Final Report
Volume I Executive Summary
CENTRAL LOMAS DE REAL
CENTRAL VALLE HERMOSO
Valle Hermoso, Tamaulipas, Mexico

DAMES & MOORE de MEXICO,
S. de R.L. de C.V.
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VOLUME I EXECUTIVE SUMMARY ENVIRONMENTAL IMPACT ASSESSMENT CENTRAL LOMAS DE REAL AND CENTRAL VALLE HERMOSO

INTRODUCTION

This Executive Summary of the Environmental Impact Assessment Report has been prepared to support the proposed financing of the two combined cycle power plant projects through a Loan Agreement with the International Finance Corporation (IFC) of the World Bank Group. The Report has been prepared by URS - Dames and Moore de Mexico (URS) in compliance with the environmental requirements established by the IFC. Electricitè de France International (EDFI) retained URS to prepare the Environmental Impact Assessment and oversee Public Consultation and Disclosure process for both projects.

The Mexican Federal Government, through the Federal Electricity Commission (CFE) and its Electric Sector Work and Investment Program requested bids for the installation of six thermal power plants in the State of Tamaulipas, under the Independent Production of Energy (IPE) framework. CFE completed the bidding process for the construction and operation of the thermal power plants known as Independent Production of Energy IPE Thermal Power Plants Rio Bravo III and Rio Bravo IV in the State of Tamaulipas.

Electricitè de France International, a wholly owned subsidiary of Electricitè de France, won the bid for Rio Bravo III and Rio Bravo IV projects under two separate official bidding processes conducted by CFE. Central Lomas de Real, S.A. de C.V. (CLR) and Central Valle Hermoso, S.A. de C.V. (CVH) are subsidiaries of EDF and they were declared winning bidders for the two power plants which are to be developed on properties, adjacent to each other, located in the Municipality of Valle Hermoso, in the State of Tamaulipas, Mexico.

CFE granted the concession for Rio Bravo III on June 12, 2001 and Rio Bravo IV on February 7, 2002. EDFI had previously won the bid for Rio Bravo II on December 30, 1998 which is also located on the adjacent property and this plant is currently in operation. Rio Bravo III (RBIII) and Rio Bravo IV (RBIV) power plants will be operated by Central Lomas de Real and Central Valle Hermoso respectively. They will generate power using combined-cycle natural gas turbines with a guaranteed capacity of 495 MW for RBIII and 500 MW for RBIV. Both plants, with very similar processes, will have a 2+2+1 combined cycle configuration that includes two gas turbines, two heat-recovery boilers (heat recovery steam generators) and one steam turbine.

Electricitè de France International (EDFI)

EDFI, with its headquarters in France, is a worldwide leader in the development of the infrastructure necessary for the generation, transmission, and distribution of electric energy. EDFI develops, builds, and operates safe power generation plants, increasing the supply of electricity to satisfy increasing demand in markets around the world. EDFI's stated philosophy is to develop clean energy services, at low cost, that impact in a positive way to the economy of the country in which it is developed with minimal impact on the environment. To achieve these goals, EDFI develops and applies state-of-the-art technology in the power generation and the constantly investigates other viable alternatives.

Environmental Impact Assessment

EDFI has proposed the construction and operation of the thermal power plants based on external financing and is currently requesting financing for RBIII and RBIV.

The Environmental Impact Assessment report includes evaluation of environmental and socioeconomic impacts for both the RBIII and RBIV projects based on the updated project specifications proposed by EDFI (rather than CFE's general specifications), and considers the interactions based on the construction and operation of all three thermal power plants (RBII, III and IV) in the evaluations of environmental impacts including atmospheric emissions, water intake and discharge, noise generation and for the socio-economic impacts. This report presents the information in the following sections, as required for Category A projects as defined in the IFC's Operational Policy 4.01, *Environmental Assessment*.

Vol. 1 Executive Summary

Vol. 2 Environmental Impact Assessment

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REGULATORY AND POLICY FRAMEWORK

In accordance with CFE planning and programming specifications and in compliance with requirements established in the Public Service Law for Electric Energy, CFE has developed an Independent Production of Energy (IPE) program to facilitate development of power generation in Mexico.

An IPE can be any company, established in accordance with Mexican laws and with an address in Mexico that generates power under the obligation to sell it to CFE, through long-term agreements. The agreements, wherein CFE is under obligation to purchase the energy generated by the Producer under the economic terms and conditions that may be convenient, are established according to Article 36-BIS of the Public Service Law for Electric Energy, and in compliance with requirements established in applicable legislation.

As part of the Electric Sector Investment and Working Program, CFE requested a bid for two thermal power plant projects under the IPE framework. These projects are to be connected to the National Electricity System.

The bidding specifications proposed by CFE defines the type of fuel and pre-selected site for locating the power plant as an optional site. The bidders can use the offered site or propose an alternate site. For these two projects, EDFI decided to use the sites proposed by CFE.

CFE provides recommendations for major equipment and systems necessary to comply with the specified technical requirements in the bid specifications. The bidder ultimately responsible for the design, construction, testing, and operation of the power plant. However, CFE retains the right to inspect and comment on the activities conducted by the winning bidder, throughout all the phases of the project, in accordance with the terms and conditions of the Agreement between the CFE and the winning bidder.

The bid for the development of the projects in response to CFE's bid request is under an IPE framework. The winning bidder is required to execute an agreement with CFE including specified terms and conditions. The IPE, the winning bidder, is required to agree that for a determined period of time all the power generated by the plants will be sold to the CFE in accordance with the terms specified in the Agreement. CFE then transmits this electricity through the National Electric Grid.

The IPE framework requires that CFE obtains authorizations concerning environmental impacts during the construction and operation of the thermal power plants at the site selected by CFE. Once the authorization is obtained, along with all the obligations and rights therein established are transferred to the winning bidder by CFE prior to the initiation of construction activities at the site.

The IPE is required to comply with all the environmental prevention, mitigation, control, and follow-up measures specified in the Environmental Impact Manifest (MIA) presented to the Mexican regulatory agency (SEMARNAT) and comply with the conditions established in the environmental impact authorization, and the guidelines and regulations established by environmental authorities.

The MIA for the RB III power plant was prepared and submitted to SEMARNAT in June 2001 by CFE, based on general design specifications. CFE obtained the Environmental Impact authorization on October 31, 2001. The MIA for the RBIV power plant was prepared and submitted to SEMARNAT in November 2001, and the authorization was obtained on May 9, 2002. CFE has transferred these authorizations to EDFI. These authorizations ensure that the projects will comply with the applicable Mexican standards and regulations as well as the laws related to environmental protection in Mexico. The assessment contained in this report has been conducted independently to support the request for financing through IFC.

PROJECT DESCRIPTION

The thermal power plants will be located on adjacent properties within Colonia Agricola Anahuac, in the Valle Hermoso Municipality, in the State of Tamaulipas, at the 3.2 km of the Anahuac – Matamoros Highway. The power plants are located 25 km southwest from the city of Matamoros, and 18 km northeast from the town of Valle Hermoso (see Figures 1 and 2).

The RBIII and RBIV projects are combined cycle power plants with a guaranteed capacity of 495 MW for RBIII and 500 MW for RBIV and an expected life of 25 years. Both plants will use two Siemens-Westinghouse model 501F combustion turbines and a single steam turbine. The turbines are equipped with Low NOx combustion technology to ensure compliance with World Bank Guidelines as well as Mexican environmental standards.

The heat recovery steam generators produce steam at an approximate temperature of 400ºC. The high-pressure steam is then used to produce electricity using the steam turbine-generator. The low-pressure steam is condensed in an air-cooled condenser and the water is recycled as boiler feed water.

The natural gas fuel for the plants will be supplied through a pipeline originating in the United States of America, which meets all U.S. standards for natural gas quality. Figure 3 shows the route of the pipeline from Texas to the power plants. The estimated daily consumptions for the RBIII and RBIV plants will be an average of 90,000 MM BTU per day (approximately 2,400,000 m^3/day) at full load.

