticipated environmental and human health outcomes resulting from the Project are:

a) Installation of 1.35 MW of new renewable energy generation capacity.

b) Generation of approximately 7.43 gigawatt-hours (GWh) of electricity during the first year of operation.[1]

c) An expected displacement of approximately 11,563 metric tons/year of carbon dioxide equivalent [2] (CO_2e), 3.72 metric tons/year of sulfur dioxide (SO_2), and 12.4 metric tons/year of nitrogen oxides (NOx).[3]

[1] Generation is based on the information provided in the Sponsor's energy production assessment.
[2] The carbon dioxide equivalent for a gas is derived by multiplying the tons of a certain greenhouse gas, such as methane, by the associated global warming potential.
[3] Net displacement = (emissions from 16.8 GWh/year of conventional electricity used in the plant pre-Project + 12,649 tons/year CO_2e from biogas flaring) – (emissions from 9.97 GWh/year of conventional electricity use, post-Project + 6,271 tons/year CO_2e from cogeneration equipment). Post-project includes the additional consumption of approximately 0.6 GWh/year from the centrifuges.

d) Reduction in the volume of sludge, from 93,258 m^3/year (121,977 yds^3/year) to 79,935 m^3/year (104,551 yds^3/year).

Sponsor: Degrémont, S.A. de C.V. ("Degrémont")

Borrower: Degrémont.

Project Cost: $61.7 million pesos (US$4.1 million).[4]

Loan Amount: Up to $52.5 million pesos (US$3.5 million).

Uses & Sources:
(Millions of pesos)

Uses	Amount	%
Construction and equipment*	$53.2	86.0
Other costs**	8.5	14.0
TOTAL	**$61.7**	**100.0**
Sources	**Amount**	**%**
NADB Loan	$52.5	85.0
Other Lenders	9.2	15.0
TOTAL	**$61.7**	**100.0**

* Includes costs related to design, construction, equipment and performance tests.
** Includes value-added tax (VAT).

[4] Unless otherwise noted, all U.S. dollar figures are quoted at an exchange rate of $15.03 pesos per dollar, according to Bloomberg.com on February 20, 2015.

CERTIFICATION AND FINANCING PROPOSAL

SOUTH WASTEWATER TREATMENT PLANT COGENERATION AND IMPROVEMENTS PROJECT CIUDAD JUAREZ, CHIHUAHUA

1 ELIGIBILITY

Project Type

The Project falls within the eligible sectors of clean and efficient energy and waste management.

Project Location

The Project is located in the municipality of Juarez, Chihuahua, adjacent to the U.S.-Mexico border.

Project Sponsor and Legal Authority

The private-sector project sponsor is Degrémont, S.A. de C.V. ("Degrémont" or the "Sponsor"). In December 1992, the local water utility, *Junta Municipal de Agua y Saneamiento de Ciudad Juarez* (JMAS), conducted a competitive bidding process whereby Degrémont was awarded a build-operate-transfer (BOT) agreement for the implementation of the North and South Wastewater Treatment Plants (WWTPs) in Ciudad Juarez, Chihuahua (the "North-South BOT Contract"). Degrémont created the special-purpose company, *Concesionaria de Aguas Residuales de Juárez, S.A. de C.V.,* (CAR) to execute the North-South BOT Contract and operate the plants.

On November 12, 2014, JMAS' Board authorized the implementation of the Project, and on December 18, 2014, JMAS and Degrémont executed a second build-operate-transfer agreement whereby Degrémont is authorized to develop the Project to supply part of the electricity needed to power the South WWTP (the "Degrémont BOT Contract"). Both contracts will end at the same time in June 2026.

2. CERTIFICATION CRITERIA

2.1. TECHNICAL CRITERIA

2.1.1. Project Description

Geographic Location

The Project will be located in the municipality of Juarez, Chihuahua, across the Rio Grande from the city of El Paso, Texas. The Project will be built within the facilities of the South WWTP, located southeast of Ciudad Juarez.

Biogas production at the South WWTP is a byproduct of its sludge digestion process. The sludge from the North WWTP is conveyed through a pipeline to the South WWTP, where it is digested along with the sludge from the South WWTP. Figure 1 shows the geographical location of the North and South WWTPs.

