

HONDURAS

SUPPORT FOR DEVELOPING FINANCIAL INSTRUMENTS FOR GEOTHERMAL DEVELOPMENT

(HO-T1483)

PROJECT DOCUMENT

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PROJECT SUMMARY

Operation Type:	Technical Cooperation
Sector:	ENERGY
Subsector:	LOW-CARBON ENERGY TECHNOLOGIES
TC Taxonomy:	Client Support
Project Number under the Operational Support Taxonomy:	N/A
Technical Responsible Unit:	INE/ENE-Energy
Unit with Disbursement Responsibility (UDR):	INE/ENE-Energy
Executing Agency:	Inter-American Development Bank

PROJECT OBJECTIVE

The general objective of this Technical Cooperation (TC) is to support Energy Sector Institutions in Honduras in developing a financial mechanisms and business models for geothermal development as well as strengthening institutional capacities. The specific objectives of this TC are (i) to develop financial mechanisms and business models and (ii) to strengthen capacity building and knowledge in geothermal energy.

FINANCIAL INFORMATION

Financing Type	Fund	Amount in US\$
TCN - Nonreimbursable	JSF - Japan Special Fund	600,000
TCN - Nonreimbursable	W2B - OC SDP Window 2 - Infrastructure	150,000
Total IDB Financing		750,000
Counterpart Financing		0
Total Project Budget		750,000
Donors:	N/A	
Disbursement Period:	36 months	
Execution Period:	36 months	

ADDITIONAL FINANCIAL INFORMATION

N/A

I. JUSTIFICATION AND OBJECTIVE

- 1.1 **Diagnostic.** Latin America and the Caribbean have significant geothermal potential, estimated at approximately 70GW. The region has been actively pursuing the development of new geothermal power plants to move toward a clean and sustainable development.
- 1.2 Geothermal energy has a wide range of applications. Its primary use is the generation of electricity, as it can provide a reliable and consistent power supply regardless of weather or seasonal variations—an advantage over other renewables such as solar and wind. This baseload capacity strengthens energy security and grid stability. Beyond electricity generation, geothermal hot water and steam can be directly utilized for multiple commercial and industrial purposes. Geothermal energy can also be harnessed through heat pumps, which exploit the constant underground temperature to heat and cool buildings efficiently. The direct use of geothermal energy offers substantial cost advantages, as it often requires less infrastructure and lower operating costs than other forms of energy supply. It also creates opportunities for local industry development, job creation, and the diversification of regional economies. Especially in rural areas, geothermal projects can stimulate new businesses, enhance competitiveness, and contribute to community resilience. These benefits make geothermal energy not only a clean and sustainable resource but also a driver of economic and social development at both local and national levels.
- 1.3 Despite its advantages, investment in geothermal energy faces several challenges due to its inherent characteristics. One of the major challenges is the high upfront capital requirement, especially during the exploratory drilling phase, which accounts for at least 35–40% of the total investment. Although geothermal potential studies are necessary before costly drilling, many countries lack both the financial resources and the ability to accurately determine available underground resources without drilling. Additionally, geothermal projects involve long development periods—from resource identification to commercial operation start, averaging around seven years. This highlights the need for viable financial models, business strategies, and economic analyses to attract policymakers, stakeholders, and investors.
- 1.4 Honduras has significant geothermal potential; however, it remains largely untapped as a source of energy generation. While the country has made considerable efforts to transition toward renewable energy, particularly hydropower and solar photovoltaic (PV), it still requires a reliable baseload energy source to enhance energy security and resilience. Currently, Honduras has only one geothermal power plant: Geoplatanares, located in La Unión, Copán, with a capacity of 35MW. Several barriers hinder further development. The country has a limited number of experts in geoscientific exploration, which constrains resource assessment. In addition, the scarcity of structured information on geothermal resources discourages investors and developers. Other challenges include unclear licensing and permitting procedures, as well as poorly defined institutional roles. Finally, the financial situation of the national power utility has reduced the interest of private investors considering there is an incentive Law for power generation using renewable energy including geothermal approved in 2007.

