

Jilamito Hydroelectric Project

Honduras

Frequently Asked Questions



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General Information

What type of project is the Jilamito Hydroelectric Project?

The Jilamito Hydroelectric Project is a multipurpose Project whose objectives are the generation of renewable energy, the improvement, and expansion of a drinking water system for the inhabitants of the project's area of influence, and the preservation of biodiversity. The Project is a run-of-river hydropower plant, located in the Municipality of Arizona, Department of Atlántida, in the northern region of Honduras.

The purpose of the Project is to contribute to reducing the rationing of electricity on the Honduran Atlantic coastline through the generation of renewable energy and, at the same time, demonstrate that it is possible to develop sustainable hydroelectric projects in Honduras, by adopting best international environmental and social practices.

The Project consists of:

- A run-of-river hydroelectric generating facility with a nominal installed capacity of 14.4 megawatts (MW) that will connect to the national grid.
- Two diversion weirs, a desander, a tunnel of approximately 218 meters of length, headrace low-pressure conduit, penstock, and powerhouse hosting two 7.41 MW Pelton turbines; and
- 10.5 km of new 34.5 kilovolt (kV) transmission line from the powerhouse substation to a switching substation in the town of Lean.
- A cable car with a capacity of 10 tons to raise the necessary materials and equipment to the construction site and thereby minimize the negative impact on the project area.

What is the main outcome linked to the completion of the Jilamito Hydroelectric Project?

The Project will increase the availability of cleaner and more affordable energy in the Honduran Atlantic Coast, where the third most important city in Honduras (La Ceiba) is located, thus contributing to the social and economic development of this region of the country.

Jilamito will contribute to the diversification of the energy matrix by adding 14.4 MW of renewable energy capacity and supplying approximately 85.8 gigawatt hours (GWh) of clean energy to the national grid.

The Project will also provide investment for community projects in the areas of water conservation, education, health and preservation of forests and watersheds.

Finally, Jilamito is expected to have a demonstration effect, showcasing how with the adoption of international environmental and social standards, it is possible to develop hydroelectric projects in Honduras that are environmentally sustainable and bring economic benefits to communities near project sites, while maintaining social stability.

Why is the Jilamito Hydroelectric Project needed?

Honduras' electricity sector is under stress. The northern region of Honduras, which generates 58% of the country's Gross Domestic Product and 60% of the country's exports, is one of the regions affected by energy transmission deficiencies and has been severely impacted by power outages and economic losses. This situation negatively impacts not only the quality of life of Honduras citizens, but also the competitiveness of national businesses and industry.

Power generation in Honduras is costly and highly dependent on hydrocarbons. The country finds itself in need of expanding low-cost sustainable energy production opportunities to improve the efficiency, coverage, quality, and sustainability of the electricity service.

The Jilamito Project can help improve this situation by providing a reliable supply of zero-carbon energy, diversifying the country's energy matrix, and reducing polluting emissions. This can be done with comparatively limited environmental and social impacts given the small size of the project, for which environmental and social mitigation and management programs are being developed.

Why is the IDB Invest involved in the Project?

The role of IDB Invest is instrumental to ensure the financial soundness of the Project, which includes assisting the Project sponsors to attract additional financial resources into the transaction to help its completion. Through technical assistance funds, IDB Invest will help to mitigate the impact of the additional costs that the Project will need to incur to design and execute a comprehensive environmental and social management plan in accordance with international best practices.

The participation of IDB Invest ensures the application of sound environmental and social standards to mitigate and manage the possible impacts of the infrastructure project on the environment and local communities. The participation of IDB Invest will ensure that these standards are applied throughout the project cycle.

IDB Invest involvement includes technical assistance and funding aimed at covering specialized consultancies on social and biodiversity themes, as well as setting up two-way communication mechanisms to ensure proper and timely information sharing, participation, and transparency.

In summary, the rationale for IDB Invest involvement in the Jilamito Project is threefold: (a) to provide access to long-term financing that is not available in Honduras and which is needed to ensure the financial sustainability of the Project; b) to act as a catalyst for additional resource mobilization; and (c) to foster the adoption of social and environmental management best practices.

What are the expected benefits of the Project?

The Project is in the northern part of Honduras. This region has a strategic role for the country since it contributes approximately 58% of the nation's GDP and 60% of its exports.

Despite its economic importance, this region is negatively affected by the constant interruptions of the electric power service due to the lack of distributed generation and insufficient capacity of the National Interconnected System. This forces the country to supply the excess in electricity demand with a bunker-based power plant.

