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Company registered in the Republic of Panama

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Marco L. Diaz V.
Marine Biologist and Oceanographer with 34 years of experience

Donor of the Isla Iguana Foundation

Vision

Support clients in planning, designing, building, and operating projects in general, maintaining high standards of environmental quality and complying always with current national and international environmental regulations.

Mission

Lead the field of environmental consulting and auditing, maintaining high moral and ethical values; and becoming a strategic partner of our clients.

WHY YOUR BEST OPTION?

MORE THAN 27 YEARS OF EXPERIENCE

We have successfully managed 11 EIS Category 3; 28 EIS Category 2; more than 200 EIS Category 1; 8 Environmental Audits and PAMA; and 10 Environmental Studies with International Banking standards, including institutional strengthening projects for environmental and social units.

Most of our clients stay with us as their Environmental Auditor for follow-up during the construction and operation of their projects; Therefore, our experience covers the entire environmental management process. None of our EIS have been rejected.

Values

Climate Change

LEED

EXPERIENCE IN CLIMATE CHANGE AND "GREEN" PRODUCTS

We analyze the impacts of climate change on projects and vice versa. In addition, we created environmental and social management plans for projects that apply for "Green" licenses.

VAST EXPERIENCE IN PUBLIC CONSULTATION

We have successfully completed public consultation processes while developing EIS and 12 public forums.

We have submitted comments and proposals for changes to all processes to modernize the standard governing EIS in Panama.

ENERGY

PANDO AND MONTE LIRIO HYDROELECTRIC POWER PLANTS

Middle Basin of the Chiriquí Viejo River, Chiriquí Province
With standards for the IDB and the World Bank (IFC)

Sep 2009 – Feb 2010

Aug 2016 to date

⇒ Inspections and quarterly reports are prepared to quantify compliance with the implementation of mitigation procedures.

Erosion · Clearing Native Forests · Reforestation · Caudals · Flora & Fauna Rescue · Archeology · Contingencies · Ambient Noise · Occupational Noise

⇒ Quarterly aquatic biota samplings, which are provided in separate reports, include fish, electric rod (Electro Fisher), periphyton, insects and aquatic invertebrates. Water quality is measured with multiparameter, and some parameters are quantified in an accredited laboratory. The flow rates were supplied by the Customer. Sep 2009-Feb 2010 and Aug 2016-Dec 2022.

Continental Water Quality · Aquatic Biota: Periphyton, Insects, Invertebrates, Fish

ENVIRONMENTAL MANAGEMENT AND ACTION PLAN

Aug 2009 – Feb 2010

⇒ The EIS Category 3 was updated to a Social & Environmental Management Plan according to World Bank and the Inter-American Development Bank Standards.

⇒ The baseline was validated by monthly sampling for one year of:

Continental Water Quality · Flora & Fauna Inventory · Aquatic Biota: Periphyton, Insects, Invertebrates, Fish

⇒ Detailed procedures were generated to mitigate, compensate, and monitor the identified environmental impacts; and prevent and contain identified environmental risks.

⇒ The Management Plan also identified the actors who would execute the plan, training of client's personnel and contractors; and detailed the content of the compliance reports to be delivered to ANAM and banks.

⇒ Another product included an Environmental Action Plan which detailed Client's responsibilities for each action embodied in the procedures, its Environmental Unit, its contractors, and the External Environmental Auditor.

⇒ Participated in public consultation workshops, in support of the social component; and in teleconferences to support the results before bank evaluators.

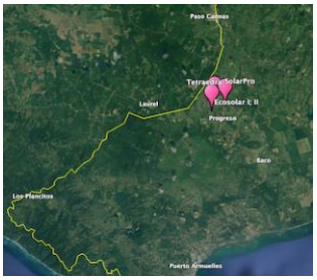
Community Meeting · Public Forum · Surveys · Interviews

ENERGY

PHOTOVOLTAICS INVESTMENTS CORP.
TETRAEDRA HOLDING INC.
PHOTOVOLTAICS DEVELOPMENTS INC.
TETRAEDRA INVESTMENT INC.
AGUAFUERTE, S.A.
AQUAVOLTAIC, S.A.
PHOTOVOLTAIC CORPORATE CORP.
PHOTOVOLTAIC OPERATIONS CORP.
PHOTOVOLTAIC VENTURE CORP.