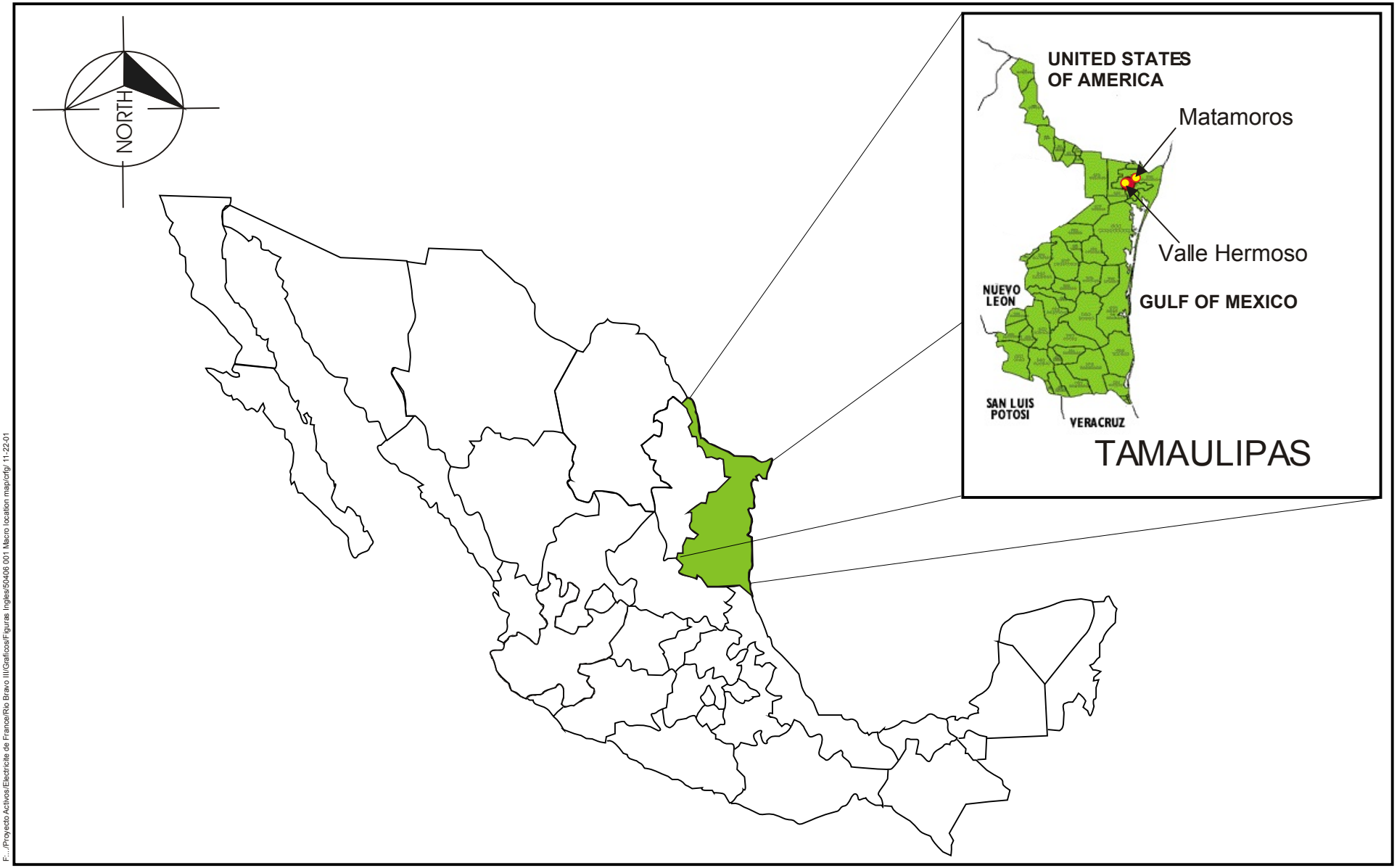
Water for the projects will be supplied from wells drilled into a deep aquifer. The water used will be minimized due to the use of air-cooled condensers. Wastewater will be sent to an evaporation lagoon constructed for the plant on the adjacent land.

The selected land was acquired by CFE in 2001 and the ownership of the site for RBIII was transferred to EDFI on October 31, 2001 while the ownership transfer for RBIV is in process. Prior to purchase of the land by CFE the land was used for agricultural activities, however currently both sites have industrial land use zoning. Internal process within CFE requires the site to be selected based on pre-established criteria and ensures that there are no significant environmental impacts associated with the site.

Infrastructure and Services

Substations: The output of the plant will be transmitted to the substation near each power plant. The power from each substation will go to a CFE distributing substation located next to RBII for its distribution through the existing CFE network.

Transmission Lines: The MIA prepared by CFE for each power plant, state that no new transmission lines will be constructed since the transmission line constructed for RBII power plant was designed considering the future expansion of RBIII and RBIV. If and when new transmission lines are required in the future, it will be CFE's responsibility, according to the current provisions in the Mexican Constitution and the laws, to build and operate the transmission lines in accordance with Mexican standards and regulations.



F:../Proyecto Activos/Electricite de France/Rio Bravo III/Graficos/Figuras Ingles/50406 001 Macro location map/cfg/ 11-22-01

Source: Sketch URS/Dames & Moore Mexico

REGIONAL LOCATION MAP

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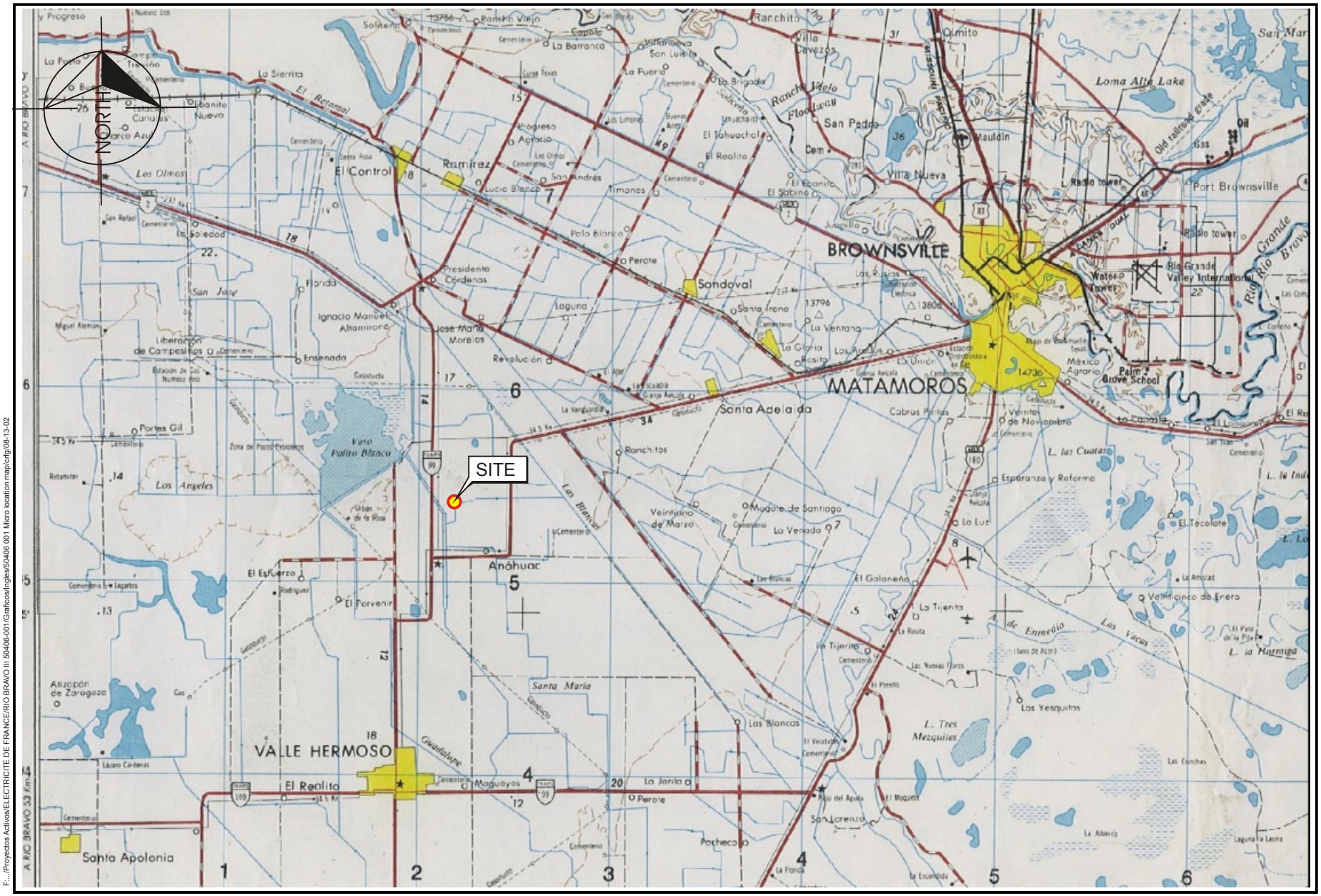
FIGURE 1



F:../Proyectos Activos/ELECTRICITE DE FRANCE/RIO BRAVO III 50406-001/Graficos/Ingles/50406 001 Micro location map/crfg/08-13-02