Figure 1
PROJECT VICINITY MAP

Community Profile

The Project is expected to benefit the municipality of Juarez in several ways: 1) by generating electricity equivalent to the annual consumption of over 1,000 households or 40% to 50% of the annual energy consumption of the South WWTP, which currently consumes more than 16.8 gigawatt-hours (GWh) per year;[5] 2) by reducing the volume of sludge requiring disposal; and 3) by increasing the self-sustainability of JMAS.

According to the latest population census, the municipality of Juarez has a population of 1,332,131, which represents almost 40% of the state population. It is the municipality with the largest population in the state of Chihuahua.[6] Its population grew at an average rate of 1.4% annually over the decade leading up to the census.

In terms of economic activity, according to the latest economic census, manufacturing constitutes the most important sector in Ciudad Juarez, generating 64% of the municipality's gross domestic product (GDP) and employing 58% of its working population. Commerce represents the second largest sector, generating 11% of its GDP and employing 16% of its work force. Transportation, freight and storage constitute the third largest sector, representing 5% of the municipality's economy and 4% of total employment. Overall, Ciudad Juarez accounts for 52% of the state's manufacturing industry, 35% of its commerce and 59% of its transportation, freight and storage sector. In addition, it yields 41% of the state's GDP and employs 50% of its working population, making it the largest contributor to the state's economy.[7]

The current status of public services and infrastructure in Ciudad Juarez is summarized in Table 1.

[5] Number of households estimated is based on 1,986.220 kWh of electricity consumption per capita in 2013 from Mexico's Energy Information System (http://sie.energia.gob.mx/) and 3.6 persons per household in the state of Chihuahua as indicated by INEGI (http://www3.inegi.org.mx/sistemas/mexicocifras/default.aspx?e=08).
[6] Source: Mexican national institute for statistics, *Instituto Nacional de Estadística y Geografía* (INEGI), 2010 census.
[7] Source: INEGI, 2009 Economic Census. Detailed data from the 2014 economic census is not yet available.

Table 1
PUBLIC SERVICES AND INFRASTRUCTURE

Water System*			
Coverage	98%		
Supply source	Ground water wells		
Number of connections	438,192		
Wastewater Collection*			
Coverage	93%		
Number of connections	424,336		
Wastewater Treatment *			
Coverage	100%		
Treatment facilities	**Plant**	**Type**	**Capacity**
	Anapra	Activated sludge	93 lps (2.1 mgd)
	North	Activated sludge	1,600 lps (36.5 mgd)
	South	Activated sludge	2,000 lps (45.6 mgd)
	South South	Activated sludge	500 lps (11.4 mgd)
	Laguna de Patos	Activated sludge	25 lps (0.57 mgd)
Solid Waste			
Collection coverage	100%		
Final disposal	Landfill		
Street Paving**			
Street paving coverage	63%		

* Source: JMAS, 2012.
** Source: Ciudad Juarez Urban Development Plan (UDP).
lps = liters per second; mgd = millions of gallons per day.

Local Wastewater Treatment

Water and wastewater services are provided by JMAS in Ciudad Juarez. The city has five WWTPs with a total treatment capacity of 4,218 lps (96.17 mgd). JMAS operates the Laguna de Patos and Anapra WWTPs, while the North and South WWTPs are operated by CAR under the North-South BOT Contract, and the South-South WWTP is operated under another BOT contract between JMAS and *Tratamiento de Agus Residuales de Ciudad Juárez, S.A. de C.V.*, a special-purpose company created by the Sponsor. All the treatment plants have an activated sludge process and discharge to the Rio Grande. The Sponsor reports that the North WWTP is currently operating at 90% capacity, while the South WWTP is operating at between 82% and 85% capacity.

Currently, the sludge from the North WWTP, after going through a thickening process, is pumped to the South WWTP, where it is mixed with the sludge from that plant before being pumped to the anaerobic digesters for treatment. On average, approximately 720 yds^3/day (550 m^3/day) of sludge is conveyed to the South WWTP. Biogas generated from the sludge digestion

process is currently captured and stored onsite to generate heat for the digestion process or burned off in a flare.

After the digestion process, biosolids are currently dewatered in a belt press before being transported to a landfill for disposal. On a daily basis, between 280 and 300 tons of biosolids are transported for final disposal in an authorized area of the Juarez municipal landfill.

