

Investment Grant (IGR) Document

I. Basic Information for IGR

▪ Country/Region:	HAITI
▪ IGR Name:	Additional Solar Photovoltaic Capacity to Further Replace Fossil Fuel in the Caracol Industrial Park of Haiti and Neighboring Communities
▪ IGR Number:	HA-G1060
▪ Team Leader/Members:	Tejeda Ricardez, Jesus Alberto (INE/ENE) Team Leader; Juarez Olvera, Mariel (CSD/CCS) Alternate Team Leader; Gonzalez Vidales, Ana (VPC/FMP); Albano Clement Rene Bonaventure (INE/ENE); Jimenez Mosquera, Javier I. (LEG/SGO); Juan Tulande Lopez (INE/ENE); Pinos Cely Ana Maria (INE/ENE); Hinestroza Olascuaga Laura Marcela (INE/ENE); Sanabria, Angel (VPC/FMP); Michel, Patrick (VPS/ESG); Elizalde Baltierra Alberto (INE/ENE); Vila Saint Etienne, Sara (LEG/SGO); Marthe Denise Archambault, Aude Gabrielle (VPS/ESG) Pinos Cely Ana Maria (INE/ENE); Hinestroza Olascuaga Laura Marcela (INE/ENE); Sanabria, Angel (VPC/FMP); Michel, Patrick (VPS/ESG); Elizalde Baltierra Alberto (INE/ENE); Vila Saint Etienne, Sara (LEG/SGO); Marthe Denise Archambault, Aude Gabrielle (VPS/ESG)
▪ Taxonomy:	
▪ Operation Supported by the IGR:	
▪ Date of IGRf Abstract authorization:	July 01, 2024
▪ Beneficiary:	Republic of Haiti
▪ Executing Agency:	Ministere De L'Economie Et Des Finances
▪ Donors providing funding:	Strategic Climate Fund(SCX)Strategic Climate Fund(SCX)
▪ IDB Funding Requested:	US\$2,500,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	36 months
▪ Required start date:	November 2024
▪ Types of consultants:	N/A
▪ Prepared by Unit:	INE/ENE-Energy
▪ Unit of Disbursement Responsibility:	CID/CHA-Country Office Haiti
▪ IGR included in Country Strategy (y/n):	Y
▪ IGR included in CPD (y/n):	N
▪ Alignment to the New Institutional Strategy:	Social inclusion and equality; Productivity and innovation; Institutional capacity and rule of law; Environmental sustainability(i) poverty and inequality reduction, by providing basic electricity service in unserved communities; and (ii) addressing climate change, through investments in pursuing the reduction of emissions

II. Objectives and Justification

- 2.1 This Investment Grant (IGR) operation (“the IGR Project”) builds upon the program “Improving Electricity Access in Haiti” (“the Program”) ([HA-L1140 \[4900/GR-HA\]](#) and [HA-G1045 \[GRT/CF-17708-HA\]](#)). The general objective of the Program is to increase reliable electricity access in Haiti for economic development and to strengthen electricity sector governance. The specific objectives are: (i) the development of decentralized electrical mini-grids with private sector participation; (ii) fostering the supply of electricity with renewable energy (RE) in the *Parc Industriel de Caracol* (PIC); and (iii) strengthening sector regulatory and planning capabilities. The Program is comprised by three components: Component 1. Development of decentralized hybrid mini-grids with private sector participation; Component 2. Sustainable and competitive supply of electricity in the PIC’s network; and Component 3. Strengthening of electricity sector institutions.
- 2.2 The Program HA-L1140/HA-G1045 was approved by the Bank in November 2019 with a total budget of US\$38,000,000: US\$31,500,000 provided by the IDB Grant Facility (GRF) (HA-L1140) and US\$6,500,000 by the United States Agency for International Development (USAID) as a Project Specific Grant–PSG (HA-G1045). Furthermore, on December 16th, 2021, the Bank approved the IGR Project HA-G1048,¹ as a parallel budget of US\$2,650,000, financed by the Clean Technology Fund (CTF), to provide a storage capacity up to 10MWh.² In July 2024, the Program was modified to adapt its approach to the country’s context and evidence progress to date, adjust the result matrix to reduce effectiveness risk, and increase its budget by an additional US\$5,000,000 to finance new activities and its implementation until 2026.
- 2.3 **Program progress.** As of July 8th, 2024, when the Bank approved the modification of the Program HA-L1140/HA-G1045, 10.2% of the original budget has been disbursed. The remaining resources have been committed as follows: (i) Component 1: the contracts for five sites for the construction of mini-grids through private sector concession were awarded to three developers, (ii) Component 2: after two international competitive bidding (ICB) attempts, a group of Korean companies (Sae-A STX Entech Co., Ltd., ShingSung E&G Co., Ltd., and Ssangyong E&C Co., Ltd.), “the Consortium”, was selected to design, build, commission, operate and maintain the 12MWp solar photovoltaic power plant with a storage system (SPP/BESS) in the *Parc Industriel de Caracol* (PIC).³ The contract became fully effective in July 2024, (iii) Component 3: several consultancies for technical and legal support to the *Autorité Nationale de Régulation du Secteur Énergétique* (ANARSE), as well as online and in-person training activities, were carried out.
- 2.4 **Country context.** Haiti is a Caribbean country located on the western part of the island of Hispaniola in the northern Caribbean Sea, a territory it shares with the Dominican Republic, with a population of approximately 11.45 million people (as of 2021).⁴ During the last decades, the country’s socioeconomic development has been affected by debt, political instability, increasing insecurity, economic setbacks, and devastating natural disasters (i.e., hurricanes, and earthquakes).⁵ As a result, Haiti is the poorest country in the Latin America and the Caribbean region (LAC) with a Gross Domestic Product (GDP) per capita of about US\$1,751 (2023), a Human Development Index (HDI) of 0.552 (in

¹ “Battery Energy Storage System to maximize the use of surplus energy from a solar photovoltaic plant located in the Caracol Industrial Park of Haiti” – [HA-G1048 \[GRT/TC-19125-HA\]](#).