- 1.5 **Request.** The Government of Honduras requested the IDB's technical assistance (Annex I) in seeking to enable the contracting and scaling of public and private investment in geothermal energy generation projects by designing viable financial mechanisms and business models tailored to the project's needs, thereby reducing risks for developers and eliminating the main barrier to investment.
- 1.6 **Objective.** The general objective of this Technical Cooperation (TC) is to support Energy Sector Institutions in Honduras in developing a financial mechanisms and business models for geothermal development as well as strengthening institutional capacities. The specific objectives of this TC are (i) to develop financial mechanisms and business models and (ii) to strengthen capacity building and knowledge in geothermal energy.
- 1.7 **Complementarity.** The IDB supported the geothermal working group, achieving several key milestones. The Bank has extensive experience with the Geothermal Financing and Risk Transfer Program ([GRT/TC-14423-ME](#) and [GRT/TC-14424-ME](#)), which is financing a drilling contract for geothermal resource exploration in Mexico. This operation also considers the Bank's experience with the Sustainable Energy Facility for the Eastern Caribbean ([3561/OC-RG](#) and [4712/GN-RG](#)), which is financing a geothermal power plant in Dominica and exploration campaigns in Nevis, totaling US\$41 million to be disbursed in 2025. The successful financing of Chile's [Cerro Pabellon](#) GE project is worth highlighting. Initially generating 48MW in 2017, the project expanded to 88MW. It was funded by the CTF through IDB Invest and implemented by Enel Green Power in partnership with ENAP.
- 1.8 As part of the efforts to strengthen the enabling environment for geothermal development in Honduras, a comprehensive legal analysis was undertaken under Regional Technical Assistance operations [ATN/MC-17429-RG](#) and [ATN/OC-18145-RG](#). This analysis systematically reviewed and documented the procedures, permits, and environmental, administrative, and regulatory requirements applicable to geothermal projects, identifying key challenges and gaps in legal certainty. Recommendations were formulated to enhance the regulatory framework and facilitate investment in the sector, in line with the objectives of TC. In parallel, targeted cooperation activities in Namasigüe and Nacaome comprised geological, geochemical, and geophysical exploration campaigns, the development of conceptual models, and the identification of priority drilling zones. These activities integrated advanced methodologies and multidisciplinary studies to assess geothermal potential and inform future investment decisions.
- 1.9 **Strategic Alignment.** The TC is aligned with the IDB Group's Institutional Strategy: Transformation for Greater Scale and Impact (CA-631) and the objectives: (i) address Climate Change (CC); and (ii) bolster sustainable regional growth with the development of a low carbon, resilient electricity sector. It is aligned with the operational focus areas: (ii) institutional capacity, rule of law, and citizen security; and (iii) sustainable, resilient, and inclusive infrastructure. Additionally, the TC is aligned to the IDB initiative *America en el Centro*, as it contributes to the pillar of Climate Adaptation and Resilience, by supporting the development of a Master Plan and capacity building for resilient infrastructure in Honduras. The TC is also aligned with the Country Strategy with Honduras (2018-2022) ([GN-2944](#))

and the Update to the IDB Group Country Strategy with Honduras 2025-2026 ([GN-2944-3](#)), as it will contribute to the objective of improving the efficiency, coverage, quality, and sustainability of the electricity service and increasing resilience to CC by promoting better quality infrastructure and including appropriate designs for resilient infrastructure. The 2050 roadmap (Hoja de Ruta 2050) created by the Secretary of Energy also highlights the importance of identifying adaptation potentials that can be used to strengthen resilience in the energy sector.