One of the long term goals in Mexico is to treat all the wastewater in the country. The goal was presented in the 2030 Water Agenda. By 2030, all wastewater collected in every municipality throughout the country will be treated.[8] In order to achieve this goal and comply with the regulations, sludge must also be treated prior to disposal, which presents several challenges, as described in the technology feasibility section. The Project offers a clean, safe and relatively economical method for reduce this waste byproduct, while at the same time taking advantage of its energy generation potential.

Energy Efficiency in Water Utilities

Energy is a critical element in the provision of water and wastewater services. Electricity costs are usually between 5% and 30% of total operating costs among water and wastewater utilities worldwide. This figure is usually higher in developing countries and can be more than 40% in some countries. Such energy costs translate into high, and often, unsustainable operating costs, which directly affect the financial health of water and wastewater utilities, stress municipal budgets, and can lead to rate increases for the public. Efforts to minimize the use of energy in the production of drinking water and wastewater services can potentially yield substantial energy savings. These savings can pay off in multiple ways, including:

- Reducing emissions from power generation based on fossil fuels;
- Reducing the cost of water and wastewater to the consumer; and
- Reducing the consumption of energy resources.

Interest in using cogeneration systems in WWTPs has grown in the last few years. Some of the factors promoting the growth include: its potential as a backup energy source; the availability of a free fuel source compared to the high cost of other fuel sources; interest in the use of renewable, clean energy sources; and government incentives.

In Mexico, there are several examples of sludge being utilized as a source of energy, mainly through cogeneration, including the wastewater treatment plants in Atotonilco, Jalisco; Agua Prieta, Sonora; the El Ahogado WWTP in Guadalajara; and the San Pedro Martir I WWTP in Querétaro. These plants use anaerobic digestion to process sludge and are expected to produce a large portion of the electricity required for each WWTP once they are operating at full capacity.[9]

[8] Source: Mexican national water agency, CONAGUA.
[9] Source: http://www.ai.org.mx/ai/images/sitio/201309/ingresos/jglm/doc_ingreso_gualberto_limon_trabajo_de_ingreso.pdf

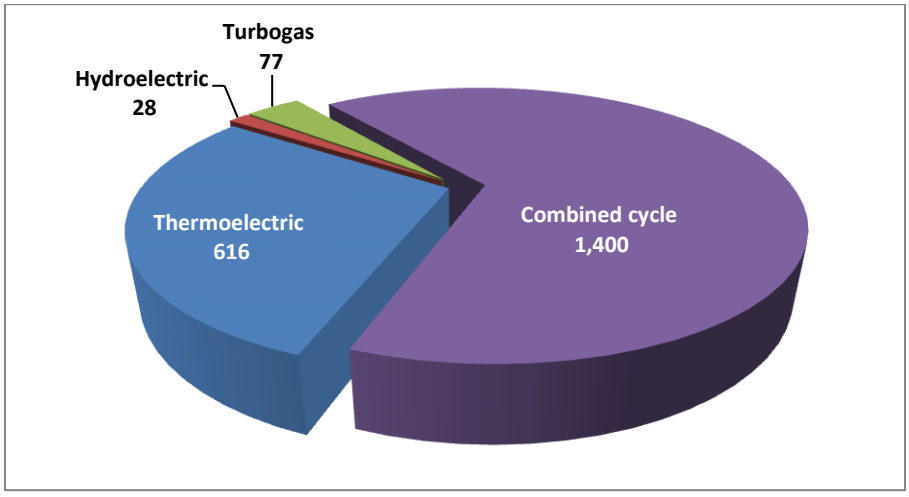
Local Energy Profile

In 2014, the legal framework of Mexico's Power System underwent a major reform to facilitate investments that improve infrastructure and meet the growing demand for electricity. According to Mexico's new Electricity Industry Law, the federal government retains planning activities and the control of the transmission and distribution infrastructure through the National Center of Energy Control (CENACE), a federal decentralized agency created by the government to operate the National Power System (SEN), and the Federal Electricity Commission (CFE) becomes a for-profit state-owned electric power supply company that will compete in an open market.

To date, Mexican laws allow for the participation of private capital in energy generation activities under the following schemes: a) cogeneration or small power production, b) self-supply, c) independent power production, d) exports, and e) imports for self-consumption. In 1995, the Energy Regulatory Commission (CRE) was created to regulate activities related to the participation of private investment in the power and natural gas sectors. CRE is responsible for issuing permits for power generation and the transmission of natural gas. The cogeneration component of the Project falls within these types of activities.