Source: INEGI, Carta Topográfica Matamoros G14-6-9-12

SITE LOCATION MAP

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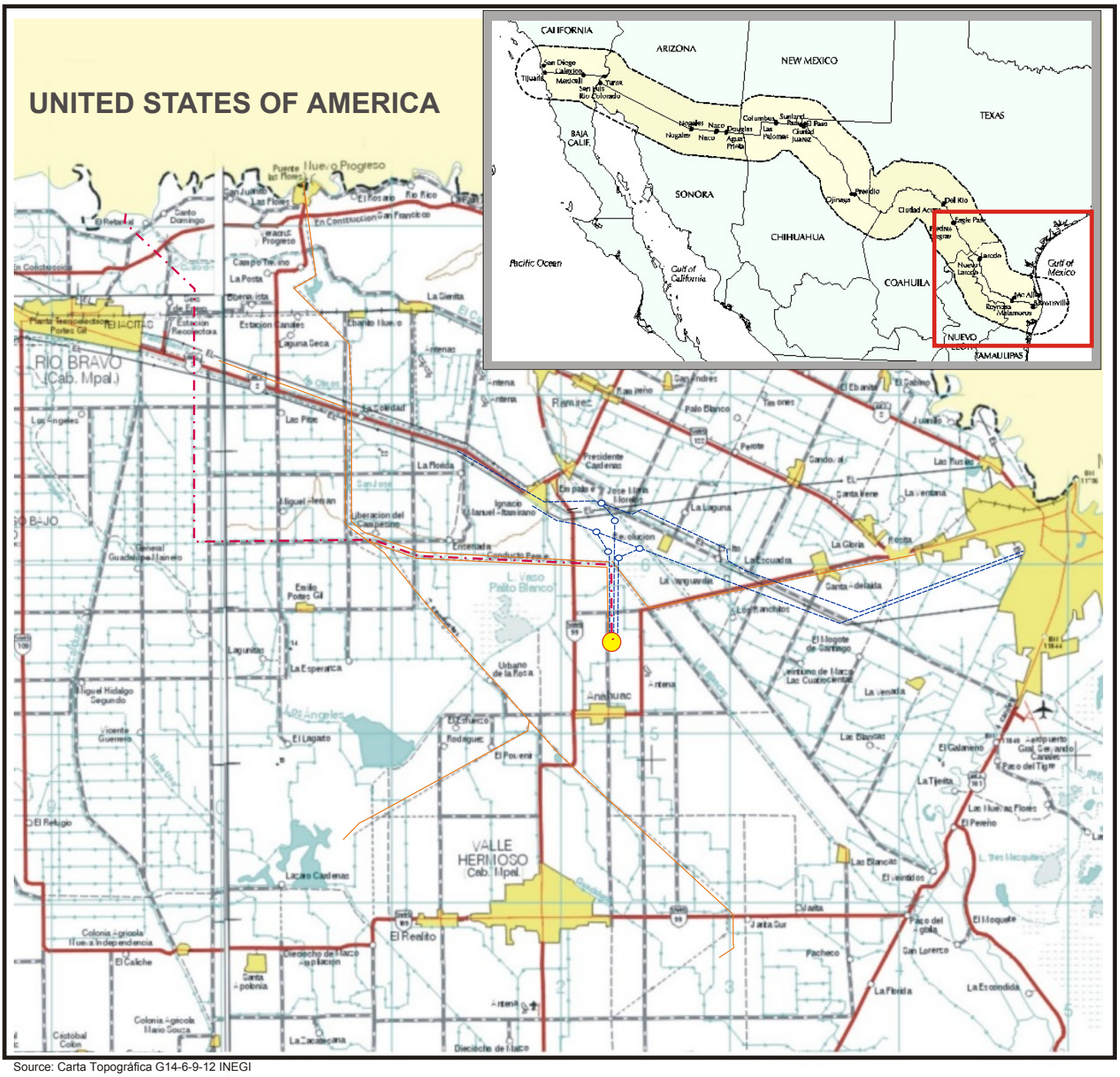
FIGURE 2



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Source: Carta Topográfica G14-6-9-12 INEGI

0 1 2 3 4 5 km

Graphic Scale

LEGEND

- Río Bravo III & IV
- Existing pipelines
- Transmision Lines
- Transmision Lines connection
- New pipeline (Gasoducto Rio Bravo)

TRANSMISION AND PIPELINE ROUTES

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FIGURE 3

Energy and Fuel: During the construction phase of the projects a 13.8 kV voltage CFE line will provide 5 MW of power for each power plant. During operations, each plant will consume 4 to 6% of its production. Both plants will operate solely on natural gas and will consume 90,000 MMBtu per day (approximately 2,400,000 m^3/day) at full load.

Pipeline: The Proposed South Texas Expansion Project will be designed, constructed and operated by Tennessee Gas Pipeline Company in the state of Texas, U.S.A, which will bring natural gas from their system to the U.S. – Mexico Border. The Gasoducto del Rio, S.A. de C.V. (GDR) will be the owner operator of a 30" diameter open access pipeline within Mexico and will connect the pipeline from the U.S.-Mexico border crossing the Municipality of Rio Bravo, Tamaulipas and terminating in the Municipality of Valle Hermoso to the power plants (see Figure 3). This pipeline will have a total length of 52.664 km.

The pipeline will have a branch at km 8+561 that will transport gas through a 16" diameter pipeline to a power plant located in Portes Gil and will have a length of 5.399 km. There will be an additional branch in Campo Brasil (km 31+274) that will connect to an existing 16" pipeline that currently supplies RBII. The pipeline will be designed to operate at a maximum allowable pressure of 1,000 PSIG and at a flow rate of 410 MMCFD. A utility room for the protection of the meters and instrumentation will be installed by GDR next to RBII. The 15 m x 20 m gas supply station (at the delivery point) will be located in the original utility room site without occupying any additional land. This area will be protected by a security fence system.

The MIA for the Mexican portion of the gas pipeline was reviewed by SEMARNAT and its availability was announced to the public in December 2001 and authorization was issued in April 2002. U.S. Federal Energy Regulatory Commission prepared the EIA for the U.S. portion of the gas pipeline and its availability for public comments was announced on July 26, 2002 (www.ferc.fed.us).

Water Supply: The water required for steam production will be supplied from two wells, one within RBIII and another within RBIV, thus providing independent water sources for each plant. Estimated maximum water consumption for RBIII is 13.5 l/s and for RBIV is 15 l/s. The well to be located at the RBIII power plant is currently undergoing tests to determine the appropriate depth. The tests are being conducted at depths of 90 and 250 m. The preliminary test results indicate that the two aquifers, at 90 m and at 250 m are completely separate and are not connected based on the water flows and geology of the terrain. The water quality in either case is indicated to be not conducive for human consumption.

Wastewater Discharge: Each power plant will provide its own means for industrial wastewater disposal since there is no municipal infrastructure for wastewater discharge at the sites. Wastewater generated by the processes will be sent to an evaporation lagoon from where, due to the high temperature and relatively low humidity of the region, it will evaporate into the atmosphere. Each power plant will have an evaporation lagoon for a zero process wastewater discharge. Both lagoons will be located on a 20-hectare site northwest from the RBIII site. The lagoons will have a waterproof liner to prevent wastewater filtration and the sediments will be removed and disposed of, as necessary by an authorized company in compliance with the Mexican standards and regulations.

Waste and Emissions Management (Construction Phase)

Solid Waste: Both, the RBIII and the RBIV power plants will generate hazardous and non-hazardous wastes during the construction, testing, and operation phases. During the construction phase, the majority of the wastes generated will be inert and non-toxic industrial wastes. These wastes will be temporarily stored at the site in a designated and closed-off area. The classification, storage and transportation for final disposal of these materials will be conducted in accordance with applicable Mexican laws and regulations. The site will under no circumstance be used for final disposal.

Atmospheric Emissions: During construction phase, atmospheric emissions will be limited to the operation of construction equipment and machinery as well as operation of motor vehicles.

Waste and Emissions Management (Operations Phase)

Wastewater: During operations, the sources of wastewater will be:

- Sanitary wastewater,
- Industrial wastewater, and
- Rain water.

Sanitary wastewater, after settling, will be treated on-site in the wastewater treatment plant that uses an aerobic process with bacteria and enzymes. The settled solids will be disposed off by an authorized company in compliance with Mexican regulations. The treated water will be discharged into storm water drains. Pipelines and roof gutters from main buildings and access roads will collect non-oily storm-water through gravity into a trench from where it will enter CNA drains that transport the water to irrigation systems.

Water potentially contaminated with hydrocarbons will be treated in oil-water separators designed to contain the maximum rainfall volume that occurred in the last 10 years (60 l/s). The treated water will be discharged into the storm-water drainage network at the plant site. The sludge generated during treatment will be removed and disposed of by an authorized company.

The wastewater from the plant equipment will be sent to an evaporation lagoon using waterproof trenches, without receiving any treatment. The sludge generated in the evaporation lagoon will be removed and disposed off by an authorized company in compliance with Mexican Regulations.