The Project is expected to reduce dependence on costly and polluting thermal energy sources and to help improve the energy security of the northern region of Honduras by adding approximately 85.8 GWh of clean, reliable, and more affordable energy to the national grid. As a result, the emission of other polluting gases will be significantly reduced. It is expected that 40,586 tons of carbon dioxide equivalent (tCO₂eq) emissions will be avoided every year during the life of the Project.

This completion of Jilamito will lead to economic development while reducing the country's dependence on costly thermal or hydrocarbon fuel alternatives. Households and businesses in the northern part of the country will enjoy a more reliable supply of electricity and at a lower cost for ENEE, thus helping to reduce their financial deficit.

Finally, the Project involves the design and execution of a comprehensive environmental and social management plan that is expected to provide a model for sustainable hydropower development in Honduras.

How much electricity will be generated by the Jilamito Hydroelectric Project?

The nominal installed capacity of the Project is 14.4 MW.

Who will operate the Jilamito Project once completed?

The Project will be operated by Inversiones de Generación Eléctricas, S.A. (INGELSA), a special purpose vehicle established under Honduran law to develop, construct, commission, and operate the run-of-river hydroelectric plant.

INGELSA is a private Honduran company incorporated with Honduran and foreign capital. The Project will sell energy on the market under a thirty-year power purchase agreement (PPA) signed with Empresa Nacional de Energía Eléctrica (ENEE), a Honduras state-owned electricity utility, following an international tender process.

What impact will the Project have on the cost of energy?

The generation cost of the Jilamito Hydroelectric Project will be lower than that purchased by ENEE today. Therefore, Jilamito will help reduce the average cost of purchasing electricity, helping to reduce ENEE's financial deficit.

The Jilamito Hydroelectric Project specific cost of generation will be lower than that purchased by ENEE today. Therefore, Jilamito will help reduce the average cost of electricity, helping to reduce ENEE's financial deficit.

Due to energy shortages in the north of the country, the national energy agency (ENEE) has been forced to purchase expensive thermoelectric energy (at US\$0.18 per kWh). The energy generated by the Jilamito Project, when sold to ENEE will be at a monomic price of USD 0.108 kWh under a thirty-year PPA Contract.

When will the Project be completed?

Construction of the Project will start shortly after financial close (estimated for the 2nd quarter of 2021) and, in the absence of abnormal events, is expected to be completed within 38 months.

How much will the Project cost and who is financing it?

The total cost for Project completion had been estimated at US\$75.56 million. The IDB Group (IDBG) will participate in the financing by providing a senior loan of up to US\$20.25 million. The IDBG financing

will be complemented by the U.S. International Development Finance Corporation (DFC) senior loan of up to US\$35.75 million. The financing will be complemented with equity injections from the sponsors for approximately US\$19.56 million or 25.9% of the Project cost.

Table 1: Financial Plan

Sources per Category	US\$ 000s	%
Senior Debt	56,000	74.1%
IDBG	20,250	26.8%
DFC	35,750	47.3%
Total Equity	19,562	25.9%
Total Sources	75,561	100.0%

Social Issues

How many people will be directly affected by the Project?

The Project is located along the Jilamito River, near the village of Jilamito, Arizona Municipality, Atlántida Department, on the north coast of Honduras. Upstream of the Project is the Texíguat Wildlife Refuge, a legally protected area. Downstream are several villages and settlements located on both sides of the Jilamito River and its tributaries.

Survey work for the Project has concluded that four communities, comprising 233 households and a population of 1402, live in the Project's area of direct influence. These communities are Caserío San Rafael, Aldea Jilamito Viejo, Aldea Jilamito Nuevo, and Aldea Hilamo Nuevo.

An additional area of special influence has also been identified. This is an area that due to its geographic location and construction considerations is expected to be providing some services to the Project (e.g., gas stations, access roads, room services, suppliers of materials, and equipment). The area of special influence is the community of Aldea Mezapita, which has 390 households and a population of 1643 people.

Finally, the Project's area of indirect influence (outside the river basin limits) include the communities of Aldea de Mezapa, Aldea El Retiro, Caserío El Empalme, and Caserío Lean.

How are resettlement and compensations going to be handled?

The Jilamito Hydroelectric Project will not involve any involuntary resettlement.

What will be the impact of the Project on communities living in the upstream area?

Upstream of the Project is the Texíguat Wildlife Refuge, a legally protected area. There are no communities or settlements in this area.

What will be the impact of the Project on the communities living in its areas of influence?

The Project is expected to have positive impacts on the communities in terms of economic development, supply of goods and services in the area, social investment activities in community projects, the construction of new roads, creation of jobs, and improved ecosystem services via restoration of areas dedicated to crop production and reforestation programs.