SOLAR FIELDS

Progreso, province of Chiriquí



Ecosolar I
Feb. 2019-Mar. 2021
Ecosolar II
Aug. 2019-May. 2021
Tetraedra
May. 2022 to date
Solar Pro
Jul. 2022 to Date

⇒ Inspections and quarterly reports to quantify compliance with the implementation of mitigation procedures. Permits were processed.

⇒ Monitoring:

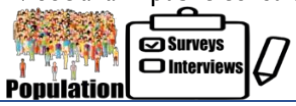
⇒ Social: work offered to neighbors during construction.

ECOSOLAR I	Jul-Aug 2019
ECOSOLAR II	Nov 2018-Feb 2019
TETRAEDRA	Jan-Aug 2020
SOLAR PRO	Mar-Jul 2022

⇒ Base Line, impacts assessment and mitigation procedures:

⇒ Risk assessment for:

⇒ Social and public consultancy:



ENERGY

RÍO ALEJANDRO ENERGY PARK (PERA) DREDGING OF THE NAVIGATION CHANNEL AND THE TURN BASIN OF BAHÍA LAS MINAS

Alejandro River, Puerto Pilon, district, and province of Colón.

Jun 2016 to date

⇒ Inspections and quarterly reports are carried out to quantify compliance with the implementation of mitigation procedures. Permits were processed.

⇒ Monitoring:

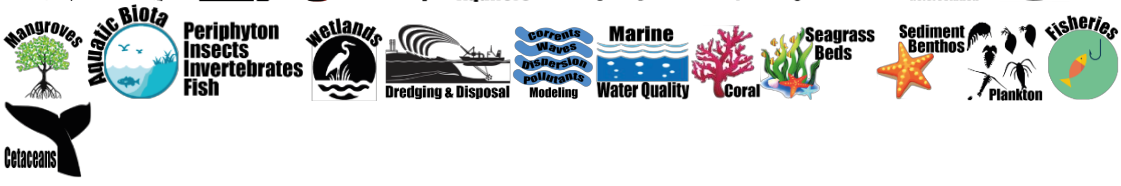
GAS TO POWER PANAMA

Feb – Dec 2017

RÍO ALEJANDRO ENERGY PARK

Aug 2015 – Sep 2016

⇒ Base Line, impacts assessment and mitigation procedures:



⇒ **Climate Change**: Sea level rise was estimated. Reduction of greenhouse gas emissions in the energy matrix of Panama was estimated.

⇒ Risks' assessment for:

⇒ Social Base Line & Public Consultancy:

ENERGY

PSA SISTEMAS AISLADOS

ISOLATED GENERATION SYSTEMS

Darién Province: Boca de Cupe, Garachiné, Jacque, La Palma, Otoque, Santa Fe, Tortí, Tucutí and Yaviza.
Region of Guna Yala: Narganá, Río Azúcar. Islands of the Gulf of Panama: Chepillo, Saboga, San Miguel, Taboga.
Bocas del Toro: Colon Island

VOLUNTARY ENVIRONMENTAL AUDITS AND PAMA TO THE THERMOELECTRIC PLANTS OF YAVIZA, TABOGA AND SABOGA

Dec 2022 to date

⇒ Inspections and documents reviewed to prepare the Audit *Plan*, the *Voluntary Environmental Audit*. Once findings were identified, the *Environmental Adequation and Management Plan* (EAMP; PAMA in Spanish) was prepared to adequate the operations to comply with current environmental standards.

COMPLIANCE AND MONITORING OF THE SANTA FE, TORTÍ (DARIÉN) AND ISLA COLÓN (BOCAS DEL TORO) THERMOELECTRIC PLANT

Jul 2020 to date

⇒ Inspections and semi-annual reports are prepared to quantify compliance with the execution of operation activities and improvements, for which they have PAMA. Permits were processed.