Solid Waste

Non-hazardous Waste: Solid waste such as paper, cardboard, wood chips, industrial and domestic wastes will be temporarily stored in a designated area, where they will be classified and stored in designated containers, and transported for final disposal by an authorized company. The wastes that could cause detritus or leaching will be stored in compliance with company and legal requirements to prevent any risk of contamination to the environment. A CRETIB (Corrosivity, Reactivity, Explosivity, Toxicity and Risk of Biological Infection) analysis will be performed on the sludge of the waterproof trench prior to being transported to external treatment centers.

Hazardous Waste: Hazardous wastes generated during plant operation are mineral oil, used lubricants, oil filters and materials contaminated with oil, such as rags and cardboard. Wastes such as rags impregnated with oil and/or solvents will be temporarily stored in containers located in specified areas, until they are picked up and recycled, confined, or incinerated by authorized companies. The handling of hazardous wastes will be performed in accordance with Mexican Official Standards.

Atmospheric Emissions: The emissions to the atmosphere will be mainly discharges from the stacks of the heat recovery steam generators which contain NOx. The preventive measures that will be used to limit the discharges of these contaminants into the atmosphere are:

- Natural gas as the sole fuel used in the processes.
- Combustion turbines equipped with low NO_x burners.
- Design of the stacks with optimum heights to favor dispersion.

A continuous emissions monitoring system located in each stack will measure the NO_x and O_2 discharges. Air quality for RBIII and RBIV will be monitored with the addition of three new fixed monitoring stations located throughout the sites to obtain accurate readings of air quality based on dominant winds.

Noise Emissions: Both of these power plants are designed to comply with the Official Mexican Standard NOM-081-ECOL-1994 that establishes the maximum permissible limits for noise emitted from fixed sources, and the measuring method.

Construction Schedule and Costs

The site preparation and construction phases of the RBIII and RBIV power plant is estimated to be completed within 24 months, initiating operations of RBIII in 2004 and RBIV at the beginning of 2005. Each power plant will require an approximate investment of US $300 million.

BASELINE DATA

The project area is located remotely from areas of residences, and is next to the site of an existing power generation facility (RBII). The major environmental components of concern for the proposed power plants discussed below are air quality, ambient noise, water quality and biological resources.

Air Quality

The closest weather station in Matamoros, Tamaulipas, which is approximately 20 km from the site shows the predominant winds (17 to 21 knots) are from ESE, SE and SSE with occasional velocities greater than 21 knots year around with occasional NW winds during the fall.

The Northeastern Center for Biological Investigations, S.C. (CIB) preformed three simultaneous rounds of air quality monitoring for six days each, 24 hours per day in three sampling stations, in order to determine NO_x, SO_2 and particulate matter (PM_{10}) concentrations. The sources of atmospheric emissions in the area include the RBII power plant, vehicle traffic in neighboring roads, and brick factories located in the town of Anahuac. The results indicate that average concentrations of NO_x and SO_2 were below the maximum permissible limits established by the standards. The particulate matter in the environment is mostly generated by the dust storms in the cultivated areas and unpaved roads which occasionally exceeds the maximum permissible limits.

Noise

URS obtained background noise levels in April 1999 to record initial noise conditions prior to the construction and operation of RBII, directly adjacent to the RBIII and IV, as well as to identify the potential impacts to receptors in the area. The environmental noise measurements were performed for two consecutive days during both daytime and nighttime. The results show that the existing noise at the sites closest to the power plant is strongly influenced by motor-vehicle traffic on the highway. The noise monitoring results of both days show that the existing background noise level exceed the maximum permissible limits established by the World Bank Guidelines, but were well within the limits established by the Mexican Official Standards.

Currently, the potential receptors nearest to the plant sites are scattered rural single-family dwellings located about 1 km west of the site. The nearest town to the plant site is community of Anahuac located about 3 km south of the site with approximately 3,300 inhabitants. Due to the ongoing construction and commissioning activities at RBII plant site it was decided that the noise study would not provide measurements of representative noise levels. A noise study conducted by RBII in April 23, 2002 indicates that noise levels detected at the southern limit of the plant, adjacent to the RBIII site, were 55.5 dB(A), which is below the permissible limits stated in the Mexican Official Standard.

Water Resources

The following subsoil information was obtained from geo-physical study for a well in the project area:

- Non-consolidated Clays and sands are present from the surface down to 24 m in depth.
- A sedimentary rock sequence was identified below 24 m down to a depth of 250 m.

Based on the study of the geophysical, stratigraphic, and electrical density, and neutron records, it was determined that the preferred strata for aquifer are located between 70 and 82.50 m in depth. This area is actually composed of two strata namely a clayey gravel and a fine sand.

The Hydrological region from which the water will be extracted for the operation of the power plants is the Conchos Rio Bravo (RH 24) at depths of 90 to 250 m.The water availability for the year 2001 was 13% greater than the extraction volume[1].

Mainly rain and agriculture drains recharge the shallow aquifer while the deep aquifers receives marine intrusions from the Gulf of Mexico. According to the available information, groundwater from the deep aquifer is not used for irrigation or domestic purposes in the region due to the poor quality of water and the depth at which such water is available. Based on the structural conditions and based on the information available about the aquifers in the region, it was determined that the deep aquifer is not connected with the shallow aquifer nor are they connected to the aquifers in U.S. – Mexico border.

There are no rivers or streams within a 15 km radius but other hydrologic systems such as canals and drainages exist and are part of the DR025 Bajo Río Bravo irrigation district.

CNA has issued an authorization to pump a maximum of 13.5 l/s (425,736 m^3/year) from the main aquifer for RBII. CNA document, number BOO.00.R07.03.-025(01) is a letter addressed to CFE where CNA has responded to CFE's request for the feasibility to extract groundwater at the RBIII site or within a two km radius in the Municipality of Valle Hermoso, Tamaulipas. This document establishes that the maximum volume of available groundwater in the area is around 6,900,000 cubic meters per year. The estimated amount of water extraction required for the RBIII and RBIV projects is less than 15% of this available volume.

[1] Water Bank Summary in Mexico 2001, National Water Commission. January 2001.

Biological Resources

The power plant sites are located within a geographical region characterized by plateaus and small hills of low elevation. The physiographic and climate characteristics promote the presence of plants typical of the Mexican high-plains and dry, semiarid regions of Mexico. Due to anthropogenic pressures over several years, the original vegetation has disappeared and been replaced by agricultural cultivations of induced grasslands used for raising cattle and by secondary plant communities that indicate disturbance. While numerous species have been identified as potentially living in the project area, the disturbed nature of the site and its industrial setting limit the actual species present. No special status species were observed during the site visit.

Ecosystem and Landscape

The predominant landscape of the property site is comprised of flat areas dedicated to irrigated land agriculture, with the RBII power plant as the main industrial structure. RBIII and RBIV power plants will be located adjacent to RBII and will have the same design and construction characteristics, therefore will be integrated to the current landscape conditions.

The area does not present unique or exceptional aesthetic qualities; it is not considered a tourist area, it contains no archeological sites, or areas of historic interest. However, the town of Anahuac has the San Isidro Labrador chapel, which was the first Catholic chapel built by the founders. The chapel was rebuilt and remodeled from 1996 to 1998 (Avila G, "Anahuac, yesterday and today").

Socioeconomic Setting

The sites are distant from the urban areas, in an agricultural zone. The nearest populated area is approximately three km to the south. The community of Anahuac has a population of approximately 3,307 inhabitants most of whom work in agriculture. The entire Municipality of Valle Hermoso has a population of 58,292 distributed over 134 locations (INEGI, 2000) with a high degree of dispersion. Land surrounding the project site is used primarily for agriculture. There are approximately 100 lots, each with an area of about 20 hectares.

Housing statistics demonstrate that 97% of the population of the municipality live in homes built of concrete, brick or wood with aluminum sheet roofs and concrete floors (INEGI, 1997) with an average occupancy of 4.3 inhabitants per home. These homes are equipped with basic services such as electricity (87%), potable water (85%) drainage (61%), telephone (80%), INEGI, 1997. In rural areas of the municipality, water for human consumption is supplied by water purifying companies, since the groundwater contains high concentrations of mineral salts, which makes it unsuitable for human consumption. There are watermills that are used for domestic purposes and animal consumption.

The municipality has a total of 39 medical units serving 78% of the population and 1.09 doctors for each 1000 inhabitants (INEGI, 1998). The main cause of mortality is heart disease (19.4%), which is higher than the national average of 15.6%.

In general terms, it is estimated that 93.5% of the inhabitants have some level of education, while the remaining 6.5% are illiterate (INEGI, 1998). Currently the municipality cannot meet the demands for high-school education in rural areas; rural students attend school at the municipal capital of Valle Hermoso. The municipality does not offer higher education facilities and therefore anyone seeking a university degree must attend school in another municipality, such as Reynosa, Matamoros, Rio Bravo or Cd. Victoria (INEGI, 1992). There are five facilities that provide job training. There is an education center in the municipality, which provides training to about 66 students and employs seven teachers. In Valle Hermoso, there are two cultural centers. In general, the way of life in the area is characterized by a focus on rural culture, with a tendency to become more urban through U.S.- Mexico influence due to its proximity to the border. There are no ethnic groups within the region.