² The storage capacity considers 5MW of battery capacity during two hours.

³ SPP/BESS includes the construction of two solar-photovoltaic plants: 8MWp, 4MWp and 10MWh of storage.

⁴ Source: [World Bank, 2022](#).

⁵ Source: [CFR, 2022](#).

2022), which is below the average LAC (0.76), and the food insecurity affects approximately 50% of the population (in 2024).⁶ Haiti is one of the most fragile countries in the world, ranked 10 out of 179 countries in 2023.⁷ Haiti's situation of Fragility, Conflict, and Criminal Violence (FCCV) is marked by a web of interconnected challenges across those three dimensions. This socioeconomic landscape is compound by a lack of access to basic services, including electricity, sanitation, and healthcare, which further exacerbate the country's socio-economic struggles.

- 2.5 **Sector challenges.** Haiti faces significant challenges in the energy sector, including: (i) a low electricity access rate in the country of about 45% (as of 2024) of which only 12.5% are legally connected to the grid. Rural areas are particularly affected by the lack of coverage with massive disparities between rural and urban electrification rates (82% in urban areas vs 18% in rural areas); (ii) at a national level, per capita energy consumption is around 36kWh/year, the lowest on the American continent; (iii) frequent breakdowns and poor quality of electrical service to customers connected to EDH's grid are recurring problems, resulting in only 5 to 9 hours of electricity per day; (iv) much of the electricity supply infrastructure is old and in need of modernization. Generation capacity is insufficient to meet current needs, resulting in 30-60% unmet demand; (v) around 55% of electrical losses, technical and non-technical, and a billed electricity rate of only 45%; (vi) heavy dependence on fossil fuels and non-renewable energy sources to produce electricity, with 82% of installed generation capacity coming from thermal power plants; (vii) limited local experience in renewable energy and low access to international solar PV expertise and technologies; (viii) vulnerability to natural disasters, such as earthquakes and hurricanes, which can cause major damage to electrical infrastructure; (ix) nearly 96%⁸ of the population lack access to clean cooking fuels, relying on wood and charcoal fuels for home energy consumption; and (x) these conditions translate into high tariffs, especially in rural areas,⁹ which remain insufficient to cover operational costs, resulting in an annual deficit of between US\$250 and US\$300 million for the Haitian state (~1.5% of national GDP).
- 2.6 To address these challenges, the IDB, through the Program HA-L1140/HA-G1045, is supporting the GoH's efforts to close the energy access gap by providing reliable and clean energy services with adequate infrastructure and unlocking opportunities for RE development. As part of this effort, this IGR Project (HA-G1060) will help reduce electricity costs by transitioning from diesel and heavy fuel oil to RE sources in the PIC and surrounding communities connected to the park.
- 2.7 **Territorial approach.** In line with the IDBG Framework to Support Populations in Situations of Fragility, Conflict, and Criminal Violence, 2024-2027 (FCCV Framework, GN-3199-2), the Program incorporates adaptive management practices to increase its effectiveness in fragile situations like Haiti. In recent years, the IDBG has been implementing a programming approach in the North of the country, focusing on the creation of jobs and economic opportunities to support the improvement of living conditions. This territorial approach allows for synergies and positive external effects. Access to electricity is an essential component of this strategy.

⁶ Source: National Coordination on Food Security (CNSA), 2024.

⁷ [Fragile States Index, 2023](#).

⁸ Source: [United Nations, 2023](#).

⁹ Average tariff in rural zones of Haiti varies between US\$0.60/kWh to US\$1.5/kWh using mini-grids with private sector participation. *Reference Cellule Energie-MTPTC*.