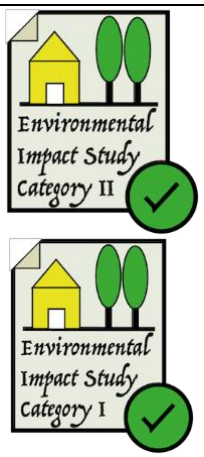
⇒ Monitoring:

15 THERMOELECTRIC PLANTS

May – Jun 2020

⇒ Environmental Audit inspections to facilities that operated for many years.
⇒ Review of environmental documentation provided by the former owner, including Environmental Audit Reports, EIS, PAMAs, Compliance Reports.
⇒ Review of the files in the regional offices and DIVEDA of the Ministry of Environment.
⇒ Identification of environmental, social, and bad practices that required mitigation and/or adaptation actions.
⇒ Neighboring residents and neighbors were interviewed. Recommendations were issued and short-term (immediate), medium-term (next 3 months) and long-term (1 year) actions were identified to comply with environmental standards.

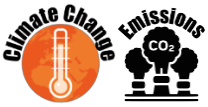
ENERGY



EIS CATEGORY II, SANTA FE NLG POWER	Dec 2018 – Sep 2019
TORTÍ NLG POWER PLANT	Mar - Jun 2019
PROGRESO'S THERMOELECTRIC PLANT	Aug – Nov 2021

⇒ Base Line, impacts assessment and mitigation procedures:

⇒ **Climate Change**: The effect of the reduction of greenhouse gas emissions in the energy matrix of Panama due to the change of fuel to Liquefied Natural Gas was evaluated.



⇒ Risks' assessment for:

⇒ Social Base Line & Public Consultancy:

ENERGY

ELETA
SINGLE ORIGIN COFFEE

CAFÉ DE ELETA, S.A.

Piedra Candela, Chiriquí province

CANDELA HYDROELECTRIC PROJECT

Mar 2004

⇒ Eleta Coffee built a mini-hydroelectric plant to generate electricity for their facilities to process coffee and sell the extra energy to the National Integrated System.

⇒ Base Line, impacts assessment and mitigation procedures:

⇒ Risks' assessment for:

⇒ Social Base Line & Public Consultancy:

ELETA

ELETA GROUP

Chiriquí Viejo River, Chiriquí Province

TIZINGAL HYDROELECTRIC PLANT

Sep 2014

⇒ Review of environmental documentation provided by the former owner, including EIS and its extensions.
⇒ Review of files in the regional office & national direction of the Panamanian Environmental Authority.
⇒ Identification of environmental, social, and bad practices that required mitigation and/or adaptation actions.
⇒ It was recommended NOT to buy the project.

ENERGY

THERMO-BARGE TO BUNKER AND SITE SELECTION FOR NLG

AES Panamá

Las Minas Bay and Telfer, Colón province

Compliance & Monitoring

2014 – 2015

⇒ Inspections and quarterly reports were conducted to quantify compliance with the implementation of mitigation procedures. Permits were processed.

⇒ Monitoring:

INSTALLATION OF BARGE GENERATOR ESTRELLA DEL MAR I AND ADAPTATION OF REQUIRED AREAS

Apr – Sep 2014

Environmental Impact Study Category II

EIS Manager

⇒ Base Line, impacts assessment and mitigation procedures for:

⇒ **Climate Change**: The rise in sea level in coastal structures and the effect of emissions on the local climate were evaluated, considering cumulative impacts with other surrounding thermoelectric plants.

⇒ Risk assessment for:

⇒ Population and public consultancy:

TWO SITES TO LOCATE A GAS THERMOELECTRIC PLANT

Apr 2015

⇒ Two sites provided by Client were evaluated to build and operate a thermoelectric plant. Several variables were evaluated comparing results and scored according to an Environmental Sensitivity Index (ESI). The variables studied were:

⇒ **Climate Change**: The impacts of rise in sea level on coastal structures and the effect of emissions on the local climate were evaluated, considering cumulative impacts with other surrounding thermoelectric plants.