According to the Mexican Ministry of Energy (SENER), the generation capacity of Chihuahua for public service was 2,121 MW in 2012. The use of renewable energy sources for public service is not yet part of the state portfolio; this Project will be first of its type in the state. Figure 2 shows the technologies used for electricity generation in the state.

Figure 2
CHIHUAHUA PORTFOLIO OF ENERGY TECHNOLOGIES IN 2012
(Megawatts)



Source: SENER.

During 2012, Chihuahua generated 13,400 GWh of electricity as shown in Table 2.

Table 2
POWER GENERATED IN CHIHUAHUA IN 2012

Technology	GWh	%
Combined cycle	10,718.0	80.0
Conventional thermoelectric	2,547.7	19.0
Hydroelectric	89.4	0.7
Turbogas	45.6	0.3
TOTAL	**13,400.7**	**100.0**

Project Scope and Design

The Project consists of two components: 1) the design, construction and operation of a 1.35-MW cogeneration facility; and 2) equipment acquisition and improvements to the sludge management system at the South Wastewater Treatment Plant in Ciudad Juarez, Chihuahua.

Cogeneration Facility

The cogeneration facility will be located at the South WWTP site and will operate under a self-supply permit, providing between 40% and 50% of the electricity required to operate the plant, which currently consumes more than 16.8 GWh of electricity a year. Currently, the plant generates approximately 11,817 m^3/day of biogas in the existing sludge digestion process. The biogas is captured and used to heat the two digesters, and the remaining gas is burned off in a flare stack. With the new infrastructure, the South WWTP will use the biogas for cogeneration.

The new installations include washing, drying and blowing systems to ensure the optimal quality of the biogas, as well as two 675-kW generators for a total generation capacity of 1.35 MW, which is expected to generate approximately 7.43 GWh of electricity during the first year of operation, with the potential to produce up to 8.83 GWh per year. The cogeneration component of the Project represents about 80% of the total cost.

The Project Sponsor was awarded a service agreement from JMAS to build and operate the North and South WWTPs (North-South BOT Contract), as well as a separate service agreement to implement the Project (Degrémont BOT Contract), both of which will expire on the same date. At the end of the agreements, all equipment will become property of the JMAS.

The Sponsor has indicated that the electricity generated will be consumed in its entirety in the operation of the South WWTP, which uses an average of 1,836 kWh. The remaining demand will continue to be met by electricity from the grid. Since all the energy produced by the Project will be consumed by the South WWTP, an interconnection agreement will not be necessary.

