



December 1, 2010

Pedro J. Nieves Miranda, Esq.
President
Environmental Quality Board
1308 Ponce de León Ave.
State Road 8838, El Cinco Sector
Río Piedras, Puerto Rico 00921

**Attention: Mrs. Brenda Rodríguez, Director
Scientific Advisory Area**

Dear Mr. Nieves Miranda, Esq.:

Final Environmental Impact Statement (F-EIS)
JCA-10-0018 CFI
Renewable Energy Generation and Resource Recovery Plant
Energy Answers Arecibo, LLC
State Road PR-2, Km.73.1
Cambalache Ward
Arecibo, Puerto Rico
Case: 2010-114

A copy of the Final Environmental Impact Statement for the referenced project is included for public general inspection. In compliance with the Environmental Notice to be published on Thursday, December 2, 2010 on *Primera Hora* and *El Vocero* newspapers. In addition, in compliance with the provisions of Law Number 416 of September 22, 2004, as amended, EQB's Regulation for the Process of Presentation, Evaluation and Processing of Environmental Documents and EQB's Resolution Number R-10-26-1.

Cordially,

Joel Meléndez-Rodríguez
Permitting, Environmental and
Infrastructure Consultant

Attachment



November 26, 2010

HAND DELIVERY

Pedro J. Nieves Miranda, Esq.
President
Environmental Quality Board
PO Box 11488
San Juan, PR 00910

**Re: Revised Preliminary Environmental Impact Statement (P-EIS)
Renewable Energy Generation and Resource Recovery Plant**

Dear Mr. Nieves Miranda, Esq.:

The Puerto Rico Energy Diversification through Sustainable and Alternative Renewable Energy Policy Act, Law No. 82 of July 19, 2010 established as the public policy of the Government of Puerto Rico the diversification of power sources; the reduction of our dependence on energy sources derived from fossil fuels; the reduction and stabilization of our energy costs; the control of the volatility of electricity cost in Puerto Rico; and the preservation and improvement of our environment, natural resources and quality of life, among others.

Under the above mentioned public policy, on October 25, 2010 this Puerto Rico Industrial Government Company (PRIDCO), as Lead Agency, filed the preliminary environmental document titled Preliminary Environmental Impact Statement (P-EIS) for the Renewable Energy Generation and Resource Recovery Plant project (the Project).

PRIDCO filed the P-EIS with the Environmental Quality Board (EQB) under the Board's Resolution, R-10-26-1¹, the Environmental Quality Board Regulation for the Process of Presentation, Evaluation and Processing of Environmental Documents (RPPEPED)², Executive Order Number OE-2010-034³ ("Executive Order") and Article 4(B)(3) of Law Number 416 of September 22, 2004, as amended, known as Puerto Rico Environmental Public Policy Law ("Law 416").

As part of the procedures that are required in the above mentioned legal provisions, the following steps were taken:

- On October 25, 2010, PRIDCO filed with the Board, for its evaluation, the draft P-EIS

¹ About the Expedited Procedure to Rule the Presentation, Evaluation and Processing of Environmental Documents for Energy Projects dated August 12, 2010.

² Regulation Number 6510 dated August 22, 2002.

³ Executive Order dated July 19, 2010 Administrative Bulletin approved to activate the provisions of Law Number 76 dated May 5, 2000.

for the Project. That same day the document was available on the EQB webpage, PRIDCO, EQB library, EQB Regional Office in Arecibo, and the Arecibo Town Hall.