ENERGY

CELSIA

BLM: Cativá, province of Colón.
Dos Mares: Chiriquí River, Chiriquí Province

ENVIRONMENTAL AND SOCIAL DUE DILIGENCE OF THE BAHÍA LAS MINAS THERMOELECTRIC PLANT (BLM); AND THE DOS MARES HYDROELECTRIC COMPLEX

Jul 2014

⇒ Environmental Audit Inspection of facilities that operated for many years.
⇒ Review of environmental documentation provided by the former owner, including Environmental Audit Reports, EIS, PAMAs, Compliance Reports.
⇒ Review of files in the regional office and DIPROCA of ANAM.
⇒ Identification of environmental, social, and bad practices that required mitigation and/or adaptation actions.
⇒ Recommendations were issued and short-term (immediate), medium-term (next 3 months) and long-term (1 year) actions were identified to comply with national environmental standards.

AGUA Y ENERGÍA, S.A.

Chiriquí Province

GUALAQUITA, CHORCHA AND SAN ANDRÉS HYDROELECTRIC PROJECTS

2009 - 2010

⇒ Inspections and semi-annual reports were prepared to quantify compliance with the execution of mitigation procedures. Permits were processed.

ENERGY

Atlantic Generator

ATLANTIC GENERATOR

Cativá, Colón Province

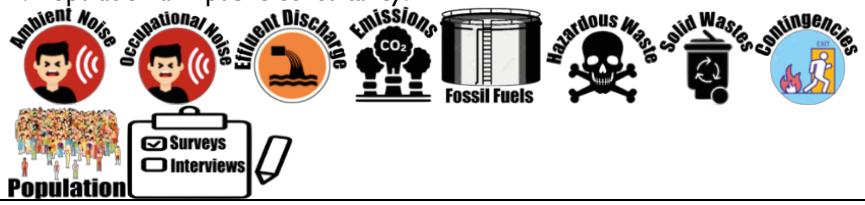
Mar - Jun 2007

ATLANTIC THERMOELECTRIC GENERATOR

Environmental Impact Study Category II

⇒ Base Line, impacts assessment and mitigation procedures:

⇒ Population and public consultancy:



Protected Areas

EcoIngemar
Grupo Ingemar
Consultores Socio-Ambientales

CORPORATE CURRICULUM

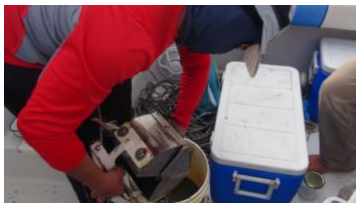
BASELINE SAMPLING AND MONITORING OF:

⇒ Quality of inland and marine waters, with multiparameter, which allows us to make measurements on the surface up to 30 m deep.

⇒ Terrestrial vertebrates Identification of footprints, eses, edges, fog nets, cameras, and traps.

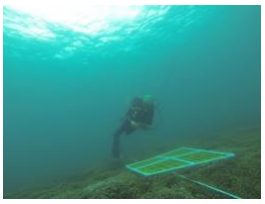
⇒ Fish and aquatic invertebrates, with electric rod, cast net and / or trammel.

⇒ Aquatic insects, perifiton and plankton, by scraping rocks and plankton net.

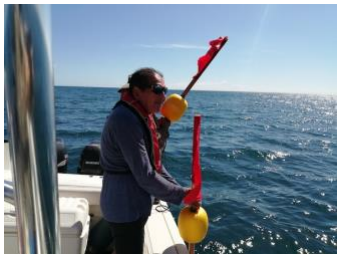


⇒ Marine sediments and benthos, with Pulsen type dredger of 40 cm3.

⇒ Coral reefs Through the International Transept methodology.



⇒ Oceanic and coastal currents with Lagrangian drifters and current meters.
⇒ Current simulations
⇒ Pollutant dispersion simulations
⇒ Wave simulations, using Wind Cast and virtual buoys.



⇒ Environmental Noise, with sound level meter calibrated on site, humidity and winds are recorded.

⇒ Logging, erosion, and sedimentation
With drones, ortho-mosaics are generated to verify that logging remains within the project area approved by the authorities, certify if the sediment leaves the area and track the path of the sediment leaving the area to assess its impacts on the affected surrounding areas.

⇒ Inductions Training on environmental, social, archaeological, national, and international regulations.