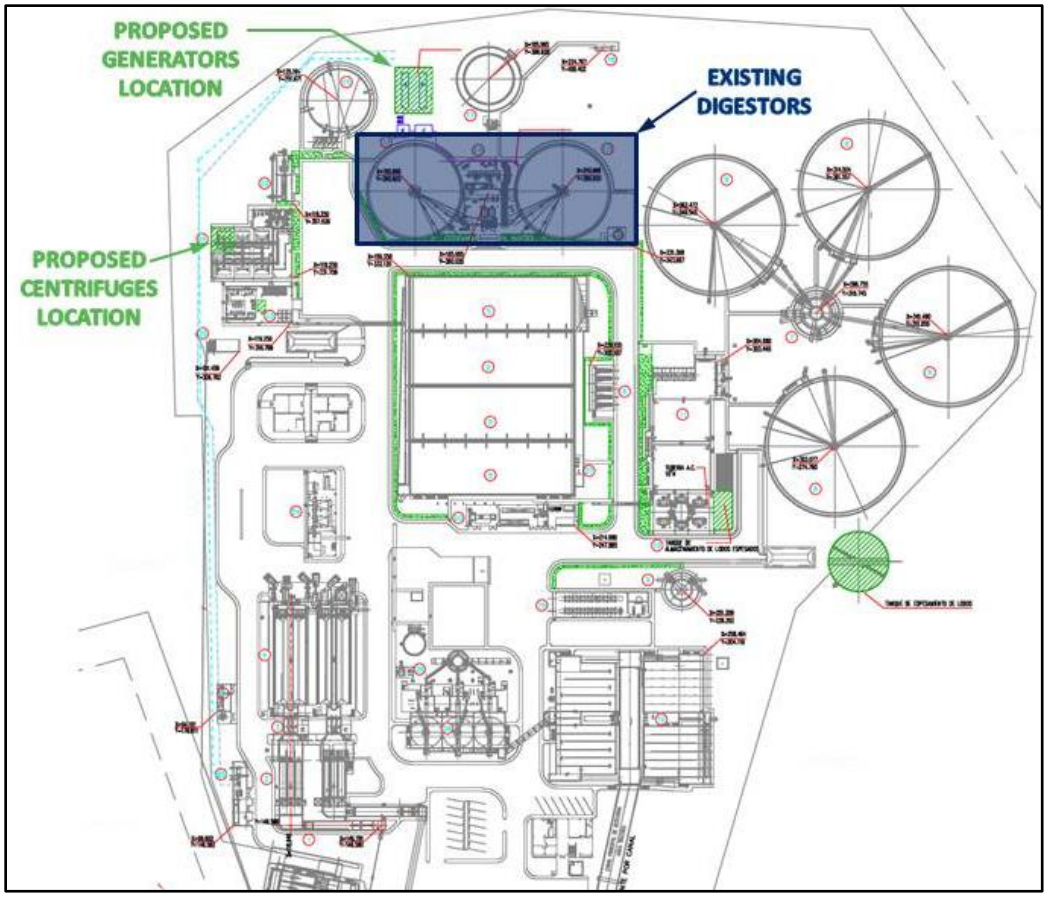
Sludge Management System Improvements

The improvements to the sludge management system include the installation of two centrifuges to replace the use of belt presses in the sludge dewatering process after digestion. The current dewatering process leaves 82% to 86% of the water content in the sludge, while the proposed centrifuges will remove up to 78% of the water content. With the new equipment, the volume of dehydrated sludge will be reduced 14%, from 93,258 m^3/year (121,977 yds^3/year) to 79,935

m^3/year (104,551 yds^3/year), which will help reduce the volume of biosolids deposited in the landfill, as well as transportation costs. This component represents about 20% of the total Project cost.

Figure 3 shows the current layout of the South WWTP and the location of the proposed cogeneration facilities and centrifuges.

Figure 3
PROJECT SITE



Construction of the Project is scheduled to start in May 2015, and the commercial operation date (COD) should be no later than December 2015.[10] Table 3 presents the status of key tasks for Project implementation.

[10] Information provided by the Sponsor.

Table 3
PROJECT MILESTONES

Key Milestones	Status
CRE self-supply permit modification (RES/224/2014)*	Granted
Interconnection feasibility study	Completed
Execution of the BOT Contract between Degrémont and JMAS	Completed
Final design	April 2015
Operation start date	December 2015

*Extension and transfer from CAR to Degrémont is in process.

2.1.2. Technical Feasibility

An important step in the sludge treatment process is stabilization, during which the volume of biosolids is reduced, pathogenic organisms are removed and odors are reduced. Despite the challenges associated with the treatment of sludge and the disposal of biosolids, they can bring benefits to both the WWTP and the population. Sludge can be utilized as a source of energy during the anaerobic digestion stage of wastewater treatment, by harvesting the biogas produced as a byproduct of the process. The biogas can be used to fuel generators through a cogeneration process that takes advantage of both electric and thermal energy. The electric energy is then used to meet part of the electricity needs of the WWTP, and the thermal energy is used to optimize the sludge treatment process. In addition to producing energy, cogeneration also offers the advantage of reducing greenhouse gases emissions.

Selected Technology

The Sponsor performed a feasibility analysis for the proposed Project and evaluated technology and equipment from various suppliers, including Degrémont's proprietary technology. The technology evaluation considered such elements as its suitability for existing operating conditions, operation and maintenance costs, performance and warranties. The Sponsor selected the equipment best suited to the characteristics of the Project site in order to obtain the best performance. The two main components of the Project are described below.

1. *Cogeneration Facility*

- *Biogas pretreatment*: Cogeneration systems require the removal of moisture, hydrogen sulfide and siloxanes to keep engine maintenance at acceptable levels. As part of the Project, the Sponsor is considering the installation of the following equipment to achieve the biogas quality required for optimal operation.
    - *Washing and dehumidifier*: The biogas produced by the current digesters installed in the South WWTP contains impurities, so it must go through a washing and dehumidification process.
    - *Desulfurization tower*: Biogas contains a small amount of hydrogen sulfide that becomes a very corrosive fluid when mixed with water. To protect the generators and related components the sulfur must be removed.