- PPRIDCO filed a request for a public hearing with EQB, which approved and issued the R-10-38-1 on October 25, 2010, granting PRIDCO's request regarding the draft P-EIS, as well as an extension to the deadline for comments until the date of the investigative public hearing.
- The draft P-EIS was circulated on October 25, 2010 among several government agencies for evaluation and comments, among them: the Environmental Quality Board, the Municipality of Arecibo, Puerto Rico Aqueduct and Sewer Authority, Puerto Rico Electric Power Authority, Department of Natural and Environmental Resources, Department of Agriculture, Department of Transportation and Public Works/Puerto Rico Highway and Transportation Authority, Institute of Puerto Rican Culture, Puerto Rico Planning Board, Solid Waste Management Authority, Department of Labor and Human Resources, Department of Health, Fire Department, the Energy Affairs Administration, the Puerto Rico Ports Authority, the US Fish and Wildlife Service, the Federal Aviation Administration (FAA), and the US Environmental Protection Agency (EPA), State Historic Preservation Office and the US Army Corps of Engineers.
- On October 26, 2010, PRIDCO published in two (2) newspapers of general circulation, *El Vocero* and *Primera Hora*, a Notice of Intent to Begin the Process of Evaluation of an Environmental Document for the Project.
- On October 27, 2010, EQB published in two (2) newspapers of general circulation, *El Vocero* and *Primera Hora*, a Notice of Investigative Public Hearing regarding the Evaluation of an Environmental Document for the Project.
- On November 8, 2010, the Investigative Public Hearing for the Project was held in the Municipality of Arecibo. The Examiner in charge of the procedures accepted until November 9, 2010 the filing of written comments on the proposed action, to be admitted into the official record for the investigative process.
- At the closing of the comment period, November 8, 2010, comments from the following agencies had been received: comments from consulted agencies: Energy Affairs Administration – letter dated November 1st, 2010; Puerto Rico Aqueduct and Sewer Authority – letter dated October 29, 2010; Puerto Rico Highway and Transportation Authority, Department of Transportation and Public Works – letter dated October 27, 2010; Solid Waste Management Authority – letter dated November 1st, 2010; Puerto Rico Ports Authority – letter dated November 1st, 2010; Puerto Rico Fire Department – letter dated October 27, 2010; Department of Agriculture/Land Authority – letter dated November 1st, 2010; Department of Environmental and Natural Resources – letter dated October 29, 2010; Department of Health – letter dated November 5, 2010; Puerto Rico Electric Power Authority – letter dated November 8, 2010; Institute of Puerto Rican Culture – letter dated October 26, 2010; State Historic Preservation Office – letter dated October 28, 2010; Department of Labor and Human



Resources – letter dated October 29, 2010; and the Municipality of Arecibo – letter dated November 8, 2010.

- In accordance with Part III of R-10-26-1, on November 15, 2010 the Examiner assigned to conduct the Investigative Public Hearing procedures for the title Project presented to this Board the corresponding Report.
- On November 19, 2010, the EQB Honorable Board of Governors issued Resolution R-10-43-1, which adopted the Report and issued several recommendations that should become part of the revised P-EIS to be submitted in accordance with R-10-26-1.

According to the above, the P-EIS for the Project has been revised and it addresses and discusses the recommendations and/or comments made by the EQB Honorable Board of Governors and the Examiner that was assigned to conduct the Investigative Public Hearing proceedings that were held for the Project. The revised P-EIS has been prepared in compliance with the requirements of Law Number 416 and EQB regulations, including the RPPEPED. The P-EIS and its revisions are based on scientifically rigorous technical, environmental and socioeconomic studies, which were conducted to fully comply with current local and federal regulations for the protection of the environment. The corresponding appendices are part of the revised P-EIS are, as well as the document in its digital format. As requested, five (5) printed copies and three (3) discs with the document in its digital format are attached.

Based on the above, PRIDCO respectfully submits for EQB's consideration the revised P-EIS so that its evaluation can continue in accordance to R-10-26-1, and, consequently, it is determined that the document complies with the dispositions of Law 416.

Once again we want to state the importance of this initiative to address the power needs of the Island and to contribute to its social and economic development; therefore, we thank you beforehand for your prompt assessment of subsequent stages of the Project.

Cordially,

José Ramón Pérez-Riera
Executive Director

**Preliminary Environmental Impact Statement
Renewable Power Generation and Resource Recovery Plant**

PREAMBLE

This document constitutes the Preliminary Environmental Impact Statement (P-EIS) for the Project known as *Renewable Power Generation and Resource Recovery Plant*, in Cambalache Ward of Arecibo (the Project), proposed by Energy Answers Arecibo, LLC (Energy Answers), a subsidiary of Energy Answers International, Inc. (EAI).

1. Lead Agency: Puerto Rico Industrial Development Company (PRIDCO)

2. Name of Private Entity: Energy Answers Arecibo, LLC (Energy Answers)
Box 829
Garrochales Ward
Arecibo, Puerto Rico 00652

3. Title of the Proposed Action: Renewable Power Generation and Resource Recovery Plant

Energy Answers Arecibo, LLC proposes the construction and operation of a modern Renewable Power Generation and Resource Recovery Plant (the Plant) within a site of approximately 82 *cuerdas* west of PR-2, which is part of a 92.76 *cuerdas* property that housed the old facilities of Global Fibers, Inc. in Cambalache Ward of Arecibo.

The Plant will have the capacity to: process 2,100 tons per day of Processed Refuse Fuel (PRF); generate a gross amount of approximately 80 Megawatts of electric energy, classifying as an alternate and renewable source of energy; and recover ferrous and non ferrous metals.