- 2.8 The Government of Haiti (GoH) has developed the PIC in the Northeast (NE) of the country, which construction started in 2012 under a Public-Private Partnership involving the GoH and the anchor corporate tenant with funding and technical assistance from IDB and United States Agency for International Development (USAID).¹⁰ The PIC is a mixed-use light manufacturing park and industrial free zone in the northeast, which in 2021 employed more than 15,000 people. The PIC electrical system is becoming the backbone of the northeast electrical network. Its electricity supply depends on a 10MW heavy-fuel oil Thermal Power Plant (TEP) operated since 2012 by the National Rural Electric Cooperative Association (NRECA) on behalf of USAID.
- 2.9 Between 2019 and 2023, rising fuel costs and inflation¹¹ have driven the cost of subsidized electricity up by 58%, undermining the competitiveness of the PIC and the provision of electricity to communities of the northeast. The annual electricity delivered by the TEP is about 22 Gigawatt hours (GWh), 45% of which is consumed by the PIC and 55% by about 14,000 residential customers outside the PIC. The TEP currently offers an electricity tariff of approximately US\$0.32/kWh. Without a fuel subsidy, the average cost of electricity in this area would rise to about US\$0.60/kWh. The fuel crisis in Haiti, in 2022, led to a 54-day shutdown of the PIC, resulting in job losses of around 50%. Thus, the shared rationale behind Program HA-L1140/HA-G1045 and this IGR Project HA-G1060 is to ensure a long-term uninterrupted, cleaner, and sustainable electricity supply at a competitive tariff to the PIC tenants and residential users connected to the park. Through the construction of the solar photovoltaic power plant (SPP/BESS), the Program HA-L1140/HA-G1045 aims to replace an estimated 55% of fossil fuel consumption in the PIC with RE, resulting in a more stable and reduced industrial tariff of US\$0.27/kWh, and a residential tariff of around US\$0.32/kWh. The SPP/BESS includes the purchase of solar photovoltaic panels and inverter equipment, while the battery system is financed by the IGR Project HA-G1048. Furthermore, this IGR Project HA-G1060 will enhance the PIC's solar generation capacity by approximately 1.4MWp, increasing it from 12MWp to 13.4MWp.
- 2.10 **Objective.** The objective of this IGR Project is to support the sustainable and competitive supply of clean and cheaper electricity to industrial and residential users in the PIC's network through the development of a modern power system increasing the share of renewable energy in the PIC.
- 2.11 With the IGR Project, the natural effect of incorporating 1.4MWp of additional photovoltaic capacity, is the increase in the share of RE in the generation matrix which reaches up to 58% in the first year of operation. This translates into a lower thermal production requirement, lower fuel costs, fewer emissions, and decreased maintenance demands for the TEP. Moreover, with the expansion of the SPP/BESS, any fuel subsidy will be eliminated from the operation of the new power system at the PIC.
- 2.12 By further supporting the Program HA-L1140/HA-G1045, with 1.4MWp of additional solar-photovoltaic capacity, the IGR Project will support the IDBG's programming

¹⁰ The PIC was created in the perspective of providing favorable operational conditions to attract and retain private investment and increase the region's manufacturing base and export capacity. The Program HA-L1140/HA-G1045 and the IGR Project HA-G160 contribute to this goal by providing clean and more affordable electricity to the surrounding communities of the PIC. The following IDB projects financed the construction of the PIC: 2552/GR-HA (approved July 2011, US\$55M); 2779/GR-HA, 2779/GR-HA-1, 2779/GR-HA-2 (approved Sept 2012, US\$50M); 3132/GR-HA (approved Dec 2013, US\$40.5M); 3384/GR-HA, 3384/GR-HA-1,3384/GR-HA-2 (approved Dec 2014, US\$55M); and GRT/HR-15509-HA (approved Mar 2016, US\$15.3M).

¹¹ Source: [IMF, 2024](#).

approach in Haiti, focusing on ensuring the long-term conditions for the economic development of the Northeast through the PIC (□2.8). The PIC's current reliance on fossil fuels makes it highly vulnerable to supply chain disruptions.¹² Following the requirements of the Strategic Climate Fund,¹³ the IGR Project prioritizes the opportunity to concentrate efforts to benefit from the Program's risk mitigation umbrella (□5.2), and to build up on the Program's progress (□2.4) to achieve higher value for money and impact, through economies of scale that would not be achievable through new interventions targeting needs in other energy areas.

- 2.13 **Economic analysis.** An [economic evaluation](#) has been carried out to assess the incremental effect of adding 1.4MWp to the SPP/BESS (12MWp). The main effects of the additional capacity are expected to include improvements in terms of renewable share, reduction in fuel use, CO₂ emissions, and fewer scheduled maintenance requirements of the TEP given the expected lower hours of use. With this cost reduction, the Medium Voltage (industrial) and Low Voltage (residential) tariffs are further reduced, which translates into higher economic surpluses for residential and industrial customers. The sum of these quantified benefits converts into favorable economic feasibility indicators for the IGR Project, reaching an Economic Net Present Value (ENPV) of US\$1.7 million and an Internal Rate of Return (IRR) of 22.7% for a 20-year horizon, such that the investment is economically recovered within the first four years of operation.
- 2.14 **Expected results and long-term impact.** With the IGR Project, the RE participation increases from 55% to 58% in the first year (+902MWh), further reducing CO₂ emissions by approximately 7.6% over the first 12 months (698 tons). Over 20 years, the IGR Project is expected to generate an extra 21,069MWh of solar electricity and prevent 16,282 tons of CO₂ emissions. The medium voltage electricity rate is also favored during the first year, going from an estimated 27 to 26 cents/kWh, while the residential rate decreases from around 32 to 31 cents/kWh.
- 2.15 **Gender and diversity.** The IGR Project is aligned with the Program HAL-1140/HA-G1045, where at least 10% of women in managerial positions are considered in the new company that will operate the new PIC's electricity system.¹⁴
- 2.16 **Programming approach.** The Bank has been a key partner for the Government of Haiti (GoH), financing programs to address the following three challenges: (i) **Electricity access**-the Bank contributed to the financing of the emergency programs after the 2010 earthquake and the Matthew's hurricane from 2012, through the implementation of small-scale solar generation and lighting projects, and more recently with the initial phase of electricity access programs with mini-grids and solar PV systems in rural communities (GEF Emergency Program for Solar Power Generation and Lighting ([GRT/FM-12093-HA](#)), Improving Electricity Access in Haiti ([4900/GR-HA](#) and [GRT/CF-17708-HA](#)), BESS to Maximize the Use of Surplus Energy from a SPP located in the PIC of Haiti ([GRT/TC-19125-HA](#))). As a result, Haiti has a rural electrification model designed with support from the IDB and the World Bank, which allows the