- *Biogas dryer*: Consists of a basic heat exchanger that increases the biogas temperature and reduces the remaining amount of water.

- *Power generation:*
  - *Biogas transmission line*: To convey the

- *Polymer preparation equipment*: For sludge stabilization.

To incorporate the new dehydration process, modifications must be made to the existing sludge conveyance systems, polymer system and water service system, as well as to the existing plant supervisory control and data acquisition (SCADA) system.

Resource Assessment

The Sponsor performed an analysis to measure the potential for biogas production. The analysis included the sludge production at both the North and South WWTPs from 2012 to 2014. Table 4 shows the average annual production of biogas in Digesters A and B at the South plant.

Table 4
AVERAGE ANNUAL BIOGAS PRODUCTION
(m^3/day)

Year	Digester A	Digester B
2012	4,865	4,216
2013	4,450	4,519
2014*	6,661	5,156

* Does not include November nor December.

Biogas sampling and analysis was performed from August to December 2011. On average, the analysis showed that the biogas contained approximately 65% methane (CH_4) and 34% of carbon dioxide (CO_2). The Sponsor has performed a more recent analysis of the biogas to determine its composition. In December 2013, the analysis of one sample showed that the biogas produced in Digester A contains approximately 63% methane, just over 30% CO_2 and 7% other compounds, including siloxanes. In March 2014, biogas from the same digester was approximately 66% methane, 32% CO_2 and 2% trace compounds. The analysis of Digester B showed that the biogas was approximately 65% methane, 32% CO_2 and 3% trace compounds in December 2013 and approximately 53% methane, 25% CO_2 and 22% other compounds in March 2014.

Given the current capacity of the two WWTPs and with the biogas production outlined above, the cogeneration facility will have an annual production of approximately 7.43 GWh of electricity during the first year of operation, with the potential to produce up to 8.83 GWh per year, as flow rates increase at the South WWTP.

2.1.3. Land Acquisition and Right-of-way Requirements

The Project will be constructed and implemented at the existing South WWTP, which is owned by JMAS. Under the Degrémont BOT Contract, JMAS has granted permission for the construction of the Project on 366.6 m^2 (3,946 ft^2) of plant property. The WWTP already has a municipal land use authorization, and no additional land acquisition or rights of way are required for Project implementation.

2.1.4. Management and Operations

Degrémont is recognized worldwide as a leader in wastewater treatment, with extensive experience in similar projects across the globe, including in Egypt, Jordan, Lebanon, France, India, Spain, the Czech Republic, Mauritius and Portugal, among others. The company has over 45 years of experience in the Mexican market, including projects at more than 300 WWTPs.

Degrémont is committed to optimizing resources and efficiently managing the WWTPs it operates in Ciudad Juarez. For that reason, it carried out a study in 2012, which demonstrated the benefits of using the biogas produced by the anaerobic digestion of sludge for the generation of electrical and thermal energy. The energy produced through integrated cogeneration equipment will reduce the operating costs of the South WWTP.

The waste management improvements are also based on the implementation of best management practices in the WWTP. Replacing the dewatering equipment will have a beneficial effect on the current operations of the WWTP, including a reduction in the overall cost of sludge management, by making fewer trips to the landfill for sludge disposal.

The Sponsor anticipates contracting major maintenance of the generator with the equipment manufacturer, and performing minor maintenance, such as routine oil changes, on its own. Degrémont anticipates operating the Project with the current personnel of the South WWTP; however, if necessary, one additional employee may be hired.

2.2. ENVIRONMENTAL CRITERIA

2.2.1. Compliance with Applicable Environmental Laws and Regulations

Applicable Laws and Regulations

The construction of a cogeneration plant is subject to federal environmental authorization in accordance with Mexico's General Law of Ecological Balance and Environmental Protection. Under this law, generation facilities of less than 3.0 MW do not require federal environmental authorization. Furthermore, the project site is located within the facilities of the South WWTP, which were previously evaluated and already developed; therefore, no environmental authorizations are required.