4. Project Need: The Project responds to the urgent need to develop new energy generation infrastructure that uses alternative sources to petroleum fuels to stabilize the high cost of electricity in Puerto Rico, in accordance with the Energy Reform public policy of the Government of Puerto Rico. The Project also addresses the pressing need to develop reliable and safe infrastructure as part of an integrated management of solid waste, as stated in the Solid Waste Management Authority (SWMA) Dynamic Itinerary for Infrastructure Projects.

5. Total Estimated Cost of Project: \$500 million (approximately)

6. Total Number of Jobs: Construction Phase: **8,287** jobs
¹ (4,283 direct jobs and 4,004 indirect and induced jobs)
Operation Phase: **825** total jobs (150 direct jobs and 675 indirect and induced jobs). See Appendix I.
7. Responsible Officer: Joel Meléndez Rodríguez
Permitting, Environment and Infrastructure Consultant
Puerto Rico Industrial Development Company
#355 FD Roosevelt Avenue Suite 404
Hato Rey, Puerto Rico 00918
8. Document Identification: This document constitutes the P-EIS where the direct, indirect and cumulative environmental impacts are discussed and evaluated as related to the construction and operation of the Project.
9. List of Scientific Staff: See **Chapter 11** of the P-EIS
10. List of Agencies to which the document was distributed for review and comment: See **Chapter 12** of the P-EIS
11. Distribution Date: November 26, 2010

¹ Construction job estimates are based on factors used by the Puerto Rico Planning Board (PRPB).

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LIST OF ABBREVIATIONS / UNITS

°C	Celsius Degree
°F	Fahrenheit Degree
°N	North Degree
AADT	Annual Average Daily Traffic
ACFM	Actual Cubic Feet per Minute
AERMOD	Atmospheric Dispersion Modeling (Model that predicts the environmental concentrations over land using AERMET, AERSURFACE and AERMAP programs)
AQCS	Air Quality Control System
ArcGIS	Geographical Information System Program used for spatial analysis.
ASL	Above Sea Level
ASR	Automotive Shredder Residue
Ba	Bajura clay soil
BACT	Best Available Control Technology
BA TM	Boiler Aggregate TM
bpf	blows per foot
BTU/hr	British Thermal Unit per Hour
BTU/lb	British Thermal Unit per Pound
CAA	Clean Air Act
CaCO ₃	Calcium Carbonate
CcD	Caracoles loam 5%-20% slopes
CcE	Caracoles loam 20%-40% slopes
CDP	Comprehensive Development Plan
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
cfs	cubic feet per second
CFU	Colony Forming Unit
CI	Compression Ignition
CLOMAR	Conditional letter of Map Amendment Request
cm	centimeter
cm/s	centimeters per second
CMRS	Commercial Mobile Radio Service
CO	Carbon monoxide
Co	Coloso silty clay loam soil
CO ₂	Carbon dioxide
COPCs	Contaminant of Potential Concern
COPEC	Contaminant of Potential Ecological Concern
CSM	Conceptual Site Model
CTC	Cambalache Transmission Center
dB	decibels
dBA	A-weighted decibels
DEM	Digital Elevation Model
DL	Developable Land (zoning classification of land use)
DLHR	Department of Labor and Human Resources

DNER	Department of Natural and Environmental Resources
DS-2	Nonhazardous Solid Waste
DSC	Distributed Control System
DSCFM	Dry Standard Cubic Feet per Minute
DTC	Diagnostic and Treatment Center
DTPW	Department of Transportation and Public Works
EAC-PR	Groundwater test well located at Site
EAI	Energy Answer International
EBSLs	Ecological Based Screening Level
EIS	Environmental Impact Statement
EJ	Environmental Justice
ELA	Commonwealth of Puerto Rico
ELCR	Excess Lifetime Cancer Risk
ELV	End of Life Vehicles
EPA	Environmental Protection Agency
EQB	Environmental Quality Board
ESAs	Environmentally Sensitive Area
ESC	Erosion and Sediment Control (Plan)
F-EIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLO-2D	Hydraulic Analysis Model
FYIP	Four-Year Investment Plan
GAP	Gap Analysis Program – US Geological Survey Program that contains a comprehensive collection of information about the soil cover in Puerto Rico, distribution and natural history of vertebrates, and management areas.
GIS	Geographic Information System
gpm	gallons per minute
hab/km ²	amount of inhabitants per square kilometer
HAP	Hazardous Air Pollutant
HCL	Hydrogen chloride
HDD	Horizontal Direct Drilling
HEC-HMS	Hydrologic Engineering Center's Hydraulic Modeling System
HF	Hydrogen Fluoride
H-H	Hydraulic and Hydrological Study
HHRA	Human Health Risk Assessment
HHRAP	Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities
HI	Heavy Industrial (zoning classification for land use)
HP	Horsepower
IPC	Institute of Puerto Rican Culture
K	Kelvin (thermodynamic temperature scale)
kg	kilogram
km	kilometer
km/h	kilometers per hour