On job creation, the recruitment of labour is expected to promote dynamism in the local economy. It is estimated that 400 jobs will be created during the construction phase.

Additionally, the Project has already started the implementation of social investments in community projects such as water, communications, and education infrastructure. The Project will also provide maintenance to existing access roads into the area, which will benefit communities such as Jilamito Viejo, which currently does not have access to an existing public road.

The investment and related construction are expected to influence domestic demand and gross domestic product. This will translate primarily into an increase in demand for assets from the suppliers of construction materials. Other benefits include opportunities for commercial sectors such as food, hotels, transportation services, private security, telecommunications, clothing, and industrial equipment.

Adverse impacts include increased traffic-related risks and nuisance during construction due to the transportation of machinery and excavations. The increased traffic is expected to create dust and noise near the construction areas and along its access roads. Other potential adverse impacts during project construction may include risks relating to community safety near the project areas, the influx of foreign population stimulated by job opportunities, and the provision of security for the

project, that if not properly managed may introduce hazardous situations towards workers and local communities. A comprehensive Environmental and Social Action Plan has been developed to mitigate these risks.

[Will the Project limit water availability to the communities?](#)

The Project will take water from the Jilamito River, but this water will be returned to the river downstream from the Project site. There are no communities located upstream from the river intake, and all local communities are located downstream from the river discharge. The right to water, as contemplated in the United Nations declaration, will not be affected as a result of the implementation of the Jilamito project.

The Project's Environmental and Social Impact Assessment (ESIA) indicates that no communities currently utilize the Jilamito River as a source of drinking water. Instead, they utilize several small streams that are tributaries to the river. The ESIA also states that the Project is expected to have negligible impacts to the quality of water in the Jilamito River. The Project will periodically monitor water quality during both construction and operation to ensure this is the case.

Although the Project will not impact community sources of drinking water, local communities have indicated to the Project their need for greater drinking water security. As a result, the Project sponsor INGELSA has prepared a Community Drinking Water Strategy developed in consultation with the local communities and stakeholders, which aims to bring water to all communities in the area of influence of the Jilamito Project and guarantee the right to water to those communities.

Specifically, the Community Drinking Water Strategy is expected to improve the provision of safe drinking water to the communities of Mezapita, Mezapa, ElRetiro, New and Old Jilamito, SanRafael, Hilamo, El Empalme, Lean and Rio Chiquito. The existing Community Water Boards (Juntas de Agua) will continue administering the water independently as they are doing today. INGELSA will donate resources to build the water infrastructure needed to provide more water while promoting the conservation and reforestation of the micro watersheds and the conservation of biodiversity in those areas. The community drinking water infrastructure will be constructed in parallel with the Jilamito Hydropower Project.

[Is it safe to live near the Jilamito transmission line?](#)

Yes. An alternatives analysis was conducted for the transmission line, with the preferred option offering the shortest route (10.4 km), lowest

voltage (34.5 kV), and use of local materials (wood poles). Where possible, the transmission line is routed to follow existing roads and rights of way.

A complementary study was conducted on transmission line impacts. The assessment found the effects of electromagnetic fields to be low.

[How are the concerns, opinions, and interests of the Project's stakeholders raised and considered?](#)

The socialization process of the project started in 2006 by Sociedad Eléctrica Mesoamericana S.A, an enterprise associated with INGELSA. In 2013, the process was continued by INGELSA, with continual engagement until today. The socialization focused on providing technical information about the Project in its different stages to the local population and interested parties. This includes explaining the benefits that the Project will generate as well as recording the concerns about environmental and social impacts raised by the Project's affected communities.

The level of engagement of the company with the communities in the area of influence is close and on-going and aimed at establishing transparency and fostering dialogue among the different actors and stakeholders involved.

As part of the IDB Invest financing, INGELSA will be contractually bound to develop and implement a Community Engagement Plan, a Grievance Mechanism for Affected Communities, and a Community Health and Safety Plan. The Project's Community Engagement Plan describes the Project's community relations program, which will include information disclosure and consultation activities, and social investment.

A comprehensive communication plan is being prepared by the Project sponsor to provide adequate and timely information to stakeholders, promote transparency, raise the level of participation by stakeholders, and ensure that the development opportunities linked to the Project are fully understood.

Environmental Issues

[Will any wildlife or natural habitats be affected by the Project?](#)

The Project will not take place within the Texíguat Wildlife Refuge. However, parts of the Project (not including the access road or transmission line) will be located within the buffer zone of the refuge. The Project does not require modification of the refuge's boundaries, as

small, run-of-river hydropower projects like the Jilamito Project are permitted in refuge buffer zones under national regulations.