There are extensive cattle raising facilities for self-consumption as well as some poultry farms. Livestock raised in the area are cattle, pigs, small ruminants (sheep and goats), and horses. However, agricultural and livestock-raising activities in comparison with other economic activities in the State have decreased 5.24% in the year 2000 as is the general trend in the region. Industrial activities include manufacturing and extraction. Extractive industries represented 2.10% of the economic activities in Tamaulipas in 2000 (along with energy production and potable water). PEMEX has exploration wells in the area, which produce natural gas. The nearest well to the site is located about six km southeast of the site. Construction material banks produce mainly lime, river sand, and gravel. There are 20 assembly plants in the area which produce automobile parts, textiles, and welding. In general, the manufacturing industry in Tamaulipas has presented an average sustained growth of 21.9% from 1993 to 2000, which accounts for 21 % of the economic activity in the State.

ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

Air Quality

The combustion gas turbines will be designed to minimize emissions to the atmosphere. The Model 501 F combustion turbines will comply with both Mexican Official Standards and World Bank Guidelines. Potential increases in ambient contaminant concentrations were estimated using dispersion modeling with the USEPA Industrial Source Complex (ISC) Model. The model results indicate compliance with Mexican Official Standards and World Bank Guidelines. In addition, concentration increases at receptors in the United States will be below significant impact levels established by the USEPA.

In-Stack Pollutant Concentrations

The combined cycle, natural gas power plants were designed so that during operation they will generate minimal concentrations of atmospheric contaminants such as nitrogen oxides (NOx) for a complex of plants of this magnitude. The generation of other contaminants, such as sulfur dioxide (SO_2), total suspended particles (TSP) and particulate matter less than 10 microns in diameter (PM_{10}) will also be minimized per design characteristics.

The power plants will be equipped with two gas fired combustion turbines, with low NOx burners. This combustion system allows the plant to comply with maximum permissible limits for emissions specified by NOM-085-ECOL-1994. The design includes the construction of two stacks for the release of combustion gases with a height of 35 m for a more adequate dispersion of contaminants and a reduction in air quality impacts. Emission measuring equipment will be installed in the stack, in accordance with NOM-085-ECOL-1994 specifications. The devices will be used to verify that contaminant emission does not exceed maximum permissible limits established by the same standard.

Table 1 shows a comparison of the in-stack concentration of PM_{10}, SO_2, and NO_X during natural gas combustion to the World Bank Guidelines and the Mexican Official Standard. This table shows compliance with all applicable guidelines and standards.

The in-stack NO_x emission levels of 40 ppmvd is about 67% of the World Bank Guideline value and only 28% of the Mexican Official Standard. In fact, the NO_x level for each of the combustion turbines for the RBIII and RBIV plants meets the 40-ppmvd levels required in heavily polluted areas of Mexico, such as Mexico City. The in-stack PM emission rate of 40 mg/Nm^3 is about 80% of the World Bank Guideline value of 50 mg/Nm^3. There is no PM_{10} standard for natural gas fired turbines for Mexico. For SO_2, the in-stack emissions, using natural gas, are far below the World Bank Guideline values for both tons per day and mg/Nm^3. For SO_2 there are no Mexican Official Standards for natural gas firing.

Table 1 In-Stack Pollutant Concentrations Compared to World Bank In-Stack Guidelines and Mexican In-Stack Standards

Pollutant	In-Stack Concentration	Mexican Standard	World Bank Guideline
PM_{10}	40 mg/Nm^3	NA	50 mg/Nm^3
NO_X	82.1 mg/Nm^3 (40.0 ppm)	290 mg/Nm^3 (141 ppm)	125 mg/Nm^3 (61 ppm)
SO_2	2.7 mg/Nm^3 0.3 tons/day	NA	2,000 mg/Nm^3 150 tons/day

* Conversion of parts per million to milligrams per normal cubic meter conversions (and reverse) were made using the Conversion Chart in Annex E of the World Bank Thermal Power - Guidelines for New Plants. All values are expressed at standard conditions, dry basis, 15% oxygen.

NA: Not Applicable

Air Quality Impacts

An Air Quality Impacts Analysis was conducted to evaluate potential ambient air quality impacts based on the operation of three adjacent power plants (RBII, III, and IV). Applicable Mexican Official Standards and World Bank Guidelines for ambient air quality (fence line) were evaluated.

An air dispersion model was used to evaluate project impacts upon ambient air quality. The maximum modeled NO_2, SO_2, CO, and PM impacts due to the power plant operations are compared to the Mexican Official Standards and the World Bank ambient air quality guidelines (Table 2). The maximum concentrations predicted using the five-year meteorological data were selected for this comparison. Table 2 also includes the maximum impacts along the Texas border. Since there are currently no longer-term, reliable background ambient air quality data available, the RBII power plant was modeled and assumed to be representative of background concentrations.

Three different scenarios were evaluated for the power plant projects:

1. RBIII and RBIV firing natural gas;
2. RBII firing diesel fuel with RBIII and RBIV firing natural gas (emergency situation only) and
3. RBII, RBIII and RBIV firing natural gas.

RBII turbines normally fire gas; and diesel fuel is only used as a backup, emergency fuel. Therefore, annual impacts for diesel firing at RBII are not applicable and are not provided in Table 2.

Table 2 shows that the operations of the RBIII and RBIV plants, by themselves, are in compliance with all applicable Mexican Official Standards and World Bank Guidelines for ambient air quality for NO_x, SO_2, PM_{10}, TSP or PM_{10}, and CO for all averaging periods. Table 2 also shows compliance with all applicable standards and guidelines when all three plants (RBII, III and IV) are operational (including RBII on diesel or natural gas firing).

The ambient air quality impacts at the Texas-Mexico border are minimal, and these impacts are below the USEPA significance levels for all applicable pollutants (and averaging periods) for RBIII and RBIV, except for the 24-hour PM_{10}. In the case of PM_{10} the combined impacts from RBIII and RBIV are 5.2 ug/m^3 and the significance level is 5.0 ug/m^3.

The RB II, III and IV will use one of the energy efficient combined cycle technology (501F) with thermal generating efficiency of 50% (HHV) and 55% (LHV). The three plants are expected to generate at annual capacity factor of 70%, producing 9,140 GWh of electricity per year per plant, consuming 18.8 million MMBtu per year for RBII, 18.8 million MMBtu per year in RBIII and 19.0 million MMBtu per year in RBIV respectively. Based on these conditions, the three plants are expected to emit 1.1 million tons CO2 per year each for RBII and RBIII and 1.12 million tons of CO2 per year from RBIV. The average CO2 emission per unit of electricity generated by RB II, III and IV is estimated to be 360 g-CO2 per kWh, which is 35% lower than the Mexican national average of 550 g-CO2 per kWh (1998).

Table 2 Comparison of Maximum Impacts to Mexican Official Standards and World Bank Air Quality Guidelines [1]

Unit	Pollutant	Averaging Period	Maximum Impact ($\mu g/m^3$)	Year	Maximum Impact At TX Border ($\mu g/m^3$)	Year	World Bank Guideline ($\mu g/m^3$)	Mexico Standard ($\mu g/m^3$)
RBIII & RBIV Gas	NO_x	Annual[2]	8.10	1990	0.59	1990	100	NA
RBII, RBIII & RBIV Gas			11.29	1985	0.99	1990		
		24-hr [3]					150	NA
RBIII & RBIV Gas			53.31	1985	2.57	1991		
RBII, RBIII & RBIV Gas			60.79	1985	4.19	1991		
RBII Oil, RBIII & RBIV Gas			98.79	1985	5.22	1991		
		1-hr [4]					NA	395 (0.21 ppm)
RBIII & RBIV Gas			227.94	1990	188.52	1991		
RBII, RBIII & RBIV Gas			241.59	1986	191.16	1991		
RBII Oil, RBIII & RBIV			277.69	1986	192.82	1991		
	CO	8-hr					NA	12,597 (11 ppm)
RBIII & RBIV Gas			46.31	1990	2.57	1986		
RBII, RBIII & RBIV Gas			46.31	1990	3.86	1986		
RBII Oil, RBIII & RBIV Gas			153.95	1985	7.09	1986		
	SO_2	Annual					80	78 (0.03 ppm)
RBIII & RBIV Gas			0.38	1990	0.03	1990		
RBII, RBIII & RBIV Gas			0.41	1990	0.04	1990		
		24-hr					150	340 (0.13 ppm)
RBIII & RBIV Gas			4.63	1985	0.22	1991		
RBII, RBIII & RBIV Gas			4.63	1985	0.33	1991		
RBII Oil, RBIII & RBIV Gas			90.3	1985	2.5	1991		
	PM^5 and PM_{10}	Annual					50(PM_{10}) 80(PM)	50
RBIII & RBIV Gas			5.88	1990	0.43	1990		
RBII, RBIII & RBIV Gas			6.38	1990	0.65	1990		
		24-hr					150(PM_{10}) 230(PM)	150
RBIII & RBIV Gas			72.55	1985	3.50	1991		
RBII, RBIII & RBIV Gas			72.55	1985	5.17	1991		
RBII Oil, RBIII & RBIV Gas			108.25	1985	6.39	1991		

1. These results do not consider any other background sources, except RBII.
2. Annual NOx impacts are represented as NO_2 impacts using a 0.75 correction factor (USEPA).
3. 24-hour NOx impacts are represented as NO_2 impacts using a 0.4 correction factor (New Mexico).
4. 1-hour NOx impacts are represented as NO_2 impacts applying the Ozone Limiting Method.
5. PM and PM_{10}impacts are assumed to be the same.