km ²	square kilometers (area)
KOP	Key Observation Point
KV	kilovolts
KVA	kilovolts-amperes
KW	kilowatts
KW/H	kilowatts per hour
KWh/ton	kilowatts hour per ton
L ₁₀	Level of noise exceeded 10% of the time
lb/day	pounds per day
LCD	Liquid Crystal Display
Leq	Equivalent Continuous Sound Level
LI-2	Light Industrial 2 Zoning (zoning classification for land use)
LiDAR	Light Detection and Ranging
LOS	Levels of Service
LPRA	Laws of Puerto Rico Annotated
LS	Landfill System
m	meter
m ²	square meters (area)
m ³	cubic meters (volume)
m ³ /s	cubic meters per second (volume)
MACT	Maximum Achievable Control Technology
MBAS	Methylene-Blue Active Substances
MCL	Maximum Contaminant Level
MG	million gallons
mg/L	milligrams per liter
mg/m ³	milligrams per cubic meter
mgd	million gallons per day
mi ²	square miles (area)
mL	milliliters (volume)
MMBTU/hr	Million British Thermal Units per Hour
mph	miles per hour
MSP	Material Separation Plan
MSW	Municipal Solid Waste
MVA	megavolts-amperes
MW	megawatts
MW/H	megawatts per hour
MWC	Municipal Waste Combustion
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969, as ammended
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
NO ₂	Nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOx	Nitrogen oxides
NPDES	National Pollutant Discharge System

NRCS	Natural Resources Conservation Service
NSPS	New Source Performance Standards
NSR	New Source Review (EPA Program for atmospheric pollution permitting)
NTU	Nephelometric Turbidity Unit
NWI	National Wetland Inventory
O ₂	Oxygen
O ₃	Ozone
OCC	Old Corrugated Cardboard
OCMA	Office of the Commissioner of Municipal Affairs
OSHA	Occupational Safety & Health Administration
Pb	Lead
PCBs	Polychlorinated Biphenyls
PCDDs	Polychlorinated Dibenzodioxins
PCDFs	Polychlorinated Dibenzofurans
PDF TM	Process Derived Fuel
P-EIS	Preliminary Environmental Impact Statement
pH	Potential of Hydrogen - measure of acidity
PM ₁₀	Particulate matter with diameter of 10 micrometers or less
PM _{2.5}	Particulate matter with diameter of 2.5 micrometers or less
PMO	Permits Management Office
POT	Municipal Land Use Plan (<i>Plan de Ordenamiento Territorial</i>)
ppm	parts per million
PPP	Public-Private Partnerships
PR- #	State Road – “#”
PR	Puerto Rico
PRASA	Puerto Rico Aqueduct and Sewer Authority
PREPA	Puerto Rico Electric Power Authority
PRF TM	Processed Refuse Fuel TM
PRHTA	Puerto Rico Highway and Transportation Authority
PRIDCO	Puerto Rico Industrial Development Company
PRPB	Puerto Rico Planning Board
PRTRB	Puerto Rico Telecommunications Regulatory Board
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PUT	Land Use Plan (<i>Plan de Uso de Terrenos</i>)
PUTPR	Puerto Rico Land Use Plan (<i>Plan de Uso de Terrenos de Puerto Rico</i>)
Qa	Alluvial plain deposits or alluvial soils
Qbq	Beach deposits
Qcd	Cemented dunes
Qd	Sand deposits
Qdt	Transitional deposits
Qf	Surficial deposits
Qs	Swamp deposits
QTs	Blanket deposits
R-0	Low density Residential Use (zoning classification of land use)
RCAP	Regulation for the Control of Atmospheric Pollution