The Project conducted a Critical Habitat Assessment (CHA) to align with IDB Invest policies and international best practices. The CHA focused on the northern side of the Cordillera Nombre de Dios mountain range, specifically the Jilamito watershed. The CHA concludes that the Project, through the implementation of its Biodiversity Action Plan, will result in a net gain in critical habitat.

The CHA considers the Texíguat Wildlife Refuge to be critical habitat for endangered species, primarily due to the presence of range-restricted herpetofauna (amphibians and reptiles). In addition, higher elevation humid forests are threatened in Honduras and are considered to have provided the evolutionary opportunity for species not found elsewhere. As a result, the CHA considers the Project to be in a critical habitat.

The CHA concludes, however, that the Project is not likely to lead to measurable adverse impacts on the biodiversity values for which the critical habitat was designated. It notes that most impacts will be restricted to the Project footprint. It states that the loss of terrestrial and aquatic habitats in the Project footprint will amount to ecologically insignificant impacts, as the endangered species known or expected to occur within the footprint are all found in other portions of the Texíguat Wildlife Refuge and the Cordillera Nombre de Dios. No species have ranges restricted to or largely concentrated within the Project footprint.

INGELSA fully recognizes the high biodiversity value of the Jilamito watershed and the broad landscape of the Cordillera Nombre de Dios mountains and is committed to developing and implementing actions that will bring net gains to these biodiversity values. This is in line with the requirement in IDB Invest's policies to demonstrate a net gain of biodiversity values for projects located in critical habitat.

[What will be the impact on fisheries and fish fauna?](#)

The Critical Habitat Assessment (CHA) found that the Jilamito River, downstream of the Project site, contains populations of widespread migratory fish. However, the Jilamito basin is considered not to provide habitat for more than one percent of global migratory fish species and therefore does not meet the criteria for critical habitat for migratory or congregatory species. Therefore, the CHA states that the loss of aquatic habitats in the Project footprint will amount to ecologically insignificant impacts.

An ecological flow of 0.25 m³ per second will be maintained on the section of the river between the diversion weirs and the powerhouse. The ecological flow is the volume of water deemed appropriate to maintain the ecological and aquatic function (including as fish habitat) of the river ecosystem along the diverted section of the river.

What are the issues and how is biodiversity going to be managed?

To obtain financing from IDB Invest, the Project will be required to develop and implement a Biodiversity Action Plan (BAP), which will include a Forest Watershed Management Plan, support for the Texíguat Wildlife Refuge Management Plan, a Reforestation Plan, and a Herpetofauna Offset Management Plan.

The objective of the Biodiversity Action Plan is to achieve a net gain in critical habitat triggering species and ecosystems in the Project's area of influence. The Project's Reforestation Plan proposes 77 hectares of forest planting (58,000 plants) with a mix of native trees, shrubs, grasses, and other smaller vegetation. The Project will also be required to hire independent technical oversight and evaluation of the Project's implementation of the BAP.

How the Jilamito Hydroelectric Project impact climate change?

The Project is expected to have a positive impact on climate change. As a renewable energy source, the Project will avoid some greenhouse gas (GHG) emissions. Considering the reforestation planned by the Project, Jilamito is likely to capture significantly more carbon than it will emit, resulting in it being a negative carbon emitter.

The Project will produce a minimal amount of GHG emissions during construction from vehicles and construction equipment. The only source of air emissions during operation will be from a backup diesel generator to be utilized under emergency or abnormal operating conditions. The Project's 2013 Environmental Qualitative Diagnosis concludes that there will be no significant impact related to an increase of atmospheric emissions during operation since there will be no associated combustion process, and that operation of the plant will not result in alterations to existing air quality.

The Project's 2017 Environmental and Social Due Diligence Report states that since the run-of-river project will not include a large upstream reservoir, it is not expected to generate GHG from the storage of water upstream of the diversion weirs.

Additional Information

What mechanisms exist to voice our opinions or complaints about the Project and how should we proceed?

To obtain financing by IDB Invest, the Project is required to develop and implement a Grievance Mechanism for Affected Communities. This mechanism can currently be accessed on the Project's website <https://www.iesa.hn/contacto/>. The mechanism can be utilized to ask a question, express a concern, or log a grievance or complaint. If you are uncomfortable directly contacting the Project, are unsatisfied with the response you have received from the Project, or wish to contact IDB Invest directly regarding this Project, you can do so by clicking on the "Information Request" link at the bottom of the Jilamito Project webpage on IDB Invest's website <https://www.idbinvest.org/en/projects/ph-jilamito>.