¹² Electricity generation is compromised during protests that block ports and main roads and that often fall under the control of local gangs. Due to these factors, the PIC had to close for two months in 2022, impacting PIC operations and affecting its viability, while raising doubts among the industrial tenants about whether to stay or leave (□2.18/HA-L1140).

¹³ The SCX finances this IGR Project. These resources will be contingent on exclusive use for solar energy, project readiness in 2024, and rapid execution.

¹⁴ HA-L1140 Outcome indicator SDO 2.3. Women in managerial positions in the operation of PIC's electricity system (EOP target: 10%).

selection of projects proposed by the communities and integrates private and public financing in the execution and operation of new rural mini grids; (ii) **EDH's operation and performance** - the largest hydroelectric plant (Peligre), and its transmission line, have been rehabilitated with resources from IDB operations ([2684/GR-HA](#), [GRT/HR-14830](#) and [3413/GR-HA](#)). As a result, Haiti has recovered close to 20% of the total generation of the national system and more than 90% of the total capacity with renewables. The new transmission infrastructure contemplates a growth in demand that facilitates the development of new generation projects in the area; and (iii) **Private sector participation**- the institutional and regulatory framework of the electricity sector has been revised to give more certainty to the development of the sector with public and private participation in rural zones, thanks to the following programs: Institutional Transformation and Modernization Program of the Energy Sector I, II and III ([2548/GR-HA](#), [2735/GR-HA](#), [GRT/HR-13877-HA](#) and [2953/GR-HA](#)), and Development of Sustainable Energy Access Projects in Haiti with Private Sector Participation ([GRT/LE-19861-HA](#)).¹⁵ All of this effort has resulted in the recent approval of eight new concession agreements to the private sector for the development of mini-grids with renewable energy in rural areas of the country.

- 2.17 **Lessons learned and best practices.** Key lessons learned from IDBG collaboration in the sector include the following: (i) supporting Technical Cooperation (TC) to prepare tender documents and evaluate bids, helps expedite the execution of programs and increase the capacity of the EA; (ii) hiring a dedicated monitoring and evaluation specialist within the EA is important to follow-up on key program milestones; (iii) carrying out regular coordination meetings with the EA and other participating institutions and stakeholders helps identify potential execution risks and optimize the use of resources; (iv) hiring a supervision firm before the start of construction contracts to support the approval of final design; (v) implementing online procurement processes and supporting the promotion of investment opportunities using different platforms and fora such as *Connect-Americas*; and (vi) reviewing by the Bank, including IDB Invest, of alternatives that can facilitate access to guarantees, which currently affects all sectors. Opportunities for synergies between IDB and IDB Invest within the IGR Project's scope include collaboration to assist the Consortium in identifying potential insurance providers with a presence in Haiti and the sourcing of the mandatory insurance covers required for the execution of the contract. The following additional recommendations can be considered to overcome challenges associated to fragile environment: (i) implementing the Early Execution Initiative during program preparation favors the execution of complex bidding processes in the first year of implementation; (ii) implementing a new mechanism where execution is outsourced via a private Project Management Office (PMO) and the GoH oversees execution through a steering committee with IDB participation to provide guidance and ensuring timely disbursements and payments to the PMO based on performance; (iii) public financing should continue to be at the forefront of the infrastructure, reducing risks to leverage future private resources; (iv) establishing a list of preselected qualified international firms with experience working in fragile environments and willing to collaborate with the GoH and the IDB in the development of critical infrastructure and services; (v) creating a business intelligence institution staffed

¹⁵ The approved amounts for each of the operations are US\$2,000,000, [GRT/FM-12093-HA](#); US\$1,000,000 [GRT/MC-12067-HA](#); US\$20,000,000, [2684/GR-HA](#); US\$16,000,000, [GRT/HR-14830](#); US\$7,700,000, [3413/GR-HA](#); US\$35,000,000, [2548/GR-HA](#); US\$12,000,000, [2735/GR-HA](#); US\$3,000,000, [GRT/HR-13877-HA](#), US\$22,000,000, [2953/GR-HA](#); US\$31,500,000, [4900/GR-HA](#); US\$6,500,000, [GRT/CF-17708-HA](#); US\$2,0650,000, [GRT/TC-19125-HA](#); and US\$2,500,000, [GRT/LE-19861-HA](#).

with skilled personnel dedicated to collect and properly manage sector information is urgent in Haiti to ensure transparency, reliability, the timely publication of information, and to foster knowledge generation and transfer; and (vi) publishing bidding documents in French and English and allowing the submission of offers in either language could increase the potential number of firms interested submitting bids.