REC	Renewable Energy Certificates
RGA	<i>Río Grande de Arecibo</i> (Arecibo Main River)
RPA	Regulations and Permits Administration
RPM	Revolutions per Minute
RPPEPED	EQB Regulation for the Process of Presentation, Evaluation and Processing of Environmental Documents
SCS	Soil Conservation Service
SHPO	State Historic Preservation Office
SILs	Significant Impacts Levels
SLERA	Screening-Level Ecological Risk Assessment
SMC	Significant Monitoring Concentration
SO ₂	Sulfur dioxide
SPCCP	Spill Prevention Control and Countermeasures Plan
SPSWM	Strategic Plan for Solid Waste Management
SPT	Standard Penetration Test
SRCRS	Selective Regenerative Catalytic Reduction System
SWMA	Solid Waste Management Authority
SWPPP	Stormwater Pollution Prevention Plan
Tay	Aymamon Limestone Formation
Tca	Camuy Formation and Aymamon Limestone
TDF	Tire Derived Fuel
TDF	Tire-Derived Fuel
To	Toa silty clay loam
tpa	tons per year
tpd	tons per day
tph	tons per hour
TS	Transfer Stations
TSD	Total Dissolved Solids
umhos/cm	micromhos-standard unit (conductivity unit)
US	Urban soil (zoning classification of land use)
USA	United States of America
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
V	volts
VOC	Volatile Organic Compound
VOC	Volatile Organic Compounds
WQSR	Water Quality Standards Regulation
WTE	Waste To Energy
µg/m ³	micrograms per cubic meter

EXECUTIVE SUMMARY

This document constitutes the Environmental Impact Statement (P-EIS) for the Renewable Power Generation and Resource Recovery Plant Project (Plant or Project). The lead agency for the Project is the Puerto Rico Industrial Development Company (PRIDCO), while Energy Answers Arecibo, LLC (Energy Answers) is the owner (Owner) and the private entity in charge of its development, construction and operation.

This P-EIS is filed with the Environmental Quality Board (EQB) in compliance with: (1) the provisions of Executive Order OE-2010-034 of August 12, 2012, (2) Resolution 10-26-1 issued by the EQB, regarding the Expedited Procedure to Rule the Presentation, Evaluation and Processing of Environmental Documents for Energy Projects, (3) Article 4(B)(3) of Law Number 416 of September 22, 2004 as amended, known as “Environmental Public Policy Law”, and (4) Law Number 76 of May 5, 2000.

As part of the procedures required by the laws mentioned above, the following steps were completed:

- On October 25, 2010, PRIDCO filed with EQB for its evaluation the draft P-EIS for the Project. That same day the document was available on the EQB webpage, PRIDCO, EQB library, EQB Regional Office in Arecibo, and the Arecibo Town Hall.
- PRIDCO filed a request for a public hearing with EQB, which approved and issued R-10-38-1 on October 25, 2010, granting PRIDCO’s request regarding the draft P-EIS, as well as an extension to the deadline for comments until the date of the investigative public hearing.
- The draft P-EIS was circulated on October 25, 2010 among several government agencies for evaluation and comments, among them: Environmental Quality Board, Municipality of Arecibo, Puerto Rico Aqueduct and Sewer Authority, Puerto Rico Electric Power Authority, Department of Agriculture, Department of Transportation and Public Works/Puerto Rico Highway and Transportation Authority, Institute of Puerto Rican Culture, Puerto Rico Planning Board, Solid Waste Management

Authority, Department of Health, Fire Department, and the Energy Affairs Administration.

- On October 26, 2010, PRIDCO published in two (2) newspapers of general circulation, *El Vocero* and *Primera Hora*, a Notice of Intent to Begin the Process of Evaluation of an Environmental Document for the Project.
- On October 27, 2010, EQB published in two (2) newspapers of general circulation, *El Vocero* and *Primera Hora*, a Notice of Investigative Public Hearing Regarding the Evaluation of an Environmental Document for the Project.
- On November 8, 2010, the Investigative Public Hearing for the Project was held in the Municipality of Arecibo. The Examiner in charge of the procedures accepted until November 9, 2010 the filing of written comments on the proposed action to be admitted into the official record for the investigative process.
- At the closing of the comment period, November 8, 2010, comments from the following agencies had been received: comments from consulted agencies: Energy Affairs Administration – letter dated November 1st, 2010; Puerto Rico Aqueduct and Sewer Authority – letter dated October 29, 2010; Puerto Rico Highway and Transportation Authority, Department of Transportation and Public Works – letter dated October 27, 2010; Solid Waste Management Authority – letter dated November 1st, 2010; Puerto Rico Ports Authority – letter dated November 1st, 2010; Puerto Rico Fire Department – letter dated October 15, 2010; Department of Agriculture/Land Authority – letter dated November 1st, 2010; Department of Environmental and Natural Resources – letter dated October 29, 2010; Department of Health – letter dated November 5, 2010; Puerto Rico Electric Power Authority – letter dated November 8, 2010; Institute of Puerto Rican Culture – letter dated October 26, 2010; State Historic Preservation Office – letter dated October 28, 2010; Department of Labor and Human Resources – letter dated October 29, 2010; and the Municipality of Arecibo – letter dated November 8, 2010.
- In accordance with Part III of R-10-26-1, on October 15, 2010 the Examiner assigned

to conduct the Investigative Public Hearing procedures for the title Project presented to this Board the corresponding Report.