NA Not Applicable

Noise

The vibration environmental component was considered as Not Relevant because, although it is affected by vehicle traffic and equipment and machinery use throughout the plant operation, there are no environmental or human elements near the power plants that could be affected by the generation of vibrations.

The construction noise impacts are considered temporary and reversible and not significant since there are no potential receptors that could be affected by the noise levels generated at the plant site.

The following mitigation measures will be implemented:

- Vehicles will be required to operate in compliance with NOM-080-ECOL-1994 that establishes measurement methods and the maximum permissible limits for noise emission from motor vehicles, motorcycles and motor tricycles.

- Within the plant site, compliance with NOM-011-STPS-1993 will be verified, which establishes safety and hygiene conditions for work centers generating noise.

Turbine and auxiliary equipment operation will increase noise levels that will be permanent. The impact is considered relevant, negative, not reversible, and not significant due to the lack of potential receptors in the surrounding areas as the nearest inhabitants are at approximately 1 km from the project site, adjacent to the highway. The noise generated by the power plant will not be perceived by these receptors due to the distance and the existing background noise in the area and will be in compliance with the residential limits established by the World Bank Guidelines.

The noise levels measured at each of the plant's boundaries (RBII, III and IV) will be in compliance with the 68 dBA daytime and 65 dBA nighttime as established in NOM-081-ECOL-1994 since the standard considers only the noise levels from within the property boundaries subtracting the background levels from the other two plants.

The following mitigation measures will be implemented:

- Equipment installed will ensure the use of the noise mitigation devices in accordance with manufacturer design specifications (these are modern state of the art equipment).

- Compliance with NOM-011-STPS-1993 will be verified inside the work areas. This standard specifies the safety and hygiene conditions for work centers where noise is generated. Ear and hearing protectors will be provided for all individuals in critical areas that are exposed to noise.

- The power plants will operate in compliance with NOM-081-ECOL-1994, which establishes the maximum permissible limits for noise emission from fixed sources, as well as the measuring methods.

- A noise monitoring program/ compliance procedure will be established at the property perimeter in accordance with the NOM-081-ECOL-1994 and World Bank Guidelines.

[2] PEMEX, 1986. Manual para la evaluación y control de ruido (M.N. 04.0.01).

Water Quality

The projects will use dry cooling to minimize water use. The primary wastewater stream will be blow down from the steam cycle, which will be sent to an evaporation pond for disposal. The use of dry cooling and a closed loop water cycle will result in no significant impacts on water quality.

All the environmental components related to groundwater hydrology, such as water quality parameters, current use, and flow direction are not considered relevant because they will not be affected by the different stages of the construction and normal operation of the power plants. The groundwater hydrology is limited to Mexican territory and will therefore not impact international water resources.

In addition, the water level of the aquifer from which the water will be extracted for use in the power plant will not be reduced, considering the annual rain, infiltration rate, mean annual evaporation, area of the aquifer and pumping extractions. The water will be extracted at depths between 90 and 250 m. The use of dry cooling and a closed loop water system will result in no significant impacts on water quality. Wastewater will be sent to an evaporation lagoon for evaporation to avoid infiltrations into the subsoil or discharging into a water body.

Biological Resources

Given the disturbed nature of the site and lack of any sensitive species, no significant impacts are anticipated on biological resources.

Vegetation removal activities of site-preparation will have an adverse impact on the topsoil species that are considered not relevant because during the period the land was used for agricultural purposes, the original vegetation was removed and the existing vegetation sprang up during the period the area was unused. Re-vegetation of areas not occupied by power plant facilities is considered a mitigation measure.

As in the case of vegetation, fauna abundance will be impacted adversely during site preparation due to modifications to habitats. However, this impact will be localized. The revegetation activities mentioned above are considered to generate a localized compensatory and mitigation measure for the species in the area.

The construction of evaporation lagoons for wastewater generated by the power plants will cause an unfavorable habitat for birds and other species. This activity generates a negative, permanent, reversible, regional, and significant impact on the fauna species that will be attracted to or trapped by the lagoons. Systems will be installed to drive-away birds and prevent land species from accidentally falling into the lagoons as a mitigation measure.

Landscape

The components for scenic views and landscape components will be impacted adversely, with local extension by the removal of vegetation during site-preparation and civil work, and by equipment assembly during site construction. However, the landscape factor is considered not relevant since the sites was previously impacted by agricultural activities and the construction of RBII and the natural landscape is therefore already altered.

Socio-economy

The hiring component of the projects that requires general and specialized workers for the site-preparation, construction, operation and maintenance stages will use primarily local job applicants. Materials needed for the projects will be obtained, as much as possible, from regional providers, which will promote growth in goods and services commerce.

There are positive economic impacts within the Municipality from the taxes and fees paid by the power plant projects. The Municipal government has used these funds for public works and services, which have benefited the community as described below.

- Improvements to the urban area with public lighting and landscaping of the median of the main street.
- Remodeling of the town's main square.
- Purchase of heavy equipment to be used in for maintenance of parks and gardens.
- Patching and paving of streets.
- Development of a vocational school for computer training and electronic business.
- The Colonia Agricola Anahuac has received an ambulance, a vehicle to transport the elderly and there are plans to supply a piece of equipment for agricultural purposes.

The development of the projects also gives the community additional indirect economic benefits. The Municipal President has reported that more business such as restaurants; retail stores, workshops, etc. have emerged since the operation of RBII. Three new hotels have been established in Valle Hermoso including a four star hotel. Several restaurants, which are visited by personnel and suppliers from RBII have been remodeled and expanded. Other direct benefits from the construction and operation of RBII are the leasing of homes for the personnel and hiring of service persons.

Quantitative and published measurements of the positive impacts were unavailable, however, construction license fees paid to the municipality are as much as U.S. $88,000. Additionally, fees must be paid by the power plant facilities on an annual basis, which along with increase in commercial activities in the area as a secondary growth in business provides for considerable increase in municipal income and provides significant benefits to the local community.

Impacts on the Border Region

The area of influence of the projects is limited to the Mexican side of the border region. Environmental impacts will be mitigated to prevent emissions from exceeding accepted Mexican, World Bank and U.S. limits. The U.S. side of the border will not be impacted by any project activities and air quality; noise, water resources or biological resources will not be affected.

The power plant projects will not have any discernible socioeconomic implications on the U.S. side of the border, since all activities will be limited to the Mexican side. The plants are located some 25 km from the border and will not export electricity to the U.S.

ANALYSIS OF ALTERNATIVES

An assessment of the location and technology alternatives for the development of RBIII and RBIV power plants was conducted, comparing each alternative to the criteria established by the World Bank for this type of projects. Site location alternatives were obtained from the information presented in the MIA prepared by CFE for RBII. The technology alternatives that will be best suited for the project were obtained from the *Libro de Anteproyecto* developed by CLR in accordance with the bid specifications for the project by the CFE.

Site Location

The selection of the site for RBII, RBIII and RBIV was conducted by CFE, taking into consideration the technical specifications of the projects, as well as the geographic, environmental, and economic conditions of the region.

CFE site selection methods include regional identification of areas of exclusion and identification of potential sites. Site visits and cartographic and bibliographic reviews were conducted by CFE to determine potential sites located outside the areas of exclusion, according to the criteria established by CFE and the Mexican legal requirements, which include minimum environmental impacts.

Potential sites were then selected and analyzed in greater detail using a scale based on the affinity to each technical, economic, social, and environmental aspect of the projects to the site. The sites were evaluated in detail with the following selection factors:

- Fuel supply
- Water supply
- Associated transmission network
- Physical characteristics of the site
- Geographic characteristics
- Environmental characteristics
- Socio-economic characteristics

CFE selected Anahuac as the site that best matched the technical, environmental, and economic conditions required for the development of the projects. EDFI accepted using the site proposed by CFE.