- 2.18 **Strategic alignment.** This IGR Project is consistent with the IDB Group Institutional Strategy of Transforming for Scale and Impact (CA-631) and is aligned with its objectives of reducing poverty and inequality and addressing climate change. It is also aligned with the operational focus areas of: (i) institutional capacity, rule of law, and citizen security; (ii) productive development and innovation through the private sector; (iii) sustainable, resilient, and inclusive infrastructure; and (iv) biodiversity, natural capital, and climate action.
- 2.19 This IGR Project is also aligned with the IDB Country Strategy with Haiti 2017-2021 (GN2904),¹⁶ which focuses on expanding and sustaining private and public investment and enhancing access to basic public services. This is achieved by facilitating the technical dialogue and promoting sustainability in the energy sector through the diversification of the electricity matrix, reduction of generation costs, reduction of tariff, private sector participation in operation and maintenance, and continued capacity building of sector institutions. It is also consistent with the Sustainable Infrastructure for Competitiveness and Inclusive Growth Strategy (GN-2710-5), the Climate Change Sector Framework (GN 2835-13), the Energy Sector Framework (GN-2830-8), and the FCCV Framework (GN-3199-2).

III. Description of activities/components and budget

- 3.1 **Component 1 – Support the sustainable and competitive supply of electricity in the PIC's network (US\$2,400,000).** This component will finance the design, installation, and commissioning of an additional 1.4MWp solar photovoltaic capacity, complementing the 12MW SPP/BESS financed by the Program HA-L1140/HA-G1045. The main activities associated with this component include the purchase and installation of solar panels, inverters, civil works, and electrical works (see [Technical Specifications for the contracting of the IGR Project](#)). This component will be executed through an amendment to the contract awarded for the construction of the SPP/BESS of the Program (see paragraph 2.3).¹⁷
- 3.2 The contract for the SPP/BESS includes the O&M of the system for the first five years.¹⁸ The IGR Project will be carried out within the same timeframe granted for the SPP/BESS construction. The tariff structure will be sustainable, covering all O&M costs, and accessible to the level of income of residential customers connected to the PIC.
- 3.3 **Project management, monitoring, and contingencies (US\$100,000).** This budget will finance the hiring of audits, monitoring, contingencies, and evaluations of the IGR Project. Management costs also consider the hiring of qualified personnel for the EA that has been affected by the fragile and conflicting environment of the country.
- 3.4 **Indicative Budget.** The total cost of the IGR Project is US\$2,500,000 which will be provided by the Strategic Climate Fund (SCX) in the form of a non-refundable investment

¹⁶ The Country Strategy with Haiti has been extended until December 2024 (GN-2904-3).

¹⁷ The proposed modification of the contract will be less than 10% of the original cost.

¹⁸ In the medium and long term and based on the level of performance, the contract for the O&M of the SPP/BESS is expected to be renewed.

grant administrated by the IDB. Table 1 provides an indicative budget needed to achieve the expected outputs. The largest budget item dedicated to the procurement of the additional solar capacity has been estimated based on the unit costs established in the 12MWp SPP/BESS contract signed recently in the second quarter of 2024.

Table 1. Indicative budget (US\$)

Activity/Component	Description	IDB/SCX
Component 1	(i) procurement of a 1.4MWp solar photovoltaic plant; (ii) supervision	2,400,000
Project management and monitoring	Audits, monitoring, contingencies, and evaluation of the IGR Project	100,000
Total		2,500,000

3.5 **Beneficiaries.** Like Program HA-L1140/HA-G1045, this IGR Project will directly benefit approximately 14,000 users connected to the PIC network in the northeast of Haiti, including both industrial tenants and residential customers. The IGR Project will also reduce the risk of PIC shutdowns due to fuel shortages in Haiti. Indirect beneficiaries include individuals who will benefit from the creation of new local jobs and, as a result, a more attractive and reliable electricity supply.

IV. Executing agency and execution structure

4.1 The Executing Agency (EA) of the IGR Project is the Ministry of Economy and Finance (MEF) through its *Unité Technique d'Exécution* (UTE) using the same execution arrangement of the Program, which include maintaining the [institutional agreement](#) between the MEF, and ANARSE to support the execution of the IGR Project. While MEF/UTE will be responsible for the fiduciary arrangements of the IGR Project, the national regulatory authority (ANARSE) will facilitate technical support during execution. MEF/UTE was selected as the EA of the Program due to its experience in managing the PIC and conducting procurement processes for similar projects. Additional measures to strengthen the capacities of the MEF/UTE in the execution of projects have been adopted with the Program (□5.1).

4.2 **Procurement policies.** The execution of the IGR Project will follow IDB's Procurement Policies: Policies for the Procurement of Goods and Works Financed by the IDB (GN-2349-15) and Policies for the Selection and Contracting of Consultants Financed by the IDB (GN 2350-15), as applicable. UTE will follow the procurement processes of the IGR Project as described in the Procurement Plan (PP) and to be approved by the Bank, which will cover the entire duration of the IGR Project starting on the date the Grant Agreement for this operation enters into effect. The PP will be updated semiannually or as required by the Bank.

4.3 The IGR Project will be executed through an amendment to the contract **AOI-CT-AMACEH-006** awarded to the Consortium¹⁹ for the construction of the SPP/BESS. A proposal of amendment to this contract is under discussion with the Consortium to analyze the scope and cost of work within the resources of the IGR

¹⁹ Sae-A STX Entech Co., Ltd., ShingSung E&G Co., Ltd., and Ssangyong E&C Co., Ltd.