- 1.10 The TC is consistent with the Energy Sector Framework (GN-2830-8) as it contributes to the objective of building institutional capacity and fostering effective governance for the sector by strengthening its capacity to develop sector policies and manage risk; it is also consistent with the Climate Change Sector Framework (GN-2835-13) by supporting decarbonization through the development of a master plan for energy resilience in Honduras, which includes promoting the participation of renewable energy sources, and improving climate adaptation and resilience by helping Honduras to enhance its capacity to adapt to natural disasters and to build a more resilient infrastructure; and finally, it is consistent with the Sustainable Infrastructure Strategy for Competitiveness and Inclusive Growth (GN-2710-5), with the strategic principle of planning and maintaining infrastructure to provide quality services that promote sustainable and inclusive growth.
- 1.11 Additionally, the TC aligns with the Strategic Program for Development Financed with Ordinary Capital - Window 2 Infrastructure (W2B) (GN-2819-14) through the priority area of Sustainable and Resilient Infrastructure, specifically, with the objectives of (ii) improving the quality of infrastructure projects in LAC; and (iv) enhancing the quality of design and efficiency in the execution of infrastructure projects. It is also aligned with the Japan Specific Fund (JSF) in the framework of the Japan Enhanced Initiative (JEI), specifically with the Quality Infrastructure, Resilience against Disaster and Health priorities.

II. COMPONENTS

- 2.1 **Component I. Financial mechanisms and Business Models Development (JSF: US\$500,000.00).** Component I will finance the technical, environmental, commercial, and conceptual subsurface modeling necessary to develop the corresponding financial and business models. For this purpose, at least three specialized firms will be contracted, one each to carry out the environmental, financial, and technical studies.
- 2.1.1 **Activity 1.1. General Assessment.** This activity focuses on conducting studies to promote investment opportunities in both conventional and unconventional geothermal projects. This work involves compiling and analyzing existing research to identify potential high- and low-enthalpy sites. The study will also examine key aspects of the geothermal sector, including regulatory, institutional, technical, and environmental considerations. It aims to develop feasible financial mechanisms and business models that will attract private investment for power generation and industrial applications.
- 2.1.2 **Activity 1.2. Proposal of Financial Mechanism and Project Structure.** A detailed analysis will be conducted on one or two specific sites to visualize the economic impact and benefits of the projects, while also considering the industrial structure of the target area. Additionally, the study will analyze lessons learned from other countries in the region, as well as from Japan. By combining these elements, the final goal is to propose a development plan and a business model that will successfully attract the private sector's interest.
- 2.2 **Component II. Capacity Building and Knowledge Sharing (OC: US\$ 150,000.00 JSF: US\$100,000.00, Total: US\$250,000.00).** Component II will finance workshops, training activities, and geothermal events aimed at strengthening local capacities and promoting knowledge exchange within the sector. Specialized firms will be contracted to design, organize, and implement the local training sessions and events.
- 2.2.1 **Activity 2.1. Technical Capacity Building and Knowledge-Sharing.** This activity focuses on strengthening the capacities of Honduran stakeholders, including government specialists and technical experts from scientific institutions. It provides training in key areas such as evaluating geothermal potential, managing reservoir data, and developing robust business models. It will also organize workshops and knowledge-sharing sessions at regional and local events, inviting Honduran public authorities and developers to present their findings and share experiences. The objective is to raise awareness and promote dialogue on sustainable geothermal development. These events will serve as a platform for exchanging ideas, lessons learned, and best practices among key stakeholders.
- 2.3 **Expected Results.** The main outcomes expected for this TC can be organized in the following part: The first component, Financial Mechanism and Business Model Development, will produce a detailed plan and business model to attract private investment. This involves comprehensive studies to analyze existing data, identify potential geothermal sites, and assess all relevant regulatory, institutional, technical, and environmental factors. The second component, Capacity Building

and Knowledge Sharing, focuses on strengthening the technical skills of key Honduran stakeholders, including government and academic specialists. Training will be provided on geothermal potential evaluation, data management, and business model development. Additionally, this component will facilitate regional workshops and events to promote knowledge exchange and raise awareness about geothermal development.

- 2.4 **Beneficiaries.** The direct beneficiary of this TC is *Empresa Nacional de Energía Eléctrica* (ENEE), Honduras’ state-owned utility. Indirect beneficiaries include public and private developers, and the Honduras Energy Secretariat.

III. BUDGET

- 3.1 **Budget.** The total cost of the TC will be US\$750,000.00, which will be financed with resources from the Japan Enhanced Initiative for Quality Infrastructure, Resilience against Disaster and Health (JEI) of the Japan Special Fund (JSF) and the W2B-OC SDP Window 2 - Infrastructure. Local counterpart funding is not expected. The budget details are provided below.