Turbine Alternatives

RBIII and IV will use Siemens-Westinghouse 501F gas turbines, achieving 55% thermal energy efficiency (LHV) in the combined cycle mode. Siemens-Westinghouse's newest model, 501G gas turbines, can achieve 58% thermal energy efficiency (LHV), 3% higher than the 501F model. However, 501G produces 365 MW as simple cycle compared to 501F's 274 MW, and therefore, the required generating capacity of 495 MW / 500 MW for RBIII and IV is not practical to use 501G. EDFI proposed the use of 501F and this was accepted by CFE.

Use of Low NOx Burners

In order to minimize to NOx impacts EDFI evaluated the reduction in NOx and other contaminants as a result of using low NOx burners. It was determined that with the use of this technology, base on the modeling results, all the contaminants in the air were in compliance with both the Mexican Standards and the World Bank Guidelines, and therefore no other alternatives were considered pertinent.

Dry Cooling vs. Wet Cooling

Although CFE permitted the use of wet cooling towers, EDFI opted to use the dry cooling technology with an evaporation lagoon for the wastewater discharge to minimize the impact of water use. The RBIII and RBIV plants will be zero discharge plants.

RBIII and IV will use air-cooled condensers to minimize water requirements. Compared to conventional wet cooling tower system, air-cooled condensers require more capital expenditure but significantly reduce plants' water needs. Considering the water availability of the region, it was proposed by EDFI, and accepted by CFE, that air-cooled condensers will be used.

ENVIRONMENTAL ACTION PLAN

Environmental Management

EDF and its subsidiaries have developed Environmental Policies with the goal of obtaining and maintaining strict compliance with environmental requirements established by Mexican Legislation, CFE, and World Bank Guidelines, as well as internal company requirements for environmental protection. These Policies are to be implemented throughout the lifetime of the projects, from engineering, design, and site assessment to operation and maintenance and plant shutdown, dismantling and site abandonment.

An Environmental Management Manual which delegates appropriate authority to the responsible personnel for the environmental monitoring and compliance at each power plant, was developed to meet these goals, which includes the Environmental System Management based on the ISO14001 standards. The main focus of the Environmental Policy and the management system is "compliance with Mexican federal, state, and municipal and requirements, as well as World Bank Guidelines" [Environmental Management Manual for Central Lomas de Real, S.A. de C.V., 1st Rev. May 01, 2002].

The following goals and objectives have been established for the implementation of the Environmental Action Plan:

- The Environmental Action Plan will be implemented for each phase of each project.
- All environmental aspects that may be impacted during the projects phases will be monitored.
- The projects will be developed respecting, and in accordance to, the limit- values established by Mexican standards and World Bank Guidelines for environmental aspects and protection of personnel.
- Construction and start-up activities will be conducted with minimum negative impacts on the environment.

The continuous monitoring plan will be used to obtain detailed information concerning the efficiency of implemented mitigation measures which have been proposed to reduce the emission of contaminants at the site for compliance with applicable requirements and good environmental practices.

Monitoring Plan

Air Quality Monitoring Program: This program is based on the measurement of contaminant concentrations in stack emissions. Measurements are conducted in accordance with applicable Mexican and international standards and regulations and guidelines provided by the World Bank. Each power plant will be equipped with a Continuous Emissions Monitoring System. (MSCE). This MSCE will measure levels of contaminants emitted from stacks located at the RBIII and RBIV power plants. The following contaminants will be measured and monitored for compliance: SO_2, NO_x, CO, PM_{10} and Total Suspended Particles (TSP). Any deviations, any failure or defect will be promptly corrected and reported

Ambient Air Monitoring Program: An air quality monitoring program will be implemented to ensure compliance with applicable Mexican Official Standards and World Bank Guidelines for both the RBIII and RBIV Plants. A continuous monitoring program is currently in operation, equipped with three stations for continuous data gathering for NO/NO_2, CO, PST, PM_{10}, and SO_2. These stations are located at the RBII power plant. Three additional monitoring stations will be added to this monitoring network for the RBIII and RBIV power plants.

The location of the three new monitoring stations will be identified based on the Air Dispersion Modeling results. The meteorological and air quality monitoring programs will be implemented in accordance with standards and requirements for quality assurance established by Mexican environmental legislation.

Wastewater Monitoring Program: The purpose of the Wastewater Monitoring Program is to evaluate storm water that could carry oil in the areas where equipment is located. The wastewater parameters that will be evaluated at the RBIII and RBIV power plants are pH, TSP, metals, and others as required by the Mexican Regulations and will use the measurement methods in accordance with the applicable Mexican Official Standards.

All the wastewater will be sent to the separate evaporation lagoons for each power plant. The wastewater discharge to the evaporation lagoons will not require periodic monitoring. However, verification and supervision procedures will be implemented to ensure adequate handling, treatment, and final disposal by the companies hired for such purposes, as established by applicable standards and regulations.

Periodic monitoring will necessary for wastewater not discharged to the evaporation lagoons such as storm-water drains and a wastewater monitoring program will be implemented following the parameters presented in Table 3.

Table 3 Monitoring Parameters and Frequency Based on World Bank Guidelines

Parameters	Monitoring Frequency
PH	Continuous
Temperature	Continuous
Suspended Solid	Daily
Greases	Daily
Oils	Daily
Waste chlorine	Daily
Metals	Monthly
Others *	Monthly

* Other parameters required by Mexican standards

Noise Monitoring Program: In compliance with NOM-081-ECOL-1994, which establishes maximum permissible noise levels from fixed sources and methods of measurements, the area surrounding the power plants will be monitored on an annual basis for noise levels during the operation of the RBIII and RBIV power plants. Since there are no receptors within one kilometer from the power plant sites, receptor noise monitoring will not be necessary. However, periodic noise-monitoring will be conducted at the receptor locations to verify that maximum permissible levels established by World Bank Guidelines are not exceeded, to ensure that corrective actions are taken in the case of any deviations and to have adequate data in the event of any complaints from the community concerning noise levels in the surrounding areas.

Industrial Hygiene and Health and Safety Monitoring Program: RBIII and RBIV will have a personal protection program that will include all the necessary procedures to ensure personnel safety, especially for those working close to areas with high temperatures, where hazardous materials and wastes are handled, and near noise emitting sources.

A Health and Safety and Industrial Hygiene Program will be established in compliance with the Mexican Official Standards and the requirements established in the labor regulations, to include:

- Laborer/employee training
- Installation of industrial hygiene and health and safety signs and labels
- Development of an accident, emergency, and contingency prevention, reduction, and control plan

General information concerning health and safety and industrial hygiene measures will be provided to prevent unsafe and inefficient conditions and activities, and to prevent work related accidents. EDFI has been proactive in this initiative in all their power plants and plans to implement the same stringent guidelines and training to approach "Zero Accident" goal.

Documentation

The procedures for the identification, updating, and availability of documents will be part of the Environmental Management System (EMS) implementation and operation requirements. Environmental records will include:

- Information concerning environmental laws or other applicable requirements;
- Process information;
- Plant map, showing contaminant source and emission areas, potentially hazardous material storage areas, and the flow-direction in the event of spills;
- Fuel quality and content analysis;
- Inspection, audit, maintenance, and calibration records;
- Hazardous and non-hazardous waste generation, handling, storage, and final disposal documents;
- Hazardous material inventory, including quantity and exact plant location;
- Results obtained from laboratory analyses and monitoring equipment;
- Complaint records;
- Training documents;
- Contractor and provider information;
- Incident reports;
- Emergency preparations and response information;
- Evacuation route maps;
- Records of significant environmental impacts;
- Audit results;
- Management reviews and inspections.

PUBLIC CONSULTATION

In compliance with the World Bank requirements, EDFI organized a Public Information and Consultation Meeting for the construction and operation of the RBIII and RBIV power plants on Thursday, July 18, 2002. The Public Consultation and Disclosure Plan, project information disclosure process, and the Public Consultation Meeting were developed and coordinated by URS, in accordance with World Bank Guidelines and procedures.

The preparation and information disclosure activities were performed at the project site from July 1 to 17, 2002. The Meeting was held on July 18, 2002 and had a duration of approximately two hours, which included the project presentation and a question and answer session. The Public Consultation Process was a tremendous success encountering no opposition to the siting of the power plants in the region. The Community surrounding the power plant and the Municipality of Valle Hermoso participated in the Public Consultation Process. The President of the Municipality and other leaders in the community are pro-development of these projects.

The results of the Public Consultation verified that there is a general knowledge and ample acceptance of the proposed RBIII and RBIV power plant projects not only by the local authorities, but also by the majority of the residents within the municipality. The projects are considered a source of opportunities for the region. They perceive these projects as an opportunity to increase the economic level within the community and as a result avail themselves with better services and quality of life.