- On November 19, 2010, the EQB Honorable Board of Governors issued Resolution R-10-43-1, which adopted the Report and issued several recommendations that had to be part of the revised P-EIS to be submitted in accordance with R-10-26-1.

The draft P-EIS for the Project was revised accordingly, to include and discuss the recommendations of the Honorable Board of Governors of the EQB and of the Review Panel that was assigned to conduct the Investigative Public Hearing proceedings that were held for the Project.

The revisions to the draft P-EIS filed on October 25, 2010 constitute the environmental document hereby submitted and identified as P-EIS of November 24, 2010. This P-EIS has been prepared in compliance with the requirements of Law Number 416 and EQB regulations, including the Regulation for the Presentation, Evaluation and Processing of Environmental Documents. The P-EIS and its revisions are based on scientifically rigorous technical, environmental and socioeconomic studies, which were conducted to fully comply with current local and federal regulations for the protection of the environment. The revised P-EIS includes Appendix R (Responses to Comments in the EQB Interlocutory Resolution), where comments from the EQB Interlocutory Resolution (R-10-43-1) are answered, including the Review Panel Report, comments from agencies to the draft P-EIS and comments from the Public Hearing process. The corresponding appendices, as well as the digital format document to be uploaded to the EQB webpage, are part of the P-EIS.

Description of the Proposed Action

The Project consists of the construction of a Renewable Power Generation and Resource Recovery Plant (Plant or Project), to convert solid waste into electricity in an industrial site of approximately 82 *cuerdas*, that was used in the past as a paper mill and is located at Km 73.1 of State Road PR-2 in Cambalache Ward of Arecibo. The generated electricity will be purchased by the Puerto Rico Electric Power Authority (PREPA) through the terms

stipulated in the purchase and sale agreement that was signed between PREPA and the Owner (Power Purchasing and Operating Agreement), and will be transmitted or injected into the Island distribution system.

Energy Situation and Solid Waste Management in Puerto Rico

- There is an urgent need to develop new energy generation infrastructure that uses alternative sources to petroleum fuels to stabilize the high cost of electricity in Puerto Rico, thereby reducing fossil fuel emissions associated with climate change in accordance with the public policy established in the Government of Puerto Rico Energy Reform.
- The Project addresses the urgent need to develop reliable and environmentally safe infrastructure as part of an integrated management of solid waste and in accordance with the policy established in the Dynamic Itinerary for Infrastructure Projects of the Puerto Rico Solid Waste Management Authority (SWMA).
- The solid waste management system in Puerto Rico serves seventy-eight (78) municipalities that generate about four (4) million tons per year of residential, commercial and industrial residues.
- EPA Region 2 noted that: (1) the management and disposal of solid waste has long been a challenge in Puerto Rico; (2) the problem is compounded by the limited space available in an island community and the delicate balance of ecosystems of Puerto Rico; (3) Puerto Rico residents generate more solid waste than residents in the States, and recycling rates are lower; (4) much of the solid waste volume generated in the Island ends up in one of the 30 landfills, most of which do not meet state or federal requirements for landfills; and (5) that the solution is a comprehensive plan for the integrated management of solid waste.
- In 2007, SWMA developed an Itinerary for Infrastructure Projects (Itinerary) to implement strategies for the development of infrastructure to handle solid waste in Puerto Rico for the next 25 years;

- According to the SWMA, there will be 30 operational landfills by the end of 2010, 14 in 2015 and 13 in 2020; only one will be operating limitedly on the north coast.
- In order to successfully implement the strategy of diverting waste from disposal in landfills, the Itinerary recommends the development of two facilities with thermal processing technology with a combined processing capacity of approximately 2,910 tons per day.
- Specifically, the Itinerary recommends the development of a facility with a capacity of 1,350 tons per day in the Northwest Region, to be operational in 2012, and a facility with a capacity of 1,560 tons per day in the Northeast Region, which would be operational in 2013.

EAI develops environmentally safe power generation and resource recovery systems and has been owner and operator of these systems. EAI technology distinguishes itself because EAI plants are designed to maximize the recovery of materials and energy from the municipal solid waste stream. EAI's main goal is to eliminate waste or achieve "zero disposal" through maximum recovery of resources or materials that are perceived as waste. To achieve this goal, EAI designed and developed the system for the production of PRF. The Project responds to various urgent and serious needs in Puerto Rico regarding energy generation, solid waste, economic development, environmental protection, and efficient use of land.