Project. The additional solar capacity of 1.4MWp has been determined using the unit prices offered by the Consortium for the 12MWp SPP/BESS system as a reference, and the budget of US\$2,300,000 allocated from SREP contribution. A price revision form has been designed to facilitate the validation of the required adjustments with the Consortium (see [Price Offer Revision form](#)). The reference costs proposed by the Consortium for the construction of the SPP/BESS were recently revised by the UTE during the negotiation process of the contract signed in April 2024. The negotiation process already considered an incremental cost justified by an increase in the inflation rate, the cost of import of equipment and materials, and the deterioration of Haiti's risk profile (see ¶2.2 of the Program document). In addition, there is an advantage of economy of scale where various items already purchased for the 12MWp SPP/BESS, will be used for the IGR Project.

- 4.4 The Consortium is better positioned to achieve economies of scale and match the unit cost of the SPP/BESS than another firm coming to Haiti solely for the additional 1.4MWp capacity. The IGR Project is expected to be carried out within the same timeframe granted in the contract for the SPP/BESS construction.
- 4.5 **Conditions to be fulfilled before the first disbursement.** The conditions for the disbursement of the resources of the IGR Project are: (i) Component 2 of the Program HA-L1140/HA-G1045 is in execution and disbursing; (ii) the amendment of the contract AOI-CT-AMACEH-006 considering the scope of the IGR Project, has been approved and signed; or if the Consortium does not accept and sign the amendment, the UTE, through a new ICB process, has awarded and signed a contract with a different contractor to build and commission the additional solar capacity funded by the IGR Project; and (iii) a supervision firm has been hired.²⁰
- 4.6 **Financial management and disbursement.** Disbursements will be based on cash flow plans that will be sized according to the IGR Project's execution liquidity needs and with a rolling 12-month planning horizon. Disbursements for investment costs will be covered with the advance of funds equivalent to up to six months of investment and operational costs/expenses anticipated and will be subject to ex-post supervision.
- 4.7 **Audit.** MEF will submit annual audited financial statements of the IGR Project to the Bank within 120 days following the close of the respective fiscal year. The audit will be conducted by an independent firm of auditors acceptable to the Bank, to be selected following the Bank's policies and procedures. The determination as to scope and other related aspects will be governed following the Financial Management Policy for IDB financed Projects (document OP-273-12) and the Guideline for the Preparation of Financial Statements and External Audits. Audit costs will be financed with resources allocated to project management, monitoring, and contingencies.
- 4.8 **Monitoring.** The Project will be monitored using the Bank's supervision instruments. The EA will be responsible for integrating and presenting the following: (i) the multi-year execution plan; (ii) the annual work plans; (iii) the procurement plan and results matrix; (iv) financial plans; (v) audited financial statements; (vi) environmental audits; and (vii) semiannual reports. The semiannual reports will include: (i) a description of the activities executed; (ii) progress towards fulfillment of the indicators in the results matrix; (iii) a summary of the financial situation; (iv) a cash flow estimate for the following six-month period; (v) in the year-end annual reports, the updated annual work plan and the procurement plan; (vi) an analysis of any problems encountered and the corrective

²⁰ See [Terms of Reference for the competitive hiring of a supervision firm](#).

measures adopted; and (vii) problems that might pose a risk to timely execution of the IGR Project. The Bank will provide direct support in the monitoring and supervision using a dedicated tool designed to track the evolution of execution every month, allowing for a more proactive replanning toward meeting expected annual targets.

- 4.9 The IGR Project team will be responsible for the preparation and submission to the donor of the project reporting, in compliance with the stipulations of the Financial Procedures Agreement of the SCX trust fund.
- 4.10 **Evaluation.** MEF will present a mid-term evaluation following the Project Completion Report (PCR) format of the Bank, 60 days after the date on which 50% of the grant has been disbursed. The final evaluation of the IGR Project will be prepared together with the PCR of Program HA-L1140/HA-G1045.

V. Major issues

- 5.1 **Fiduciary risks.** In line with the new risks identified for the execution of the modified Program HA-L1140/HA-G1045, the following risks apply to the IGR Project: (i) if the country's level of insecurity keeps driving professionals to leave the country, including the loss of qualified national staff in ministries and executing agencies, the government may struggle to find technical staff and maintain a stable executing team, which could impair the implementation of the IGR Project; and (ii) early termination if the contractor ends its contract because of security conditions or financial viability issues that become incompatible with the delivery of the IGR Project.
- 5.2 To mitigate these risks, as seen in the Table 2, the IGR Project has allocated contingencies resources that could be added to the Program's resources, to reinforce the EA with expert consultants in solar PV technologies; and to cover unexpected cost overruns before approval by the Bank. For the construction of the IGR Project, the EA will amend the contract AOI-CT-AMACEH-006 with the Consortium. Before the contract modification with the consortium, the EA will ensure that the construction cost has been agreed upon within the IGR project budget, that the new schedule allows sufficient time for its construction, and that the consortium has the financial capacity to undertake the IGR Project. If such modification cannot be justified, the UTE will call for a new ICB.