The Municipality promotes the location of these power plants within its jurisdiction because they provide enhanced revenues not only directly as a result of locating the power plants but also due to attracting other related commercial and service infrastructure to the community. The municipal tax revenue has increased since the start of construction of RBII at an estimated average of 15% per year. This combined with community betterment projects already in the process of being implemented has resulted in community providing total support for these projects.

EDFI representatives expressed their interest in participating along with local authorities and academic institutions in the development of educational and cultural activities within the region. To this end, the most adequate mechanisms will be analyzed and coordinated with the local authorities. Some of the mechanisms under considerations are training programs, scholarships and student exchange programs.

During the Public Consultation and Disclosure process there was no opposition to the development of the projects. However, there were some comments regarding the development of RBII by some neighbors of the Colonia Agricola Anahuac. Since the Public Consultation and Disclosure Meeting was to address the RBIII and RBIV power plant projects only, EDFI agreed to meet on a separate occasion to discuss RBII.

It is clear that the presence of the RBII power plant and work now underway on the new plants have had a positive economic impact on the municipality. Comments obtained from the Municipal President of Valle Hermoso during Public Consultation activities indicate that the power plant projects will place the Municipality of Valle Hermoso in the main sources of business information (newspapers, magazines, web pages, etc.). This will enhance opportunities to attract investments in other industries, secondary services and agriculture development. The Municipal President expects that the power plants will stimulate secondary investment in the community by as much as 10% to 25% per year. This will translate into a better quality of life for community residents and improved services. These services include better roads, enhanced and additional social services such as well-equipped medical facilities, public libraries, technical and higher education schools. Increased municipal revenues from taxes have already led to beautification projects for the town and improvements to the overall quality of life for the residents of the community and municipality.

The power plants symbolize growth and development for the municipality. The municipality is actively using the plants as a catalyst for new investment and development and has established a website (www.vallehermoso.gob.mx). The chief consideration for the municipality is to attract secondary investment; so far there has been at least a 15 % growth in revenues year over year since the start of construction of the RBII project. The construction of the other two plants is anticipated to stimulate further investments in secondary facilities, which would further attract other investments in the area.

COMMUNITY DEVELOPMENT

In accordance with the company policy, EDFI has demonstrated commitment to sustainability, community development, and the environment in its activities worldwide. The company is committed to work proactively with the community where three large power plants will operate for at least 25 years with the objective of assuring that construction and operation of the power plants will be socially sustainable. EDFI has been present in Mexico for approximately 30 years as an external consultant to CFE and since 1998 as a foreign investor. EDFI was the first independent power producer in Mexico and including these two plants (RBIII and RBIV), will have a total generation capacity of 2,250 MW through its various subsidiaries. EDFI is among the most important foreign investors in Mexico with a total investment of approximately one billion dollars during the last four years. Mexico is important to EDF in its plans for future sustainable economic development.

Economic Development Opportunities

The economy of the project area will be positively affected as goods and services needed for the project will be obtained, as much as possible, from local and regional providers. This is anticipated to further increase the capital flow into the region. In addition, all three thermal power plants will generate a combined production of approximately 1,500 MW, which will increase the current levels of energy available to the country and help attract new industries and providers of goods and services. Power generation is indispensable for continued development and the well being of the population in general.

Additionally, there are direct positive economic impacts for the Municipality from the taxes and fees paid by the power plant projects. As a result of the RBII power plant, the municipality of Valle Hermoso has seen an increase in annual municipal income during the last two years on the order of 15%. The indirect tax increase has been in the range of 5% to 12%, based on unpublished figures. The Municipal government has used these funds for public works and services, which are described below:

- Improvements in urban image with public lighting and landscaping of the median of the main street.
- Remodeling of the town's main square.
- Purchase of heavy equipment to be used for maintenance of parks and gardens.
- Patching and paving of streets.
- Development of a vocational school for computer training and electronic business.
- The Colonia Agricola Anahuac has received an ambulance, a vehicle to transport the elderly and there are plans to supply equipment for agricultural purposes.

Employment

During the construction of the power plants (around two years), the sites offer over 1400 jobs. During the operations stage, 30 qualified employees will be hired for each power plant for long-term employment. Each of these persons benefit from a high-qualification training program in operations, which is delivered in an average of 500 hours.

In addition to direct hiring, which is a source of most direct jobs, the plant's activities also promote the creation of new jobs. Many of the peripheral services are outsourced in the local communities and include several activities/services necessary for the plant operations; from painting to cleaning services to purchase supplies from the local merchants as well as other services required at the plant. They range from catering to maintenance services, security and surveillance services, staff transportation and general supplies. These create opportunities for the local communities and attract external investments to establish additional businesses in the community. These additional service providers create a significant positive impact for the community and the municipality in terms of additional employment and income for the residents.

Social Policies for Local Families

The Valle Hermoso Municipal Development Plan for 2002-2004 provides for the support of projects and development of social activities, as well as health care access as part of its strategy. EDFI has made a commitment to the local community to discuss various options for the joint development of required services or facilities based on the identified needs of the community in the long-term and has communicated the desire to work with the community on an on-going basis for the betterment of the community of which EDFI will an integral part for the lifetime of the projects. EDFI is committed to monitoring the needs of the community in which it has a stake and wants to ensure that appropriate measures are taken for sustainable community development in the future.

In the case of the RBIII and RBIV power plants, EDFI plans to support a community project on the long term and in association with IFC. EDFI is currently undertaking a diagnosis of community needs in consultation with local people and their representatives. EDFI will formalize an initial community development program with the community at the end of 2002.

Sustainable Growth

EDF Group strives to achieve dynamic and sustainable growth in a very competitive energy market around the world and is determined to strike a balance between short-term market requirements and longer-term issues of economic, technological and social performance. This is measured and monitored in various ways by setting goals for its annual expenditures within various communities and for promoting various programs that provide direct and indirect benefits to the communities. The attainment of the goals are reported each year in its annual report. In case of RBII, III and IV, sustainability will be measured as the plants are put in operations over the next few years. This will provide the basis for continuing improvements to achieve better results for the community and the facility.

New investment projects are being considered by EDFI within the ambitious development strategy based on principles of environmental and social sustainability, transparency and accountability.

In 2001 the EDF Group joined the UN's Global Compact and adopted Agenda 21, a 21-point charter designed to focus the entire Group on competitive and sustainable ways to meet ever growing global energy needs.

Local Actions for Development

In close relations with local partners, the EDF Group is involved in actions of solidarity and development throughout the world. The aim is to support initiatives that are useful to society and to stimulate growth.

EDF Group employees personally contribute to a fund that invests in developing countries to promote employment, while the EDF Group provides financial support. Additionally, Edenor and EDFI company in Argenitna, contributes through education, culture and health initiatives in countries throughout the world. Edenor's Connexion al Futuro program has been visiting the 800 primary schools of Buenos Aires, to teach 380,000 children the safe use of electricity and energy efficiency.

Additionally, Edenor in Argentina, has established programs to help low income communities get electricity at lower prepaid rates or free of charge. In one of the most marginal communities consisting of 13,000 inhabitants, Edenor has donated computer equipment and sport equipment for a soccer tournament as well as providing shelter during flooding.

Another example of community development is the work being conducted in Brazil with educational programs in cooperation with schools and water agencies. The Group has pursued its cooperation with the State University of Sao Paulo to study aquatic plant life, while working with the Rural University of Rio de Janeiro to protect aquatic life around the Lajes dam.

In marginal communities in Brazil, Light, a subsidiary of EDF, has implemented a program to standardize electricity supply in these communities. The program consists of the following:

- In conjunction with the authorities, it prioritizes the communities in need of assistance.
- Creating a specific project for each community.
- Building and expanding transmission lines and finding illegal connections
- Conducting a census of new clients.
- Giving consumers with economic hardship special commercial attention.
- Training in safety issues in the facilities and education in energy consumption and saving.
- Following up with the results and periodic inspections.

The objective of standardizing the electricity service in these communities is to reduce losses and unpaid bills and assert Light as a private company with a social responsibility as well as to maintain the distribution network based on an educational process. Persons from the communities are contracted and trained to participate in the standardization programs. Once the community has been standardized, it returns to traditional commercial contracts. By the end of 2001, Light had almost 500,000 low income customers with reduced rates with a consumption of at least 140 kWh.

EDF Group also has a partnership with Codev (Association for Cooperation in Development), which promotes sustainable development in poor countries and improve the quality of life for underprivileged populations.

Conclusions

EDFI is committed to develop long-term projects and be a part of the community for the duration of the projects and therefore understands and intends to maintain good neighbor relationships and environmental protection in the region where its projects are located. In this context, EDFI is currently selecting an appropriate long term program in Mexico associated with RBIII and RBIV projects.

EDFI is committed to establish a community development program in consultation with local stakeholders and municipal authorities. EDFI will work with IFC to this end, confer with IFC on proposed community development initiatives, and keep IFC informed of implemented activities and the results of annual monitoring of community development projects.