Environmental Studies and Compliance Activities

According to existing environmental regulations, no environmental studies and compliance activities are required for the execution of the Project. The regulation states that an environmental impact assessment (MIA) is only required for cogeneration facilities larger than 3 MW.

Pending Environmental Tasks and Authorizations

There are no pending environmental tasks or authorizations.

Compliance Documentation

According to existing environmental regulations, no studies or compliance activities are required.

2.2.2. Environmental Effects/Impacts

The proper treatment of municipal wastewater consumes large amounts of energy. The Project is expected to improve the availability of energy for the treatment of wastewater by using clean and renewable sources. The Project provides an opportunity to displace greenhouse gases (GHG) and other pollutants produced by traditional fossil fuel based energy generation, while providing the South WWTP with a safe and reliable energy alternative. Additional benefits from the Project include:

- Reduces CO_2 emissions caused by the operation of the WWTP by taking advantage of the biogas generated during the sludge digestion process.
- Promotes sustainable utility management.
- Improves environmental stewardship in the state of Chihuahua.

The sludge generated in WWTPs should be utilized for beneficial purposes instead of becoming a burden for the community and the environment. Biosolids can pose several challenges due to the vast amounts of land required for their disposal and the resources needed to transport them to an authorized site. In addition to the space requirements, biosolids decrease the useful life of the landfill and increase the need for the treatment and management of leachates. Biosolids should be evaluated for their potential use in energy generation, agriculture and other possible purposes.

Existing Conditions and Project Impact – Environment

Historically, Mexico has depended to a great extent on fossil fuels for the generation of energy. This conventional method of energy development can affect the natural environment due to harmful emissions related to the generation process, including GHG and other pollutants, such as sulfur dioxide (SO_2) and nitrogen oxides (NOx). The Project will help reduce the demand for electricity generated by fossil fuel-based power plants, thereby displacing related harmful emissions.

Wastewater treatment is an energy-intensive process; however, the biogas produced in this process can be used to reduce the facility's reliance on electricity from other fuel sources, leading to natural resource conservation. Cogeneration produces both electric and thermal energy available for use in the wastewater treatment process. Thermal energy is recovered in the form of hot water and vapor, which is then used in the treatment process. Moreover, the use of decentralized forms of highly efficient electrical generation prevents losses in transmission and increases the flexibility in the use of the system.

The main benefits of cogeneration include:

- Higher efficiency in the conversion and use of energy
- Lower emissions and reduction of waste disposal
- Lower energy costs, providing an economic advantage

The Project is anticipated to produce approximately 7.43 GWh of electricity in the first year of operation, equivalent to the annual energy consumption of over 1,000 households. The anticipated environmental outcomes from the installation of 1.35 MW of new renewable energy generation capacity include the displacement of 11,563 metric tons/year of carbon dioxide equivalent, 3.72 metric tons/year of sulfur dioxide, and 12.4 metric tons/year of nitrogen oxides.

Mitigation of Risks

In addition to using best management practices during construction and operation of the Project, the CRE permit requires the following activities to monitor and manage operational risks of the new cogeneration process:

- Notify CRE within 15 days of COD.
- Operate and maintain the facilities and equipment in such a manner that they do not constitute a danger to the Sponsor nor to third-parties.
- Once operations have begun, provide a quarterly report to CRE indicating the type and volume of fuel used, the amount of energy generated and, if applicable, the energy delivered to CFE.

Natural Resource Conservation

The Project will not have a negative impact on existing natural resources in the region. On the contrary, it will help to improve air quality by reducing methane emissions to the atmosphere, as well as reducing the demand for energy produced from fossil fuels. The Project is expected to supply up to 50% of the energy required for the operation of the South WWTP.

No-action Alternative

The no-action alternative to the development of the Project would result in a lost opportunity to generate clean renewable energy, reduce the sludge and methane emissions produced in wastewater treatment, and improve the efficiency and sustainability of the South WWTP. Additionally, without the Project, sludge disposal will continue to be a problem requiring more landfill space and resources to manage. Finally, the Project will also help meet the goals established under the Law for Renewable Energy Use and Energy Transition Financing (LAERFTE). Should the Project not be implemented, the mix of renewables in Mexico will be delayed, and available landfill space will be used up more quickly.