Table 2. IGR Project and Program (Component 2 Output 2.1) cost structure (US\$)

Activity	Program/Output 2.1			IGR Project	Total
	IDB (HA-L1140)	USAID (HA-G1045)	IDB/CIF- CTF (HA-G1048)	IDB/CIF- SREP (HA-G1060)	
Procurement of a 13.4MWp solar PV plant (12MWp+BESS + 1.4MWp)	20,592,400	6,175,000	2,650,000	2,300,000	31,717,400
Supervision	885,809	-	-	100,000	985,809
Contingencies	1,721,747	-	-	100,000 ²¹	1,821,747
TOTAL	23,199,956	6,175,000	2,650,000	2,500,000	34,524,956

²¹ The breakdown of these resources that include allocation to project management activities will be confirmed during the kick-off workshop of this operation.

5.3 **Other key issues and risks.** The associated risks identified for the Project are presented in the Table 3.

Table 3. Main risk identified

RISK AND TYPE	CLASSIFICATION	MITIGATION
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<p>Political environment. Socio-political unrest that leads to lockdowns, crises in the supply chain of goods, fossil fuel supply shortages, and high prices, or worse insecurity, may affect the Program execution of the Project, causing delays and cost overruns.</p>	<p>High</p>	<ul style="list-style-type: none"> ▪ Implementation of remote monitoring measures, continuous tracking of changes in the socio-economic situation of the country and the international market outlook, as well as the inclusion of provisions and budget for greater security and other contingencies in contracts for unforeseen events. Additionally, the contracts already awarded are concentrated in Haiti's northeast region where the situation is less critical and minimum-security conditions are guaranteed.
<p>Political environment. Socio-political unrest could limit the supervision missions of the IDB team, which may cause delays in Program execution.</p>	<p>Medium-High</p>	<ul style="list-style-type: none"> ▪ Implementation of remote monitoring measures, and continuous tracking of changes in the socio-economic situation of the country
<p>Human resources. Insufficient technical and institutional capacity in the supervision and monitoring of the Project's contract may cause difficulties in the supervision of Project execution, causing delays and cost overruns.</p>	<p>Medium-High</p>	<ul style="list-style-type: none"> ▪ Hiring supervision firms before the start of construction contracts, with contracts considering milestone-based payments. Remote monitoring measures include cameras at construction sites and the use of virtual platforms for progress supervision and real energy consumption monitoring.
<p>Natural environment. If a natural disaster occurs in the region during project execution, the works may be affected and could need repairs, which would delay the Program and increase costs.</p>	<p>Medium-High</p>	<ul style="list-style-type: none"> ▪ Consider the implementation of resilient infrastructure in contracts financed by the Program. ▪ Consider hurricane seasons as part of the Program planning.
<p>Organizational structure. As the elections approach, if there is a change in leadership at the institutions participating in the program's execution, it may lead to a considerable slowdown in the execution of the Project and create additional pressure for a new extension of the Project's final disbursement date.</p>	<p>Medium-High</p>	<ul style="list-style-type: none"> ▪ Continued tracking of the political scenario in Haiti with Bank support.
<p>Economic and financial environment. If inflation exhibits high values as occurred in 2022 and early 2023, and/or if the Haitian Gourde (HTG) depreciates further, the cost of activities may be higher than the estimated Project budget.</p>	<p>Medium-High</p>	<ul style="list-style-type: none"> ▪ Use of allocated contingency resources of the Program and the Project.
<p>Integrity. If there is a lack of required coordination and insufficient institutional capacity, the execution of the Project may be affected, which could lead to delays in the Program and result in cost overruns.</p>	<p>Medium-High</p>	<ul style="list-style-type: none"> ▪ Implementation of specific recommendations from the Office of Institutional Integrity (OI), aimed at strengthening the UTE's capacity to manage integrity risks. These recommendations are reflected in the Program's Operations Manual and the supervisory efforts of both the Project Team and the Haiti Country Office.
<p>Technical and environment. If the contractor and its primary suppliers of solar photovoltaic panels struggle to demonstrate compliance with international practices to avoid forced labor in the supply chain of solar photovoltaic panels, the Project will suffer delays and eventually cost overruns.</p>	<p>Medium-High</p>	<ul style="list-style-type: none"> ▪ Early dialogue with the EA and the contractor to guide the proper preparation of the socio-environmental management plan and the implementation of mitigation measures. ▪ Use of contingencies resources to mitigate delays due to justified cost overruns.