Budget in US\$			
Components	Japan Special Fund (JSF)	W2B-OC SDP Window 2 - Infrastructure	Total
Component 1: Financial Mechanism and Business Model Development	US\$500,000.00	US\$0,00	US\$500,000.00
Component 2: Capacity Building and Knowledge Sharing	US\$100,000.00	US\$150,000.00	US\$250,000.00
Total	US\$600,000.00	US\$150,000.00	US\$750,000.00

IV. EXECUTION STRUCTURE

- 4.1 The TC will be executed by the Inter-American Development Bank (IDB), based on a request by the beneficiaries, in accordance with the Bank’s Technical Cooperation Policy (GN-2470-2) and the Procedures for the Processing of Technical Cooperation Operations and Related Matters (OP-619-4), through the Energy Division (INE/ENE). At the request of the beneficiary, the Bank will execute this TC, and the execution is justified due to its extensive experience in the sector in the preparation and development of technical and operational activities similar to those proposed for this operation, which will contribute more effectively to the achievement of the objectives of the TC in a timely manner. The Bank will allow for better coordination with the execution of the TC given the importance of addressing technical, procurement, environmental, and climate aspects.

- 4.2 As the EA, the Bank will: (i) guarantee the technical quality of the products and compliance with the standards necessary for the execution of the TC; (ii) facilitate the contracting and execution of studies and consultancies; and (iii) maximize the benefits of the IDB's technical knowledge in the different areas. The TC will be implemented in coordination with the beneficiary. The Bank will be responsible for the procurement processes, which will allow the contracts developed under the TC to be timely and planned at the time of execution. The beneficiary may provide technical inputs to the terms of reference and reports of the consultants, but the Bank will have the autonomy to approve such documents and act as Executing Agency (EA) of the TC. This dynamic will facilitate better articulation between the various actors within the framework of the technical dialogue of this TC.
- 4.3 **Procurement.** All procurement to be executed under this Technical Cooperation have been included in the Procurement Plan (Annex IV) and will be hired in compliance with the applicable Bank policies and regulations as follows: (a) Hiring of individual consultants, as established in the regulation on Complementary Workforce (AM-650) and (b) Contracting of services provided by consulting firms in accordance with the Corporate procurement Policy (GN-2303-33) and its Guidelines.
- 4.4 **Execution and Disbursement Period.** The execution and the disbursement period of this TC is 36 months.
- 4.5 **Monitoring, Reporting, and Supervision.** This TC will be executed in a period of 36 months. The project team at INE/ENE will be responsible for monitoring and facilitating the activities required to achieve the expected results. The TC will be monitored and evaluated in accordance with Bank requirements and through the Results Matrix. Annual and final reports will be prepared in Convergence, as established in OP-1385-4.

V. POTENTIAL RISKS

- 5.1 No major risks are anticipated for this TC. The moderate risks identified in this TC include: (i) coordination between the different entities of the power sector as well as risk management sector and their institutions; and (ii) there are difficulties in obtaining information from the different entities. To this end, the role of the IDB in coordinating the work and providing information among the different entities based on the level of dialogue in the country is key.
- 5.2 **Intellectual Property.** The knowledge products generated within the framework of this TC will be the property of the Bank and may be made available to the public under a creative commons license. However, upon the request of the beneficiaries, the intellectual property of said products may also be licensed and/or transferred to the beneficiaries through specific contractual commitments that will be prepared with the advice of the Bank's Legal area.

VI. EXCEPTIONS TO BANK POLICIES

- 6.1 No exceptions to the Bank's policies are anticipated.

VII. ENVIRONMENTAL AND SOCIAL ASPECTS

7.1 This Technical Cooperation is not intended to finance pre-feasibility or feasibility studies of specific investment projects or environmental and social studies associated with them; therefore, this TC does not have applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).

REQUIRED ANNEXES:

- Annex I: Request from Client
 - Annex II: Results Matrix
 - Annex III: Terms of Reference
 - Annex IV: Procurement Plan
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