A plant such as that proposed by the Project would have enough capacity to: (1) meet the estimated demand for solid waste disposal as established for the Northwest Region in the Dynamic Itinerary, (2) assist with the management of commercial waste of the region, and (3) add to the existing recovery and recycling infrastructure.

The Plant will be able to:

- Generate a gross amount of 80 Megawatts of energy, classifying as an alternative renewable energy source;
- Process 2,100 tons per day (based on a seven-day week) of Processed Refuse Fuel TM

(PRF);

- Recover and recycle 280 tons per day of ferrous metals (such as iron and steel, among others) and nonferrous metals (aluminum, copper, tin, etc.);
- Control combustion emissions by using an emission control system evaluated and approved by the EPA.

The Plant will consist of the following components (see **Figure ES-1**):

- Component 1: Receiving of Solid Waste
 - A reduction in the amount of solid waste generated by communities, industry and government will be actively promoted through effective programs to reduce, recycle and compost.
- Component 2: Production of PRF
 - This component includes weighing, unloading and inspection of the solid waste that will arrive to the Plant mostly in trucks, which will vary in type and size.
 - In addition, solid waste is shredded to form the PRF, after an initial ferrous metal recovery process.
 - In this stage, the PRF is subjected to a process of detection and recovery of ferrous and nonferrous materials through industrial magnets.
- Component 3: Renewable Power Generation
 - In the third stage the combustion of PRF takes place in spreader-stoker boilers that produce steam and generate electricity using a steam turbine, thus constituting an alternative and renewable source of energy production.
 - EAI's patented technology includes the use of grates in the boiler, where a stream of distribution air will blow the PRF into the boiler, therefore resulting in a highly efficient suspended combustion, which in turn results in a reduction

in ash generation. The process will generate two (2) types of ashes, representing a total of approximately 20% (by weight) of the PRF that will be processed at the Plant.

- It is at this stage that the Emission Control System evaluated and approved by the EPA is activated. This Emission Control System constitutes the Maximum Achievable Control Technology (MACT) and the Best Available Control Technology (BACT).
- It is at this stage that the conditioning of fly ash occurs, resulting in a material that has been consistently proven as non-hazardous by analytical methods (Toxicity Characteristic Leaching Procedure, TCLP), has a consistency similar to that of mortar, has the capacity to harden as cement, and has been found able to be effectively reused or safely disposed of as a landfill cover material.
- The bottom ash, once collected, will be processed through a proprietary EAI technology that produces Boiler Aggregate™. This aggregate has been effectively used as a material that allows the ventilation of landfill gas, for road paving and other construction-related products.

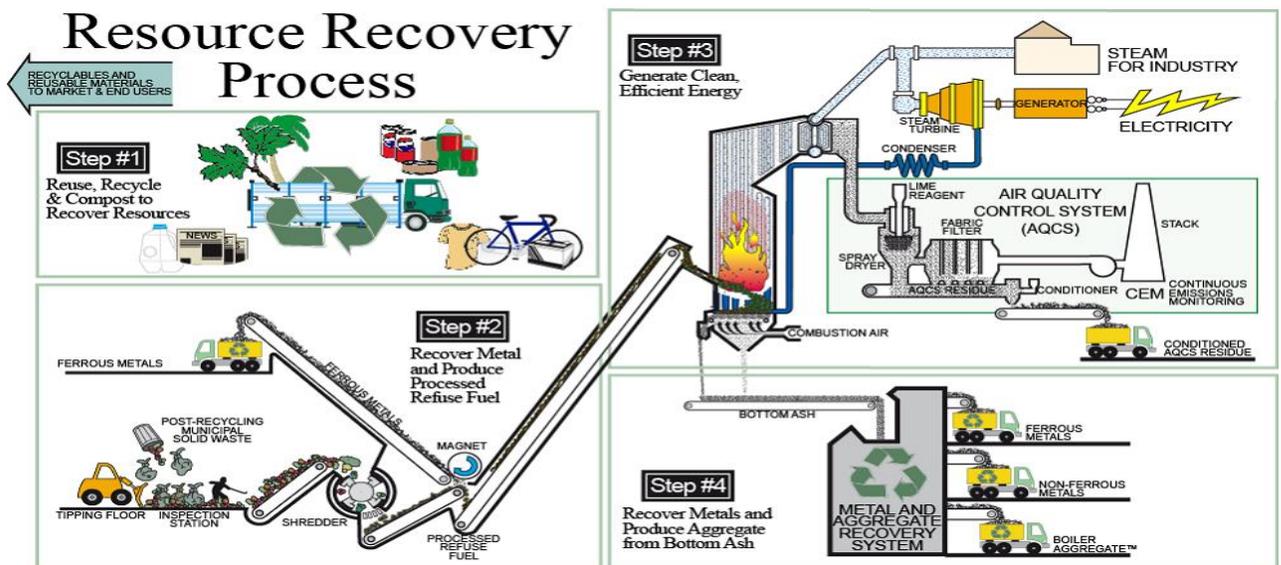


Figure ES-1: Simplified Renewable Power Generation and Resource Recovery Process Flowchart