VI. Exceptions to Bank policy

6.1. No exceptions to the Bank's policies are requested.

VII. Environmental and Social Aspects

- 7.1. The Project will finance the design, installation, and commissioning of an additional 1.4MWp solar photovoltaic capacity for the SPP/BESS of the PIC. The terms of reference and products will be consistent with the applicable requirements of the Environmental and Social Policy Framework (ESPF). The SPP/BESS will be located inside the PIC which is already operating for industrial purposes and will have to follow the rules and regulations of the PIC.²² It is not expected that there will be additional vegetation impact on the area initially planned for the 12MWp plant, given that the area confirmed in the tender for the construction of this plant was reduced thanks to technological improvement considering higher capacity panels in a smaller area.²³ The additional 1.4MWp will be installed on the same site next to the 12MWp plant. There are minor potential environmental and social risks due to construction and future interventions which will be managed in collaboration with the solar operator and PIC management (see [E&S screening filter](#)).²⁴ The SPP/BESS will be operated by the PIC solar operator who will prepare an Environmental and Social Management Plan (ESMP). This ESMP will consider mitigation measures for the acquisition, storage, operation and decommissioning of batteries and other equipment as well as health and safety measures for workers. The environmental and social contractual clauses included in the SPP/BESS contract will remain applicable to cover the additional scope of the Project as part of the contract amendment to be signed with the Consortium.
- 7.2. The international competitive process within the framework of the Program to select the solar contractor and operator of the PIC is finalized (contract signed) and is fully aligned with the IDB group's measures to address the risk of forced labor in the supply chain of silicon-based solar modules. The call for tenders required that the ESMP be submitted by the solar operator for approval by the EA before the start of civil works and to proceed with purchase orders. The EA will request no objection from the IDB before approving the ESMPs.²⁵ This ESMP includes a workforce assessment to identify measures to assess, prevent, mitigate, and continuously monitor all risks and impacts related to workforce management and working conditions of workers directly engaged by the contractor or through third parties, such as subcontractors and main suppliers of polysilicon solar panels. If the assessment identifies inadequate labor and working conditions as defined by the core labor standards of the International Labor Organization (ILO) at any of the solar operator's subcontractors and of the main suppliers of polysilicon solar panels which cannot be avoided or mitigated, the solar operator will change its main suppliers with suppliers who can demonstrate adequate labor management and working conditions and comply with the specifications of the technical offer. The EA reserves the right to approve these changes based on the documentation provided and its analysis.²⁶

²² [PIC's ESMP](#) and [HA-L1140 ESMF](#).

²³ Initially approved in 2019, the PIC allocated 12 hectares for the solar power plant (SPP) and a battery energy storage system (BESS). While the original design called for 350W solar panels, advancements in technology now allow for 630W panels, reducing the required land area to 9 hectares. This efficiency gain enables the expansion of the IGR project by 1.4MWp using only 1.2 hectares of the existing 12-hectare allocation

²⁴ Construction activities, including vegetation clearing, topsoil management, grading, excavation, and equipment operation, may temporarily impact the soil. These potential impacts could include erosion, topsoil loss, compaction, and increased contamination. Additionally, the IGR project could increase the risk of landslides and reduce soil porosity, leading to greater runoff. Specific mitigation measures will be described in the ESMP, currently in preparation by the consortium as described in Paragraph 7.1

²⁵ [Draft ESMP of the solar projects prepared by the EA and the consortium](#).

²⁶ A [first draft of the workforce assessment](#) following IDB directives was prepared by the EA based on information submitted by the consortium.

- 7.3. In accordance with the Bank's Environmental and Social Policy Framework, the operation was classified as **Category "C"** because it is estimated that it will only cause minimal or no negative environmental and social impacts. A **High social and environmental risk** is appropriate due to the contextual and political conditions where the works will be developed, and that the EA has limited experience or knowledge of the Bank's Environmental and Social Policy Framework. A **Moderate Disaster and Climate Change Risk Classification (DCCRC)** is assigned due to the IGR Project's location in a flood-risk area and considering that the PIC has an ongoing Emergency Response Plan.
- 7.4. To comply with the requirements of the ESMF and especially those of Environmental and Social Performance Standards 1, 2, 4, and 10, the actions described below will be carried out:
- i. **NDAS 1:** An ESMP is in preparation, and it will be approved before the start of civil works, and to proceed with purchase orders of equipment. The ESMP becomes the basis for the management of environmental and social impacts and risks by contractors and subcontractors. The ESMP is prepared considering the PIC's ESMP and the Program's Environmental and Social Management Framework (ESMF). Footnotes 17, 18, 19.
 - ii. **NDAS 2:** The Labor Management Procedures that govern the IGR project's life cycle are established by the national legislation of Haiti. Haiti is a signatory of the multilateral agreements concluded within the framework of the International Labor Organization (ILO) and the United Nations (UN), which in turn are internalized in national legislation. In this way, the national legislative framework is aligned with the principles of protection of the fundamental rights of workers and contemplates the requirements established in NDAS 2, in terms of working conditions and terms of employment, labor organizations, non-discrimination, and equality, opportunities, workforce reduction, complaints mechanism, child labor, forced labor and occupational health and safety, including regulations for third-party workers. The ESMP includes a labor assessment to identify measures to assess, prevent, mitigate and continuously monitor any labor and working condition risks and impacts to workers directly engaged by the contractor, subcontractors, and primary suppliers of polysilicon solar panels ¶7.2, ¶7.3).
 - iii. **NDAS 4:** An Emergency Response Plan will be developed for the IGR Project, as part of the ongoing ESMP. This document will be consistent with the PIC's Emergency Response Plan.
 - iv. **NDAS 10:** In proportion to the minimum expected impacts and risks, the IGR Project will use the communication channels and mechanisms available in the PIC for complaints and claims. Through these channels, information about the IGR Project will be disseminated and comments, complaints, and claims from citizens and workers regarding socio-environmental matters may be received, which will be duly recorded, analyzed, and managed.

Required Annexes:

[Request from the Client_10946.pdf](#)

[Results Matrix_37264.pdf](#)

[Terms of Reference_5011.pdf](#)

[Procurement Plan_88797.pdf](#)