Existing Conditions and Project Impact – Health

Epidemiological research has shown that both chronic and acute exposure to harmful emissions associated with fossil fuel-based energy production can lead to serious respiratory problems. It is estimated that, at the very least, prolonged exposure to excessive levels of pollutants can

deteriorate the respiratory capacity of human beings and greatly contribute to the increased incidence of cardiopulmonary diseases, such as asthma, heart ailments, and lung cancer.

By using clean renewable resources such as biogas instead of conventional fossil fuel sources in power generation, the Project will positively impact the region by reducing pollutants and thus help to contain the severity of respiratory problems and other diseases aggravated or caused by air pollution. Reducing GHG emissions is also expected to mitigate climate effects that create more vulnerable conditions for human health.

Transboundary Effects

No negative transboundary impacts are anticipated as a result of the development of the Project. On the contrary, the Project will have a beneficial effect on air quality due to the decreased use of fossil-fuel-fired electrical production in the region. Furthermore, the Project will aid in addressing the larger environmental concerns related to greenhouse gases and global warming targeted by international agendas.

Other Local Benefits

The Project is expected to generate temporary construction jobs in the border region. Employment of personnel for construction activities would provide a temporary beneficial impact on local businesses and the regional economy through increased expenditure of wages for goods and services. The Project could also become a model for other water utilities interested in implementing cogeneration projects that promote sustainable development and contribute to climate change mitigation practices.

2.3. FINANCIAL CRITERIA

The estimated cost of the Project is $61.7 million pesos. The Project Sponsor has requested a loan for up to $52.5 million pesos from the North American Development Bank (NADB) to complete the financing of the Project. The proposed payment mechanism is well known and commonly used in the Mexican financial sector to structure similar transactions. Degrémont will be NADB's borrower at all times and will be responsible for making monthly debt service payments to NADB.

The primary source of payment for the NADB loan will come from the Service Agreement between JMAS and Concesionaria de Aguas Residuales de Juarez, S.A. de C.V. ("CAR") for the design, construction, operation and maintenance of the North and South WWTPs in Ciudad Juarez, Chihuahua. JMAS has pledged a portion of its revenue to an existing trust (the "Existing Trust") to serve as the source of payment for CAR's services. CAR will issue an irrevocable instruction to the Existing Trust to deposit all of the fees collected to cover fixed and variable operation and maintenance costs of the South WWTP (the "Fees") into an escrow account specifically created for payment of the NADB loan and other Project financing (the "Escrow Account"). JMAS' obligation to make monthly payments of these fees is guaranteed by a revolving, contingent and irrevocable line of credit (the "Line of Credit"), which is backed by the State of Chihuahua's federal tax revenue ("participaciones").

NADB performed a financial analysis of Degrémont, the source of payment and the guaranty. The analysis included a review of historical financial information, as well as cash flow projections. At the close of 2014, Degrémont presents good financial and operational indicators, which show that the company has successfully carried out its operations and met its obligations with contractors and lenders. JMAS reports a good financial position that is supported by the A+(mx) credit rating from Fitch Ratings. Furthermore, the estimated Fees are sufficient to cover close to 10 times the largest annual debt service payment for the Project. Finally, the State of Chihuahua committed 2.2% of its participaciones to support the Line of Credit.

In addition, NADB has verified that Degrémont has the legal authority to contract this loan. NADB also confirmed that the build-operate-transfer agreement between JMAS and Degrémont to develop the Project has been executed and that CAR is able to issue the irrevocable instruction to the Existing Trust to deposit the Fees into the Escrow Account.

Considering the Project's characteristics and based on the financial and risk analyses performed by NADB, the proposed Project is considered to be financially feasible and presents an acceptable level of risk. Therefore, NADB proposes providing a market-rate loan for up to $52.5 million pesos to Degrémont to complete the financing of the Project.

3. PUBLIC ACCESS TO INFORMATION

3.1. PUBLIC CONSULTATION

BECC released the draft project certification and financing proposal for a 30-day public comment period beginning April 2, 2015 and ending on May 2, 2015. No comments were received.

3.2. OUTREACH ACTIVITIES

In addition to the public consultation required for BECC certification, BECC conducted a media search to identify public opinion concerning energy needs. No references to the Project have been found in articles or publications online. The Project Sponsor has shown its willingness to share Project information with local and regional stakeholders.