Part of the Project is also the completion of several off-site tasks to:

- Provide 2.1 MGD brackish water for the cooling tower and boiler steam production, to be pumped from the surplus that the Department of Natural and Environmental Resources (DNER) discharges from Caño Tiburones into the ocean, and will be transferred by force line from El Vigía Pump Station to the Plant; and
- Connect the power production of the Plant to the PREPA distribution network. PREPA determined that the best interconnection point would be the Cambalache Transmission Center (CTC), located at approximately 0.5 miles south of the Plant site.
- Floodway limits have been revised to follow the perimeter of the proposed development, and to reclassify the land as Zone AE outside the floodway, where the provisions of Section 7.03 of Regulation #13 apply. The proposed amendment would require a change to the topography of the area between the Project site and the river channel, for a maximum ground elevation of 3.5 meters-msl, and to provide greater flow area along the river bank. The letter requesting the amendment to the FEMA Flood Map was filed with the PRPB on October 8, 2010.

The main characteristics of the existing environment in the Project site area include:

- The existing environment in the area where the Project will be located is primarily rural with isolated industrial areas and small residential settlements.
- Land use was dominated until the early 1980s by the former Cammbalache Sugar Mill activities. Later land use continued to be agricultural (hay), with some industrial developments. Currently, there are several abandoned steel-framed industrial structures occupying the site. The nearest residence is located at 569 meters from the center of the site, but there are no residential areas or tranquility zones near the site.
- The topography within the site and the areas around it is typical of valleys and is essentially flat, with elevations ranging from 1 to 7.5 meters above mean sea level. Earth crust movement and artificial fill deposit are included as part of the proposed

action. However, those activities will not result in a significant environmental impact because the topography was previously impacted during construction of the paper mill.

- There are five (5) percolation ponds for the storing of stormwater runoff and process water from the paper mill. It is proposed to cut their top or berms to an elevation of 3.5 meters above mean sea level. The resulting environmental impact will not be significant.
- There are no rivers or creeks within the site. However, the *Río Grande de Arecibo* (RGA) is adjacent to the west side of the site. No direct or significant impact to the RGA due to the construction of the Project is anticipated. The minimum 5-meter strip of land measured from the edge of the river will be kept, as required by Law Number 49 of January 4, 2003, as amended.
- The Jurisdictional Wetland Study concluded that there are approximately 2.49 *cuerdas* (2.42 acres) of jurisdictional water bodies within the site, including an area of 1.52 *cuerdas* (1.48 acres) of unused artificial stormwater channels, and 0.97 *cuerdas* (0.94 acres) of the area where these channels overflow. It is anticipated that these will be modified as part of the Project. However, the modifications will not result in a significant environmental impact as these areas were artificially created.
- The Flood Insurance Rate Map shows that the site is located within a floodway Zone AE, and the base flood level is 5.2 msl (17.06 feet).
- Brownfield vegetation typical of abandoned industrial areas can be observed in the site and adjacent properties, where herbaceous species are dominant, mostly grasses with some woody species. All identified species are common and widely distributed on areas near large rivers of the Island. None of the species of flora and fauna identified in the study areas are considered as critical, threatened or endangered under state and federal regulations. Although the vegetative cover within the Project area will decrease and some short term displacement of fauna species will occur, it is possible that some of these species will return to the site after completion of the construction phase of the Project. Therefore, no significant environmental impact on the flora and fauna found

within the site is expected.

- Regarding the cultural resources, through the data obtained during the file investigation and the negative results of stratigraphic cuts (Phase IB) conducted, it was concluded that the Project does not affect cultural resources as included in the National Register of Historic Places. Therefore, no significant or cumulative impacts to cultural impacts will occur from the proposed action.
- The Plant will be connected to PRASA potable water lines and the sanitary trunk located in State Road PR-2 adjacent to the site. There will be no significant impact to the existing infrastructure as it has ample capacity to meet the needs of the Project.